Aus der Medizinischen Fakultät Heidelberg
der Ruprecht-Karls-Universität
Heidelberg Institut für Global Health
(Direktor: Prof. Dr. Dr. Till Bärnighausen)

Examining men's experiences of antiretroviral-based HIV treatment and prevention in Malawi and Eswatini with a focus on enablers, barriers and opportunities – a mixed methods study highlighting the intersectionality of stigma, masculinity and the life-course

Inauguraldissertation zur Erlangung
des Doctor scientiarum humanarum (Dr.sc.hum.)
an der Medizinischen Fakultät Heidelberg
der Ruprecht-Karls-Universität

vorgelegt von
Astrid Berner-Rodoreda

aus
Esslingen

2022

Dekan: Prof. Dr. med. Hans-Georg Kräusslich
Doktorvater: Prof. Dr. Dr. Till Bärnighausen
Co-Betreuer: Dr. med. Florian Neuhann

DEDICATION

I dedicate this dissertation to the men in Malawi and Eswatini who readily shared their experience of treatment and prevention-related HIV-services. May their personal accounts help put the spotlight on men who have sex with women as a neglected group in HIV interventions and may it contribute to appreciating the diversity and complexity of men's health-related decisions and behavior. I would further like to dedicate this work to the health personnel and stakeholders in both countries for their tireless and committed work. May this dissertation help us re-design and further adapt health services to cater for the needs of all gender and age groups.

And I would also like to dedicate this work to my family and friends who believed in me when the project seemed overwhelming. Many thanks to my dear husband Geoff whose health-seeking behavior has inspired me to study the health-seeking behavior of other men, for his unfailing support, love, wisdom and encouragement and to my wonderful children, Sophie and Ben, for travelling this journey with me and accepting that much of my time over these last few years was dedicated to academic work.

TABLE OF CONTENTS

LIST OF ABBREVIATIONS

3TC	lamivudine (antiretroviral drug)
ABC	abacavir (antiretroviral drug)
AIDS	acquired immune deficiency syndrome
ANC	antenatal care
ART	antiretroviral treatment
ARV	antiretroviral drug
ATZ	atazanavir (antiretroviral drug)
AZT	zidovudine (antiretroviral drug)
CARGS	community ART refill groups
D4T	stavudine (antiretroviral drug)
DTG	dolutegravir (antiretroviral drug)
EFV	efavirenz (antiretroviral drug)
FGD	focus group discussions
FTC	emtricitabine (antiretroviral drug)
HIGH	Heidelberg Institute of Global Health
HIV	human-immunodeficiency-virus
IDI	in-depth interview
int.	international
M+E	monitoring and evaluation
MMDD	multi-months drug dispensing (of ART)
MPHIA	Malawi population-based HIV impact assessment
MSW	men having sex with women
MSM	men having sex with men
NVP	nevirapine (antiretroviral drug)
OPD	outpatient department
PEP	post-exposure prophylaxis
PICT	provider-initiated counselling and testing
PLHIV	people living with HIV
pp.	pages
PrEP	pre-exposure prophylaxis
QECH	Queen Elizabeth Central Hospital
SHIMS	Swaziland HIV incidence measurement survey
SMS	short message service
STI	sexually transmitted infections
TasP	treatment as prevention
TB	tuberculosis
TDF	tenofovir disoproxil fumarate (antiretroviral drug)
UFC	Umodzi Family Centre
UAEM	Universities Allied for Essential Medicines
UN	United Nations
US	United States
VAPN	Voluntary assisted partner notification
VL	viral load
VLS	viral load suppression
VMMC	voluntary medical male circumcision
yrs	years
WHO	World Health Organization

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

INTRODUCTION

Please note: the author has published partial aspects of the Introduction in:

Berner-Rodoreda, A., Geldsetzer, P., Bärnighausen, K., Hettema, A., Bärnighausen, T., Matse, S., McMahon, S.A., 2020. **"It's hard for us men to go to the clinic. We naturally have a fear of hospitals." Men's risk perceptions, experiences and program preferences for PrEP: A mixed methods study in Eswatini.** PLOS ONE *15*, e0237427, doi: 10.1371/journal.pone.0237427.

Berner-Rodoreda, A., Ngwira, E., Alhassan, Y., Chione, B., Dambe, R., Bärnighausen, T., Phiri, S., Taegtmeyer, M., Neuhann, F., 2021. **"Deadly", "fierce", "shameful": notions of antiretroviral therapy, stigma and masculinities intersecting men's life-course in Blantyre, Malawi**. BMC Public Health *21*, 2247, doi: 10.1186/s12889-021-12314-2.

HIV research, programs and interventions are guided by the overall goal of ending the AIDS epidemic by 2030 as enshrined in the Sustainable Development Goals (United Nations General Assembly, 2015) and the UN Political Declaration on HIV and AIDS (UN General Assembly, 2016). To measure progress towards this goal, UNAIDS demarcated milestones regarding treatment, prevention and discrimination for 2020 and 2030. The objectives for treatment were to reach "the three 90s" by 2020 and "the three 95s" by 2030: 90%/95% of HIV-positive people knowing their HIV-status, 90%/95% of those who are HIV-positive being on treatment, and 90%/95% of those on antiretroviral treatment (ART) suppressing their viral load (UNAIDS, 2014a). For prevention, the global targets were to lower new infections in adults to 500,000 by 2020 and to 200,000 by 2030. In terms of discrimination, the goals for both 2020 and 2030 continued to be "zero" discrimination (UNAIDS, 2014a, 2014b).

Enormous progress in rolling out antiretroviral treatment has been made in recent years. At the end of 2020, 84% of people living with HIV (PLHIV) knew their status, out of these 87% received ART, of those on ART, 90% attained viral suppression globally (UNAIDS, 2021a). Eight countries reached the 90/90/90 targets – among them the high HIV prevalence countries of Eswatini for its entire population and Malawi for its 15+ year population (UNAIDS, 2021a). However, for the period of interest for this dissertation (2017-2019), Malawi fell short of reaching the three 90s for the male population (UNAIDS, 2019).

Progress on prevention has, however, not kept pace with treatment progress. The 1.5 million new HIV infections in 2020 (UNAIDS, 2021a) were a far cry from the 500,000 target for the same year. The insight that "we cannot treat ourselves out of the AIDS pandemic" (Lamptey et al., 2011, p. 2) returned the focus to HIV prevention alongside treatment (UNAIDS, 2014a). Combination prevention with an emphasis on "treatment as prevention"[1], comprehensive sexuality education, condom use, voluntary male medical circumcision and pre-

[1] The HPTN052 trial (Cohen et al., 2016, 2012,2011) showing no transmission from a virally suppressed client on ART to an HIV-negative partner in the final analysis reinforced the concept of "treatment as prevention".

exposure prophylaxis (PrEP)[2] is believed to drastically reduce HIV infections (UNAIDS, 2021a). PrEP targets for 2020 were three million PrEP users globally (UNAIDS, 2017b); the actual number of global PrEP users rose from 600,000 at the end of 2019 to 900,000 at the end of 2020[3] thus showing a profound gulf between vision and reality. In addition, new challenges such as SARS-CoV-2 have impacted on supply chains and access to prevention and treatment services but they also propelled flexible and differentiated service delivery approaches such as multi-months drug dispensing (Huber et al., 2020; Wilkinson and Grimsrud, 2020).

The "zero discrimination" target had already been communicated a decade earlier (UNAIDS, 2010) and is reiterated in UN Political Declarations on HIV at regular intervals in terms of eliminating stigma and discrimination (UN General Assembly, 2021, 2016, 2011). Yet, 40 years into the HIV epidemic, neither stigma nor discrimination of PLHIV has been overcome (Berner-Rodoreda et al., 2021b, Motswapong, 2016; Sweileh, 2019; UNAIDS, 2021a). The UNAIDS Executive Director aptly commented that "viruses don't discriminate... societies do".[4] Discrimination as "unfair treatment" has been differentiated from stigma as a "negative stereotype"[5] and appears as the more severe form as it overtly disadvantages people. While discrimination can be addressed with appropriate legislation (Cameron, 2012), stigma boundaries are difficult to define with discrimination and enacted stigma being used interchangeably (Boyle, 2018; Maughan-Brown and Nyblade, 2014). Eliminating stigma may turn out to be the hardest goal to achieve as it requires a change of mindset, attitudes and behavior, not "just" a different legal framework that upholds the rights of individuals and population groups, important as non-discrimination laws are for providing protection and a legal recourse for people who have been treated unfairly.

1.1. ART and PrEP

Effective ART, composed of a fixed-dose combination of currently three antiretroviral substances (ARVs) taken daily, has been shown in a systematic review to lead to viral load suppression (VLS) within six months in about 75% of clients (Boender et al., 2015); studies published since have shown VLS at around 85% (Hosseinipour et al., 2017; Mujugira et al., 2016). VLS has been demonstrated not only to improve the health of PLHIV but also to have the additional benefit of rendering PLHIV non-infectious (Cohen et al., 2016, 2012, 2011), see also footnote 1. The WHO defines VLS as detecting less than 1,000 copies of the virus per ml blood and virological failure as constituting two viral load (VL) measurements above 1,000

[2] taking antiretroviral drugs to prevent an HIV infection, see 1.1.
[3] see https://data.prepwatch.org/, accessed [27.11.21].
[4] Winnie Byanyima on Zero Discrimination Day, 2021 (UNAIDS, 2021b), accessed [15.07.2021].
[5] see https://ontario.cmha.ca/documents/stigma-and-discrimination/ accessed [15.07.2021].

copies/ml blood within three months despite adherence counselling (World Health Organization, 2016).

To end the AIDS epidemic, Eisinger and colleagues speak of "optimizing the treatment and prevention tool-kits" (Eisinger et al., 2019, p. 2212) and view one of the newer tools, PrEP, as playing a key role for bolstering prevention.

> With the demonstrated success of TasP [treatment as prevention] and PrEP, it is theoretically possible to rapidly end the HIV pandemic as an epidemiological phenomenon by providing ART to all or most individuals with HIV and making PrEP widely available to individuals at high risk of HIV. (Eisinger et al., 2019, p.2212f)

PrEP is currently taken as a combination of two antiretroviral drugs and recommended for all HIV-negative people at a heightened risk of HIV infection defined as 3 per 100 person-years (World Health Organization, 2015a, 2016). In highly adherent PrEP users, HIV transmission can be reduced by over 90% (Spinner, 2016). The ARV-combination of tenofovir disoproxil fumarate and emtricitabine (TDF/FTC) was approved by the Food and Drug Administration in 2012 for PrEP use in adults at high risk (Holmes, 2012); in 2018, its usage was extended to high risk adolescents. Some African countries use lamivudine (3TC) in combination with TDF as a WHO approved and more affordable PrEP alternative (Hodges-Mameletzis et al., 2018) for expanding prevention services. Yet, at the end of 2019, PrEP was mainly used in the United States of America; the 140,000 PrEP users in Africa were predominantly based in Kenya and South Africa, see footnote 3 and (Irungu and Baeten, 2020).

At the time of research, ART and PrEP had to be taken daily and required regular clinic follow-ups. With considerable commitment expected from ART and PrEP users, the two ART-based interventions can be compared and contrasted, as Haberer and colleagues have shown (2015). *Table 1* is an adaptation of Haberer's juxtaposition of ART and PrEP.

Table 1 Differences between ART and PrEP, adapted from (Haberer et al., 2015, p. 1278)

	Antiretroviral Therapy (ART)	**Pre-Exposure Prophylaxis (PrEP)**
Eligibility	Everyone tested positive for HIV	Everyone tested negative for HIV and at high risk
Regimen	Globally, mostly a daily regimen of three ARVs – various triple therapies available	Presently a daily regimen of two ARVs (tenofovir disoproxil fumarate combined with either emtricitabine or lamivudine)
Alternatives	No effective alternative	Other prevention tools such as condoms
Monitoring	Regular viral load tests	Regular HIV tests (at least every 3 months)
Benefit	Effective treatment which prevents onset of AIDS, prolongs life and restores/maintains health	Effective prevention tool against HIV
Duration	Life-long treatment	Risk-related, can therefore be intermittent
Psycho-social Concerns	Risk of stigma and discrimination Judged to have been promiscuous Suffering from depression	Risk of being confused with a person living with HIV and experiencing stigma Risk of being seen as promiscuous
Services	Mostly clinic-based	Clinic-based (moving beyond studies)

Based on MSW's experiences with ART and PrEP, this table will be revisited and amended, see *table 27.*

1.2. Men who have sex with women (MSW)

With ART and PrEP (and other HIV prevention methods) the world has the technical means to end the AIDS epidemic (Eisinger et al., 2019), yet the challenge is to reach those who do not easily make use of health facilities such as key populations, e.g., men who have sex with men (MSM), sex workers and drug users. Men who have sex with women (MSW)[6] have also been shown to underutilize health services and to consistently lag behind women in health outcomes in many countries (Adams and Zamberia, 2017; Barnabas Njozing et al., 2010; Seymour-Smith et al., 2002; Yeatman et al., 2018). This is also evident in the gender disaggregated attainment of the three 90s for 2020 not only globally but also in the geographic area of interest, the area with the highest HIV-prevalence rates. While HIV-positive women achieved the 2020 UNAIDS goals in East and Southern Africa, HIV-positive men still have to close a gap, see *figure 1.* Why men lag behind women in utilization of HIV services and what can be done to increase male participation will be an important area of exploration.

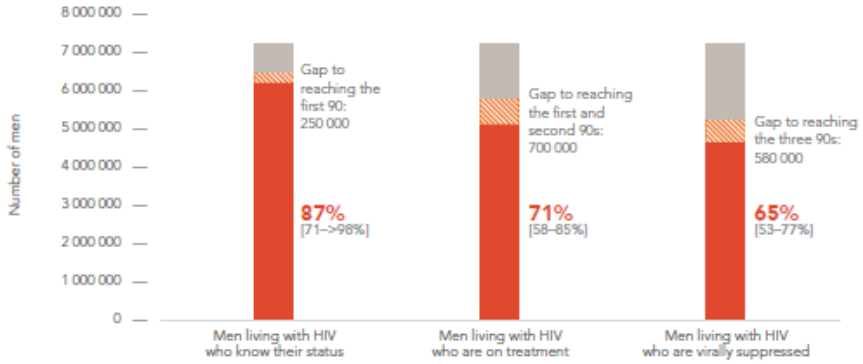

Figure 1 Testing and treatment cascades for HIV-positive men aged 15+ in East and Southern Africa (UNAIDS, 2021a, p. 249)

The focus of this dissertation is therefore on MSW, a hitherto neglected group in HIV-related research beyond serodiscordant couples (Koechlin et al., 2017; Kou et al., 2017) and in the global and national responses to HIV prevention and treatment (Baker et al., 2014; Colvin, 2019; Cornell et al., 2011). Only in the last five years has UNAIDS highlighted MSW as a bottleneck for "quickening the pace towards ending AIDS as a public health threat" (2017a, p. 9), and a recent review on ART retention concluded that "no studies have explored heterosexual male-centered interventions in HIV care" (Kusemererwa et al., 2021, p. 9).

In this dissertation I will examine MSW's HIV-(and health-)related behavior, their uptake, experience and retention of ART and PrEP and experiences with ART and PrEP service delivery by considering their own as well as an outsider perspective (men in the community,

[6] I am using the term "men who have sex with women" (MSW) to denote that the same men can also have sexual relationships with men. In countries where homosexuality is criminalized and highly stigmatized, heterosexuality should not be automatically assumed in men who have sexual relationships with women.

local leaders, stakeholders and health care providers) and societal perceptions (including masculine norms and stigma). I will also compare and contrast MSW's ART and PrEP experiences thus adding further insights to Haberer's table of differences from a male perspective. Men's experiences of HIV medical prevention and treatment are crucial in designing future prevention and treatment services in Southern Africa to maximize uptake and continuous engagement of a group which is often seen as "difficult to reach" in terms of HIV interventions (Fernández-Balbuena et al., 2015, p. 366).

1.3. Literature review

In this section I will review the literature on MSW in relation to masculinity issues, HIV, HIV testing, PrEP, ART, adherence, viral load suppression and stigma. Literature searches were conducted through *pubmed* and *google scholar* employing the above search terms in connection with heterosexual men. Through cross-referencing of published articles, further relevant articles were identified with many of them addressing a number of issues such as ART, adherence, viral load suppression and stigma. For ART related literature, systematic reviews and articles published in the last five years were prioritized as treatment guidelines have changed dramatically over the last decades.

1.3.1. MSW and masculinity

A systematic review and meta-analysis showed a 46% higher mortality hazard for men on ART globally and a 41% elevated hazard for men in Sub-Saharan Africa (Beckham et al., 2016), yet for the first decades of the HIV epidemic, MSW were not included in HIV policies and if considered at all in programs, they were viewed as transmitters (Berner-Rodoreda et al., 2021b; Higgins et al., 2010; Mills et al., 2012). MSW were seen to play a key role for the HIV prevention of women (Amaro, 1995) but not seen as a vulnerable group in their own right (Berner-Rodoreda et al., 2021b, 2020c; Dworkin, 2015). Only in recent years have MSW been given more attention in the field of HIV for their own improved health outcomes (Higgins et al., 2010; UNAIDS, 2017a). MSW's slow uptake of HIV prevention and treatment services (Baker et al., 2014; Cornell et al., 2015, 2011; Huerga et al., 2016; Novitsky et al., 2015; Varga, 2001) can be seen as an expression of the gender gap in accessing health services (Addis and Mahalik, 2003; Courtenay, 2000; Galdas et al., 2005; Mahalik et al., 2007; Seymour-Smith et al., 2002; Wehner et al., 2015).

Norms of masculine behavior such as risky sexual behavior in terms of multiple and concurrent sexual partners, alcohol consumption and a reluctance to use condoms have been associated with putting men and their sexual partners at risk of an HIV infection (Bowleg et al., 2011; Fleming et al., 2016; Nyanzi et al., 2009; Pulerwitz et al., 2010). Literature on masculine norms frequently draws on the concept of "hegemonic masculinity" – a term coined

in the 1980s by Connell who drew on Gramsci's historical understanding and use of hegemony or dominance in terms of internalized power relations (Connell and Messerschmidt, 2005), see also (Berner-Rodoreda et al., 2021b). Adapted to gender, Connell defines hegemonic masculinity as "the configuration of gender practice which embodies the currently accepted answer to the problem of the legitimacy of patriarchy, which guarantees (or is taken to guarantee) the dominant position of men and the subordination of women" (Connell, R. W., 2005, p. 77). Normatively, hegemonic masculinity was perceived as "the most honored way of being a man" (Connell and Messerschmidt, 2005, p. 832). Connell's concept had shifted the discourse from a "single normative male sex role" (Nascimento and Connell, 2017, p. 3979) to emphasizing multiple and hierarchically ordered masculinities which could vary from one context to the next (Berner-Rodoreda et al., 2021b). Many studies on men and health use the concept of hegemonic masculinities with the intention to improve the health-seeking behavior of men by depicting alternative masculinities or challenging dominant masculinities (Bowleg, 2004; MacPhail, 2003), showing that masculinities are in flux with new and old concepts being held by men (Wehner et al., 2015), or intending to improve the understanding of health personnel of men's needs (Siqueira et al., 2014). Applied to HIV, the concept of hegemonic masculinities has been drawn upon to understand male risk-taking behavior with a view to reducing it (Bowleg, 2004; Bowleg et al., 2011; Brown et al., 2005; Ganle, 2016; Morrell et al., 2012, p. 23; Nyanzi et al., 2009; Simpson, 2007).

1.3.2. HIV testing

A recent meta-analysis on HIV-testing strategies in Sub-Saharan Africa revealed men's openness towards self-testing due to privacy and convenience, yet also demonstrated the need for counselling to prevent men from harming themselves (Hlongwa et al., 2020). A systematic review of testing strategies for men showed that facility-based provider initiated counselling and testing (PICT), community based testing (mobile or home testing) as well as couple testing led to significantly higher percentages of men to test compared to control arms which consisted of standard voluntary testing at facilities (Hensen et al., 2014). Offering HIV-testing in pharmacies attracted a high percentage of heterosexual men in a study in Spain (>52%) with almost 60% of heterosexual men testing for the first time as they perceived pharmacy testing to be fast and convenient (Fernández-Balbuena et al., 2015). A scoping review on masculinity and testing behavior showed facilitators and barriers in terms of upholding or compromising the provider role and male autonomy; a male-unfriendly environment in which masculine norms were associated with promiscuity, and clinics as perceived feminine spaces constituted barriers for men to test (Sileo et al., 2018).

1.3.3. PrEP

PrEP trials have shown adherence to be key for PrEP efficacy (Baeten et al., 2012; Haberer et al., 20 15; Koss et al., 2018, Spinner et al., 2016), yet beyond trials with serodiscordant couples, literature on PrEP and MSW remains sparse, and few publications describe the actual experience of MSW with PrEP (Bärnighausen et al., 2020; Berner-Rodoreda et al., 2020c; Nakku-Joloba et al., 2019; Toledo et al., 2015). PrEP literature reviews have focused on MSM (Traeger et al., 2018), MSM and risk behavior (Freeborn and Portillo, 2018) and PrEP and women (Bailey et al., 2017). A PrEP general population literature review (Koechlin et al., 2017) uncovers only two MSW studies examining hypothetical views of PrEP acceptance among truck drivers in India (Prem Kumar, S. G. et al., 2013; Schneider et al., 2010), as PrEP was unavailable at the time (Berner-Rodoreda et al., 2020c).

PrEP studies with MSW described participants' views and acceptability of PrEP (Fowler et al., 2014, Govender and Abdool Karim, 2018, Hannaford et al., 2018, 2020, Smith et al., 2012; Young et al., 2014) or preferences for specific PrEP products (Atujuna et al., 2018, Cheng et al., 2019, Mack et al., 2014a), see also (Berner-Rodoreda et al., 2020c). This is in addition to studies with serodiscordant couples on the efficacy of PrEP substances (Baeten et al., 2014, 2012) and the willingness of the HIV-negative partner to use PrEP (Falcão et al., 2016; Mijiti et al., 2013). MSW's actual experience with PrEP relate to side-effects, adherence, retention and negative community beliefs in a PrEP trial in Botswana (Toledo et al., 2015), see also (Berner-Rodoreda et al., 2020c) and to strategies of serodiscordant couples to overcome discord in the Ugandan Partners' Demonstration Project (Nakku-Joloba et al., 2019). The Eswatini PrEP demonstration project is one of the first projects to study MSW's real life experience with PrEP outside of trials and as part of a large population study (Bärnighausen et al., 2020; Berner-Rodoreda et al., 2020c).

1.3.4. ART

A meta-synthesis of qualitative ART studies showed that relationships with health personnel, family or friends, short message service (SMS) information and counteracting stigma could boost retention (Hall et al., 2017). While Hall and colleagues did not break down results in terms of gender, the quotes would suggest that family connection and SMS information acted as retention facilitators for men (Hall et al., 2017). A study in Gabon based on questionnaires and pharmacy visits found that clients with primary education and singles had better self-declared adherence; those on ART for a longer period showed more adherence problems, yet the authors acknowledge that there is a possibility of social desirability bias or for less educated clients to not fully understand the questionnaire (Mongo-Delis et al., 2019). By contrast, a prospective study comparing an Asian and African cohort found a diminishing risk

of poor adherence, the longer clients were taking ART in both settings (Bijker et al., 2017). Forgetfulness, stigma and pill-burden were among the challenges faced in the African cohort (ibid).

Findings from a study in Mozambique show that participants in community ART refill groups (CARGS) experienced benefits in terms of time-saving for collecting ART, better health information and the ability to help others (Kun et al., 2019). In Zimbabwe, barriers for men to participate in CARGS were related to not perceiving benefits, fear of stigma and poor access to information; incentives and male-only groups acted as facilitators (Mantell et al., 2019).

A systematic review on linkage to care and retention suggested a reduction of clinic visits, more support to clients and incentives as reducing discontinuation (Govindasamy et al., 2014). A more recent meta-synthesis identified gender, housing, food and transport as playing a major role for ART clients' access and retention in HIV programs with men showing poorer linkage to and greater disinterest in care and retention than women due to masculinity concerns and an unfriendly clinic reception (Tucker et al., 2017). Unhelpful clinic staff, lingering images of HIV as equivalent to AIDS and death, the requirement to eat healthily, fear of side-effects and stigma were portrayed as barriers for men to act on Test and Treat in a study in Eswatini (Adams and Zamberia, 2017).

In United States (US) studies with men, adherence and keeping appointments were associated with VLS; difficulties in achieving VLS were associated with depression and younger age, particularly for the 18-29-year-olds (Christopoulos et al., 2020; McCree et al., 2020; Mimiaga et al., 2020). A Brazilian HIV surveillance cohort linked heterosexuality and younger age but also dosing frequency and pill-burden with not achieving VLS (Meireles et al., 2018). A small Georgian study associated only refill appointment adherence with VLS (Chkhartishvili et al., 2014). The UK Chic study with over 13,000 participants showed a tendency for improved VLS over the years on ART (O'Connor et al., 2014). Studies thus highlight time on ART, age, sexual orientation, and pill burden as important factors for adherence and VLS.

1.3.5. Stigma

Stigma including self-stigma and discrimination of PLHIV has been depicted as a persistent barrier in the field of HIV from the 1980s to the present (Berner-Rodoreda et al., 2021 b; Chime et al., 2019a; Grundlingh, 1999; Haffejee et al., 2018; Hall et al., 2017; Herek, 1999; Kalichman et al., 2005, 2020; Malavé et al., 2014; Mugoya and Ernst, 2014; Neuman et al., 2013; Skinner and Mfecane, 2004; Wu et al., 2018). Since Goffman highlighted the problem of stigma in the 1960s from a sociological perspective (Goffman, 1963), a plethora of stigma conceptualizations and categorizations have emerged (Berner-Rodoreda et al., 2021b). Herek in his work on AIDS related stigma distinguished symbolic stigma (stigma based on ideological

assumptions towards affected groups such as homosexuals or drug users) from instrumental stigma (subjective beliefs about risks of transmission from infected individuals) and general stigma and attitudes towards PLHIV (Herek et al., 2005) see also (Berner-Rodoreda et al., 2021b). Other scholars distinguish perceived and symbolic stigma (Haffejee et al., 2018) or perceived, symbolic and enacted stigma, the latter in the sense of experiencing discrimination (Maughan-Brown and Nyblade, 2014). Social psychologists have used a framework of four types of stigma with public stigma being at the core of structural stigma (stigma inflicted and perpetuated through social inequalities, institutions and social context), stigma by association (stigma towards people closely connected to a stigmatized person) and self-stigma (anticipated, enacted or internalized stigma) (Bos et al., 2013), see also (Berner-Rodoreda et al., 2021b). The sociologist and epidemiologist Link employed a model of three types of stigma – public, internal and "symbolic interaction stigma" (foreboding the stigma which the individual may experience) (Link et al., 2015). Perceived, enacted and internalized stigma have been identified as major obstacles to HIV-program retention in various studies and settings since then (Chime et al., 2019a; Hall et al., 2017; Malavé et al., 2014) with one study underscoring higher internalized stigma for men and higher enacted stigma for women (Malavé et al., 2014). In order to clearly delineate one stigma category from another, I will use the terms "community" (public), "anticipated", "enacted" (experienced), "self-stigma" (internalized stigma) and "stigma by association" in this dissertation.

1.4. Study rationale and research objectives

By comparing men's experience of ART in Blantyre, Malawi and men's experiences of PrEP in the Northwest of Eswatini and the role of masculinity in both settings, this study aims to offer new insights and perspectives for the design of future HIV-related treatment and prevention services for men and for closing the gap to the PrEP and ART targets for 2030 for men.

For the men and ART study in Blantyre, Malawi, the research objectives were:

- To describe characteristics of ART clients and determine variables associated with VLS in male (and female) clients on ART at Umodzi Family Centre in Blantyre, who had at least one VL performed between December 2017 and June 2019. (quantitative)
- To understand enablers and challenges for VLS in male ART clients of different ages. (qualitative)
- To explore men's experiences and views of clinic-based ART services and the views of men in surrounding communities about HIV and ART services with a focus on facilitators and barriers. (qualitative)
- To explore men's ideas of an ideal treatment model. (qualitative)

The specific research objectives for the PrEP and men study in Eswatini were the following:

- To describe characteristics of PrEP clients between August 2017 and January 2019, men's reasons for taking up and declining PrEP and determine risk factors associated with an HIV infection and with initiating PrEP. (quantitative)
- To understand men's barriers and facilitators for starting and continuing PrEP and to explore men's experiences with clinic-based PrEP service delivery. (qualitative)
- To explore whether/how the views of PrEP by men directly engaged with PrEP differ from men in the community, stakeholders or service providers. (qualitative)
- To learn about men's ideas on improved PrEP services for men. (qualitative)

1.5. Country Information

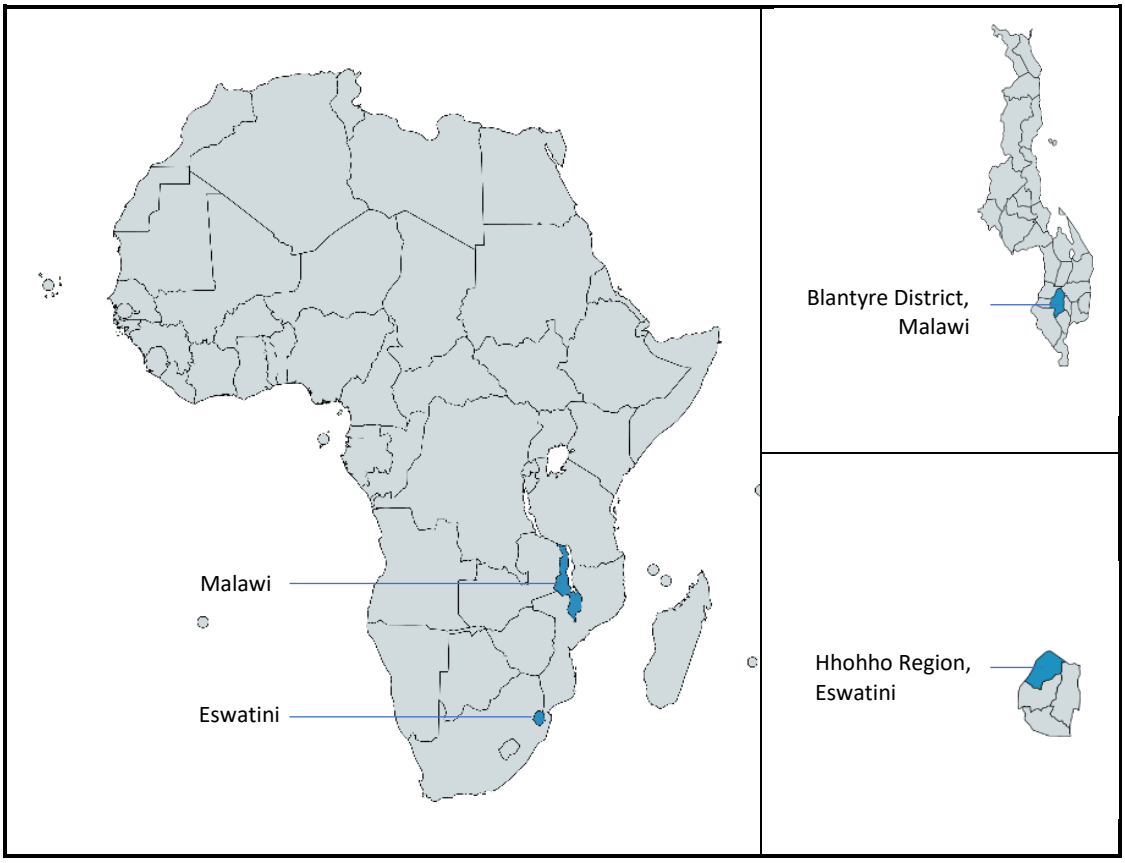

Figure 2 Map of Africa

This study draws on data from two landlocked Southern African countries: Malawi and Eswatini as shown in *figure 2*. The men and ART study in Malawi was conducted in the city and district of Blantyre in the Southern province of the country; the men and PrEP study was part of the government-led PrEP demonstration project conducted in the North-West or Hhohho region of Eswatini.

1.5.1. Malawi

The Republic of Malawi covers an area of 94,552 km^2. Its population stood at 17,563,749 in 2018 with an annual growth rate of 2.9% (National Statistical Office, 2019). More than 80% of Malawi's population live in rural areas (ibid). Lake Malawi, the country's important water and food source, is the third largest lake in Africa and ninth largest lake globally (Bootsma and Jorgensen, 2013) with shared borders to Mozambique and Tanzania. The most important economic sector is agriculture.[7]

The country became independent in 1964 with its first president, Hastings Banda, ruling the country for 30 years (Kalinga, 1998). Multi-party democracy established in the 1990s (Ihonvbere, 1997) has been supported by an independent justice system which ordered a repeat of the 2019 election due to fraud and led the way for a victory of the opposition leader in the 2020 elections.[8]

At the time of research, Malawi's national HIV prevalence stood at 9.2%; its incidence at 2.28 per 1,000 (UNAIDS, 2019). The 2015-2016 Malawi Population-based HIV Impact Assessment (Ministry of Health, Malawi, 2018) was the first and so far only household survey to present detailed HIV information including viral load data at sub-national level and progress towards the UNAIDS treatment targets (UNAIDS, 2014b). The survey is based on 11,386 households and included blood tests from 17,187 adults (87% of interviewed adults) and 6,166 children (62% of eligible children) (Ministry of Health, Malawi, 2018).

HIV prevalence varied considerably within the country with Blantyre City showing the highest prevalence at 17.7% (ibid). The highest prevalence nationally was noted for widowed persons (43.9%) followed by those who were separated (21.9%) with the lowest prevalence (2.4%) found in those never married (ibid).

Nationally, women's HIV prevalence (12.5%) was higher than men's (8.5%) (ibid). The highest prevalence among men with 22.1% was found in the age group 45-49-year-olds, the highest among women with 24.6% in the age group 40-44-year-olds (ibid, p. 48) see *figure 3*.

[7] https://www.worldbank.org/en/country/malawi/overview accessed [10.10.2020]
[8] https://www.bbc.com/news/world-africa-53207780 accessed [10.10.2020]

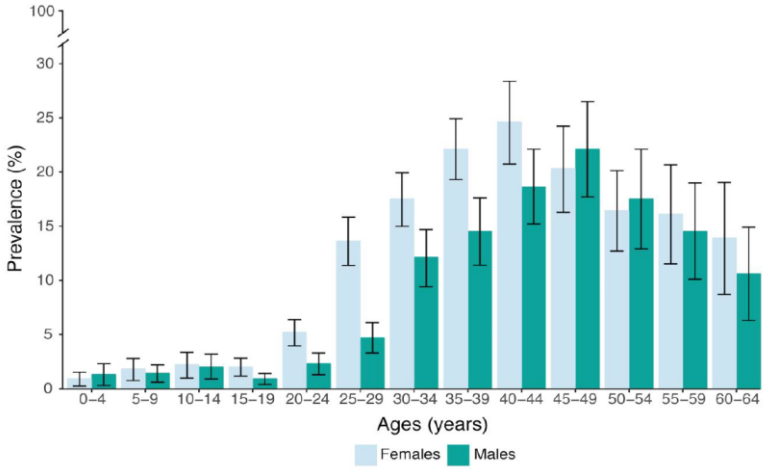

Figure 3 HIV prevalence by age and gender in Malawi according to Malawi-based HIV impact assessment 2015-2016 (Ministry of Health, Malawi, 2018, p. 49)

According to the Malawi national HIV treatment guidelines, PLHIV should start ART as soon as they have tested positive; they should also receive regular VL tests after six months and then in two-year intervals (Ministry of Health and Population, Malawi, 2018). In 2019, an addendum introduced annual VL tests and six-monthly supplies of ARVs to clients with a suppressed VL (<40 copies/ml blood or low detectable levels) who have been on ART for at least six months and experience no side-effects or opportunistic infections (Ministry of Health, Malawi, 2019). People diagnosed with HIV receive group and individual adherence counselling when they are initiated on ART (Ministry of Health and Population, Malawi, 2018). If their VL remains detectable after six months on ART, they receive additional intensive adherence counselling and are given either monthly or a three months' supply of ARVs. After three months, another viral load test is taken (Ministry of Health, Malawi, 2019). The concepts of an undetectable viral load preventing onward transmission (**U**ndetectable = **U**ntransmittable) and "Treatment as Prevention" are not mentioned in the 2019 guidelines (Ministry of Health and Population, Malawi, 2018; Ministry of Health, Malawi, 2019).

In terms of HIV testing, 65.6% of men and 81.6% of women self-reported that they had taken at least one HIV-test in their life-time (Ministry of Health, Malawi, 2018). Among men who were or had been married, over 70% had taken an HIV-test compared to less than 50% of those who were not married (ibid). Blantyre City showed the highest rate of men willing to use self-test kits (83%) (ibid).

32% of HIV-positive men (15-64 years) reported being unaware of their HIV-status – the percentage was 10% higher in urban than in rural areas (39.6% compared to 29.2%) (ibid). Knowledge of HIV-status was particularly low among younger men with 66.7% of 20-24-year-old and 51.3% of 25-29-year-old PLHIV not knowing that they were HIV-positive (ibid). Being unaware of one's positive HIV-status was particularly high in never-married men (57.7%), men with no formal education (42.1%) and in men in the lowest wealth quintile (47.7%) (ibid). Non-

linkage to care despite a known HIV-positive result was above 10% for: men in Blantyre, Lilongwe, the South-East and Central West regions; for men belonging to the lowest three wealth quintiles, for men below 35 and for men aged 45-49 and 60-64 years (ibid).

VLS also showed geographic variation. The lowest VLS in the country was recorded for Blantyre City with 59.5%, the highest for the South East (70.7%) and Central West region (70.6%) (ibid), see *figure 4*.

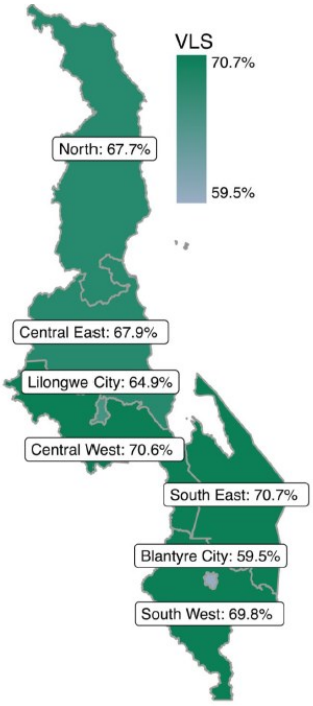

Figure 4 Viral load suppression per zone in Malawi, Ministry of Health, Malawi, 2018, p. 73)

The quarterly report for April to June 2019 showed a national VLS rate of 88% (Government of Malawi, 2019) without providing a gender breakdown; turn-around time for receiving VL-test results ranged from 15 to 40 days depending on hospitals and laboratories (ibid) and showed a more than one month's delay before the results were received in some locations including Queen Elizabeth Central Hospital in Blantyre.

The Malawi based HIV impact assessment (MPHIA) study noted gender differences in VLS: 60.9% in male compared to 73.1 % in female PLHIV aged 15-64-years (Ministry of Health, Malawi, 2018). Female PLHIV had thus achieved the "third 90", whereas men lagged behind. Men under 34 years had a VLS of less than 50% (ibid), see *figure 5*.

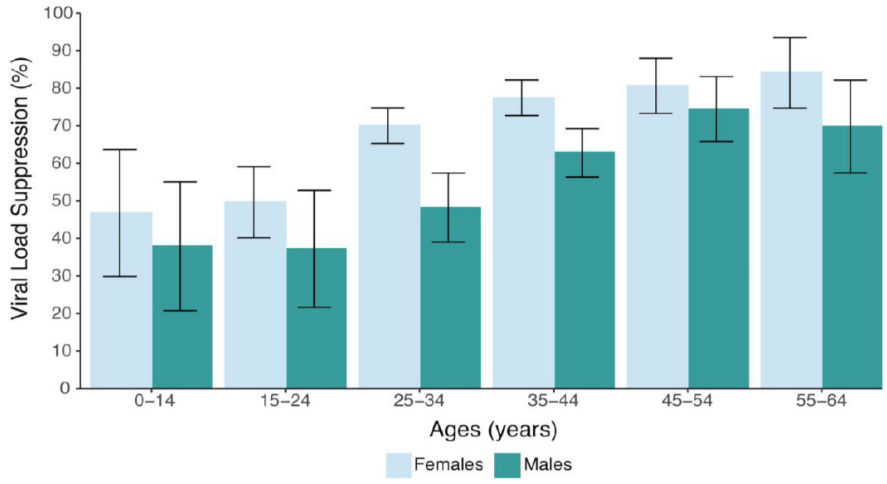

Figure 5 Proportion of VLS in men and women living with HIV in Malawi (Ministry of Health, Malawi, 2018, p. 72)

Never-married men showed a VLS of 42.2%, divorced or separated men a VLS of 59.9% and married men a VLS of 62.2% indicating never married men's greater difficulties to suppress their VL. Men in the lowest/second lowest health quintile had a VLS of 51.7% and 55.9% respectively whereas the richer health quintiles had a VLS between 62 and 68% showing an economic dimension to VLS (ibid). In summary, MPHIA describes poor testing and low VLS in young men <30 years and in never-married men and a higher HIV prevalence in older men with Blantyre showing the highest HIV prevalence and the lowest VLS nationally.

A 2008/2009 survey found internalized HIV stigma in Malawi to be close to 10% and interpersonal discrimination at 43% (Neuman et al., 2013). The MPHIA study of 2015/2016 records 11% of the 15-64-year-old population reporting discriminatory attitudes towards PLHIV, with a rural/urban divide (11.9 vs. 7.4%) and Blantyre showing a "low" level of discriminatory attitudes (6%); nationally, very young (15-19-year-olds) and old citizens (60-64-year-olds) displayed higher levels of stigmatizing attitudes (16.4% and 13.4% respectively) as did those with no education (18.9%) (Ministry of Health, Malawi, 2018).

1.5.2. Eswatini

In 2018, 50 years after independence, the Kingdom of Swaziland was renamed "the Kingdom of eSwatini" by King Mswati III[9]. According to the 2017 population and housing census, the Southern African country which covers an area of 17,349.98 km^2 has a population of 1,093,238. 76.2% of its population live rurally; population density stands at 63 persons per km^2 (Central Statistical Office, 2019). 70% of the population practice small-scale farming (World Bank, 2011).

[9] https://www.bbc.com/news/world-africa-43821512 accessed [10.10.2020].

Eswatini recognizes a dual legal system of customary law and Dutch-Roman common law with customary law being more readily applied in rural areas (Human Rights Watch, 2018, Van Hook and Ngwenya, 1996). Polygamous marriages can be sealed under customary law (Van Hook and Ngwenya, 1996) but are prohibited under common civil law (Amnesty International, 2010). Polygamy, practiced by King Mswati III (Criado, E., 2013) is often depicted as a core part of Swazi culture and tradition (Tobias, 2001).

With an HIV prevalence of 27%, Eswatini ranks highest in the world (UNAIDS, 2021a). Prevalence among men (20.4%) shows high variation between age groups: relatively low prevalence is found in men <24 years; the highest prevalence among men is observed in the 35-54 age groups peaking at 45-49 years, see *figure 6* (Ministry of Health, 2019).

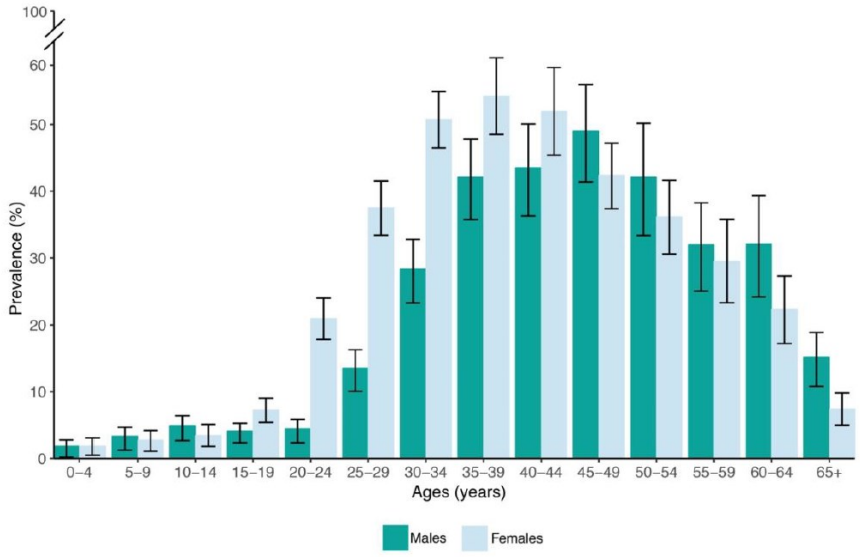

Figure 6 HIV prevalence by age and sex in Eswatini, Swaziland HIV incidence measurement survey 2 (Ministry of Health, 2019, p. 54)

In-country variation of HIV prevalence ranges from 25.7% in the Hhohho region in the North West to 29.4% in Lubombo in the east of the country (Ministry of Health, 2019), see *figure 7.*

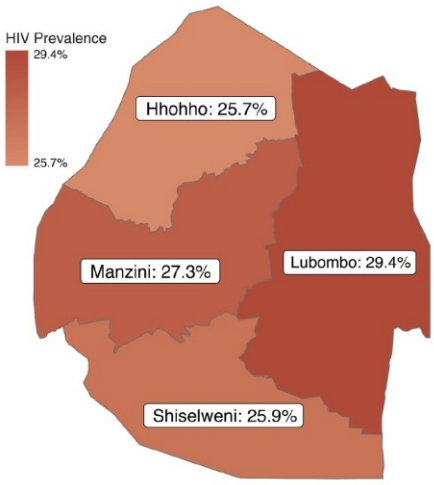

Figure 7 HIV prevalence by region in 15 year+ population in Eswatini (Ministry of Health, 2019, p. 55)

The first Swaziland HIV Incidence Measurement Survey (SHIMS), conducted in 2011 with a representative sample of 11,232 participants tested twice in a period of six months, showed the highest HIV incidence in men of 3.1 per 100 person-years in the age group 30-34 years (Justman et al., 2017), see also (Berner-Rodoreda et al., 2020c). For men, having an HIV-positive partner or not knowing the partner's HIV status over the last six-months significantly increased the risk of seroconversion (Justman et al., 2017). SHIMS 2, the 2nd Swaziland HIV Incidence Measurement Survey conducted in 2016 and 2017 with 12,857 adults, found the highest incidence in men in the 25-34 year age-group at 1.5% thus showing a significantly lower incidence (Ministry of Health, 2019).

According to SHIMS 2, life-time testing stood at 81.9% in males with higher percentages in older men (15-19-year-olds: 61.9%; 20-24-year-olds: 77.7%, 45-49-year-olds: 91%), ever testing of 90% and above were reached in married and divorced men and men in the age groups 30-34 and 40-49 years; in the age group 20-34 years, more than 50% of men tested in the preceding 12 months, in all other age groups the percentage was below 50% (ibid). Awareness of a positive HIV-status was lower in men than in women (77.5% vs. 88.6%) and particularly low (<40%) in the age group 20-29-year-olds (ibid).

Condom use at last sexual act among men who reported to have had sex with a non-marital partner or a partner they were not living with stood at 75% for non-married men and over 80% for men with tertiary education, men with the highest wealth quintile and for the age group 15-19-year-olds; the lowest condom use at last sexual act with a non-marital partner was observed in the age group 55-59-year-olds (ibid).

The WHO introduced a "Treat All" policy in 2016 (World Health Organization, 2016) which was implemented in Eswatini in the same year (Horter et al., 2019; Ministry of Health, 2019). Eswatini has made great strides in meeting the 90/90/90 targets. Already in 2016/2017, SHIMS 2 found 80.1% of HIV-positive men knowing their HIV-status, 90.2% of HIV-positive men being on ART, and 90.5% of male PLHIV on ART suppressing their VL (Ministry of Health, 2019), thus reaching two of the three 90s. According to the latest UNAIDS report, Eswatini has surpassed all three 90s (UNAIDS, 2021).

Eswatini aims to end the AIDS epidemic in 2022 by implementing the three zeros: zero new infections, zero stigma and discrimination and zero AIDS related deaths (Mabuza and Dlamini, 2017). In order to do so, it has also increased efforts for prevention alongside rolling out treatment and decided to implement a demonstration project "to assess the operationalization of PrEP in Swaziland as an additional service within HIV combination prevention among the population and individuals at high risk of HIV infection" (Swaziland National Aids Programme, 2016, p. 3).

In summary, SHIMS 2 shows the highest HIV prevalence for men in the age group 45-49-year-olds and the highest HIV male incidence among 25-34-year-olds, an age group where many men are not aware of their status and not on ART. Testing in the preceding 12 months and condom use were, however, more common in younger than in older men.

1.5.3. Comparison of national indicators for Malawi and Eswatini

As Southern African countries, Malawi and Eswatini show commonalities and differences, see *table 2*. Where possible, data are presented for the time of research, i.e. 2018 and 2019.

Table 2 Comparison of Malawi and Eswatini regarding human development, health and gender

Malawi	Eswatini
Population	
Overall population: 17,563,749[a]	Overall population: 1 093 238[b]
Male population: 8,521,460[a]	Male population: 531,111[b]
Median Age: 17[a]	Median age: 21.7[b]
Rural population: 14,706,108[a]	Rural population: 833,472[b]
Human Development Index (HDI)[c]	
HDI rank: 174/189	HDI rank: 139/189
HDI for men: 0,500	HDI for men: 0,611
Low-income economy[d]	Lower middle-income economy[d]
Income share by poorest 40% (2010 -2018): 16.2%	Income share by poorest 40% (2010 -2018): 10.5%
Income share by richest 10% (2010 -2018): 38.1%	Income share by richest 10% (2010 -2018): 42.7%
Gini co-efficient (2010 -2018): 44.7	Gini co-efficient (2010 -2018): 54.6
Life expectancy for males at birth: 61.1	Life expectancy for males at birth: 56
Mean years of schooling for males: 5.2	Mean years of schooling for males: 7.2
Health Indicators[e]	
Neonatal mortality rate: 20/1 000 live births	Neonatal mortality rate: 18/1 000 live births
Under 5 mortality rate: 42/1 000 live births	Under 5 mortality rate: 49/1 000 live births
Maternal mortality ratio (2017): 349/100 000 live births	Maternal mortality ratio (2017): 437/100 000 live births
Proportion of births attended by skilled health personnel (2011-2020): 90%	Proportion of births attended by skilled health personnel (2011-2020): 88%
Tuberculosis (TB) incidence: 146/100 000	TB incidence: 363/100 000
Density of medical doctors (2011-2019): 0.4/10 000	Density of medical doctors (2011-2019): 1.0/10 000
Density of nursing and midwifery personnel (2010-2019): 4.4/10 000	Density of nursing and midwifery personnel (2010-2018): 41.4/10 000
HIV Data with progress towards the UNAIDS 90s[f]	
Three 90s in % in men (2019): 86, 78, 93 (overall viral load suppression in male PLHIV: 62)[g]	Three 90s in % in men (2019): 97, 93, 97 (overall viral load suppression in male PLHIV: 87)[g]
National Data (2015.2016): 71.7, 88.7, 89.8 (overall VLS in males: 60.9)[h]	National Data (2016.2017): 80.1, 90.2, 90.5 (overall VLS in males: 67.6)[i]
HIV incidence: 0.37[h]	HIV incidence: 1.36[i]
Prevalence nationally: 9%[h]	Prevalence nationally: 27%[i]
Prevalence in Blantyre district: 18%[h]	Prevalence in Hhohho region: 25.7%[i]
Gender Parity[j]	
Score: 0.662[j] Gender Ranking: 112/149 countries[j]	Score: 0.694[j] Gender Ranking: 80/149 countries[j]

[a] (National Statistical Office, 2019) [b] (Central Statistical Office, 2019) [c] Data for 2019 unless indicated otherwise; Gini co-efficient measures inequality of income with 0 = absolute equality and 100 = absolute inequality (UNDP, 2020) [d] World Bank data, https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups accessed [17.11.2020] [e] data for 2019 unless indicated otherwise (World Health Organization, 2021) [f] 1st 90: awareness of being HIV-positive, 2nd 90: PLHIV on ART, 3rd 90: VLS of PLHIV on ART (UNAIDS, 2014b): [g] (UNAIDS, 2020): data for 2019 [h] MPHIA data 2015.2016 (Ministry of Health, Malawi, 2018) [i] (Ministry of Health, 2019) [j] Gender parity score between 0 = imparity and 1 = parity. (World Economic Forum, 2018)

Despite a differing population and country size and economic performance, the income-share-indicators display a stark inequality in terms of wealth distribution in both of these predominantly rural countries. The lower density of health personnel and midwives in Malawi (the latter being 1/10 of Eswatini's density) does not translate into worse health outcomes; in fact, the health outcomes are similar to those in Eswatini or even better (lower maternal death ratio, lower under 5 mortality rate, slightly higher percentage of birth attendance by skilled health personnel as well as lower TB incidence and higher male life expectancy).

With an HIV prevalence of 18% in the Blantyre district of Malawi and 25.7% in the Hhohho region of Eswatini (see *table 2*), the HIV prevalence of both study settings is among the highest in the world (UNAIDS, 2021a) and provides the background for the comparison of men's experience with ART (Blantyre, Malawi) and PrEP (Hhohho, Eswatini). While Eswatini managed to reach the three 90s before Malawi (UNAIDS, 2020) and made progress in lowering its incidence, it still has one of the highest HIV incidence rates worldwide (UNAIDS, 2019).

The 2018 gender gap report presented both Malawi and Eswatini in need of more gender equity; Eswatini had closed 69% of the gender gap, Malawi 66%. Both countries ranked 1 (close to equality) in the sub-index for health which measures sex ratio at birth and life expectancy.

Further socio-cultural differences manifest themselves in the area of kinship: Swazi society is patrilineal, i.e. inheritance follows male descent lines. Malawi, by contrast, has matrilineal and patrilineal ethnic groups. In matrilineal groups in Malawi's Southern Region, land rights are conferred through women and families tend to live uxorilocally (at the residence of the wife) (Johnson, 2018b); women's access to land makes them more independent and less susceptible to poverty when the husband dies (Johnson, 2018b; Tschirhart et al., 2015). Madise refers to a joint Ngoni/Nguni ancestry of Malawi and Eswatini (2015) showing migration and cultural adaptation as the Nguni moved north from South Africa and Eswatini. While some Ngoni groups in Malawi took on the Chewa matrilineal form of descent, others stayed patrilineal (Madise, 2015).

Despite differences in a number of spheres, the population of both countries consists almost exclusively of Bantu-speaking peoples with some sharing close ethnic ties (ibid). Both Southern African settings show a high HIV prevalence, a similar performance on key health indicators, a similar gender parity score and sub-gender indices for health.

METHODS AND MATERIALS

Please note: the author drew on and published partial aspects of the methods chapter in these articles:

Berner-Rodoreda, A., Bärnighausen, T., Eyal, N., Sarker, M., Hossain, P., Leshabari, M., Metta, E., Mmbaga, E., Wikler, D., McMahon, S.A., 2021. **"Thought provoking", "interactive", and "more like a peer talk": Testing the deliberative interview style in Germany**. SSM - Qualitative Research in Health 1, Qualitative Research in Health 1, 100007, doi: 10.1016/j.ssmqr.2021.100007.

Berner-Rodoreda, A., Bärnighausen, T., Kennedy, C., Brinkmann, S., Sarker, M., Wikler, D., Eyal, N., McMahon, S.A., 2020. **From Doxastic to Epistemic: A Typology and Critique of Qualitative Interview Styles**. Qualitative Inquiry *26*, 291–305, doi: 10.1177/1077800418810724.

Berner-Rodoreda, A., Geldsetzer, P., Bärnighausen, K., Hettema, A., Bärnighausen, T., Matse, S., McMahon, S.A., 2020. **"It's hard for us men to go to the clinic. We naturally have a fear of hospitals." Men's risk perceptions, experiences and program preferences for PrEP: A mixed methods study in Eswatini.** PLOS ONE *15*, e0237427, doi: 10.1371/journal.pone.0237427.

Berner-Rodoreda, A., Ngwira, E., Alhassan, Y., Chione, B., Dambe, R., Bärnighausen, T., Phiri, S., Taegtmeyer, M., Neuhann, F., 2021. **"Deadly", "fierce", "shameful": notions of antiretroviral therapy, stigma and masculinities intersecting men's life-course in Blantyre, Malawi**. BMC Public Health *21*, 2247, doi: 10.1186/s12889-021-12314-2.

In this chapter, I will present the methods and materials used for data collection and analysis for the two multi-methods studies. Some communalities and differences should be noted: I planned and conducted the Malawi study on men and ART in collaboration with the Lighthouse Trust in Blantyre and thus will provide first-hand information on fieldwork procedures. The men and PrEP study, by contrast, was nested within a general population-based demonstration project (Geldsetzer et al., 2020) that had already commenced a year prior to my matriculation for the doctoral degree and could not be extended to allow for additional male-specific data collection on my part. I therefore worked with data collected by an already established research team which was open to include more questions on men in interview guides, particularly for the final round of interviews with local leaders.

The quantitative components of both studies had a cross-sectional design. In terms of providing robust statistical results, previous studies have shown that modified log-Poisson regressions were "generally preferred to alternative approaches" (Gallis and Turner, 2019, p. 9) and contained less bias compared to log-binomial regressions (Chen et al., 2018). Furthermore, the resulting risk ratios are easier to interpret than odds ratios (Knol et al., 2012) as odds ratios tend to overstate the effect when interpreted as risk ratios and are difficult to understand when they refer to values below 1 (Davies et al., 1998). I therefore used modified Poisson regressions for both studies.

A thematic approach (Braun and Clarke, 2019, 2014, 2006) drawing on constructivist grounded theory (Charmaz, 2014; Tweed and Charmaz, 2012) was used to analyze the data for the qualitative study components. While the initial coding was informed by the interview guide in both studies, inductive coding complemented deductive coding and became the

primary way of coding leading to multiple coding rounds as new codes were added and applied to the data set. A key component of all qualitative studies is an iterative approach throughout data collection, analysis and writing, going back and forth between data and emerging themes (Creswell and Creswell, 2018, p. 181). Writing memos and observations was already started in the field while conducting interviews and in debriefing rounds and continued with analyzing the data. The analysis approach has been visualized in *figure 8*.

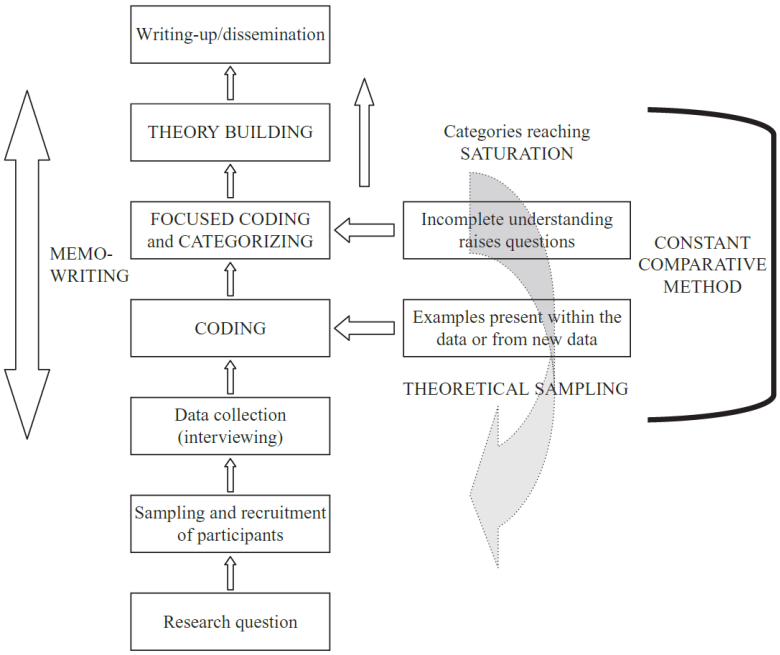

Figure 8 Visualization of analytical approach (Tweed and Charmaz, 2012, p. 11)

Through different perspectives the research question is explored until theoretical saturation has been reached (Charmaz, 2014); for the Eswatini PrEP study this also included collecting additional data from local leaders to gain more insights into the way men perceive PrEP for themselves and for the community; in both studies, daily reflections in the study team during data collection led to further probing; e.g., in Malawi, men's understanding of the term viral load and the time of taking the pills was further explored to better understand men's views of adherence. Grounded theory like other qualitative approaches feeds off a comparison of "variations, similarities and differences in data" (Hallberg, 2006, p. 143). In both studies, in-group and across-group variations were explored. Data can also include documents (Charmaz, 2014; Creswell and Creswell, 2018) which can be contrasted to other data collected in the field (Charmaz, 2014; Dalglish et al., 2020). Relevant documents directly and indirectly referred to by participants were included in the analysis for triangulation purposes, see *figures 9 and 10*. "Comparative analysis" for generating theories (Glaser and Strauss, 2006) refers to contrasting the findings with other studies, and the PrEP and ART studies lent themselves for exploring and comparing men's experience of taking antiretroviral drugs for prevention or treatment in Southern African facility-based settings. While an overview of literature had taken place

before conducting or analyzing the studies, drawing on grounded theory (Charmaz, 2014; Glaser and Strauss, 2006), the data was studied on its own merits first before consulting the literature on PrEP and ART in detail in order not to be influenced to "look" for particular themes in the data but rather to let the data speak for itself and to be able to focus the literature review on salient issues identified in the data and with which the data could be compared and contrasted (Charmaz, 2014).

Since men's anticipations and experiences involved and were informed by the personal, interpersonal, service-delivery and society levels, I chose the socio-ecological model (SEM) (Glanz and Rimer, 2005) as the underlying theoretical framework. SEM also enabled the incorporation of (structural) enablers and barriers and could be applied to both studies thus making a comparison easier than working with a model which only fitted one of the studies. Data was arranged according to these categories.

I will present methods and materials for the men and ART study in 2.1., for the men and PrEP study in 2.2. and will close the methods section by providing personal reflections on embarking on this comparative study, see 2.3..

2.1. Malawi Men and ART Study

2.1.1. Study setting

The district of Blantyre with the highest national HIV prevalence (17.7%) and lowest national viral load suppression rate (59.5%) (Ministry of Health, Malawi, 2018) was chosen as the study setting (Berner-Rodoreda et al., 2021b). Blantyre offers predominantly public health services at primary, secondary and tertiary levels, with Queen Elizabeth Central Hospital (QECH), a tertiary referral and teaching hospital as the biggest service provider for the Southern region (Berner-Rodoreda et al., 2021b, Maoulidi, 2013). Private health care is offered through church- and non-governmental health care providers and for profit providers (Maoulidi, 2013). The study was conducted in the urban, semi-urban and rural areas of Blantyre district but primarily at the Umodzi Family Centre (UFC), a Lighthouse Trust operated ART facility affiliated to QECH (Berner-Rodoreda et al., 2021b).

UFC located at Ginnery Corner in Blantyre opened in December 2017 as a new clinic geographically separated from QECH out of whose HIV section it had emerged. UFC provides comprehensive and integrated HIV care services including TB, sexual and reproductive health (STI treatment, family planning, non-communicable disease screening and management). On 30 June 2019, UFC provided primary care and HIV referral services to 13,198 clients of whom 41% were male. UFC had a staff contingent of 128 in 2019/2020, among them six clinicians, ten nurses and 52 diagnostic and retention assistants. The Centre's "Back to Care" unit was set up to liaise between clinic and clients in order to follow up clients before they become

defaulters (Tabatabai et al., 2014). The unit's program staff traced clients by phone or through home visits, if clients had missed appointments in the previous two weeks. UFC also offered teens' clubs for HIV-positive children from 10-19 years. The children/youth were divided into six groups of 90 kids. Each group was invited to come on a different Saturday. The groups started in the morning with ice-breakers and games, were taught about various aspects of ART, could collect their ARVs and see a doctor in a youth-friendly environment.

2.1.2. Study design

This was a multi/mixed methods study drawing on quantitative and qualitative data (in-depth interviews, observations and HIV policy documents).

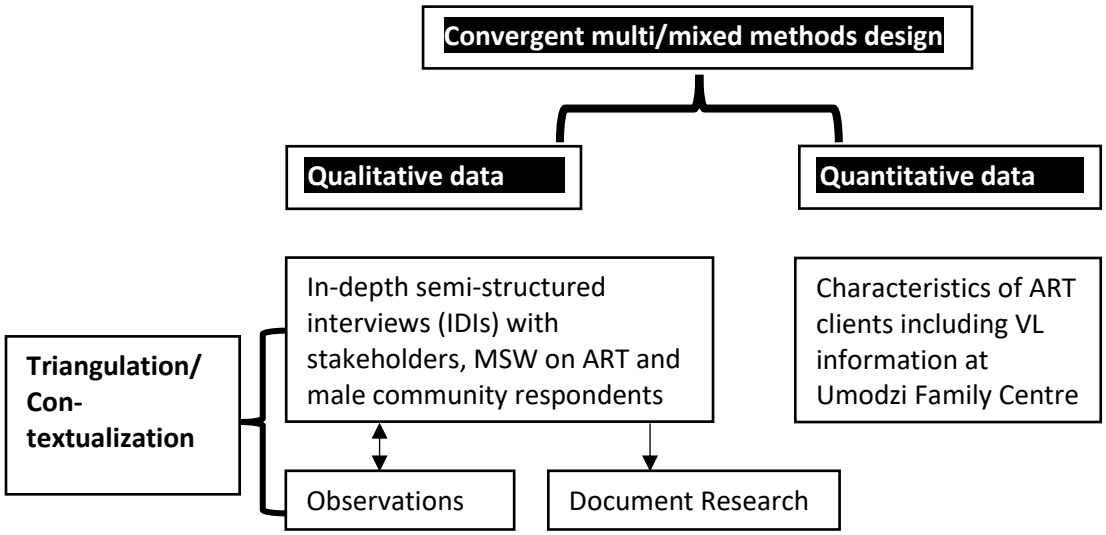

Figure 9 Study Design for Men and ART study, Malawi

The study design originally chosen was a sequential mixed methods explanatory study (Creswell and Creswell, 2018), in which qualitative data sheds light on quantitative findings. Due to delays in obtaining quantitative data from UFC because of the need to merge separate hospital laboratory client systems which only certain staff at UFC could access, the study design was altered to a convergent design, i.e. separate collection and analysis of qualitative and quantitative data with a comparison of results (Creswell and Creswell, 2018).

Quantitative data from the Laboratory Information Management System (LIMS) consisted of the characteristics of ART clients at UFC in the time-frame December 2017 to June 2019 with the outcome variable VLS, see 2.1.3. Qualitative data consisted of in-depth semi-structured interviews (IDIs), observations, informal conversations and document research. Based on previous research on interview styles which included a direct comparison of conducting deliberative and doxastic-style interviews (Berner-Rodoreda et al., 2021a, 2020a), I chose a doxastic style of interviewing for the Malawi study, as the aim was to understand respondents' views and experiences of ART without direct engagement of the interviewer

(Berner-Rodoreda et al., 2021a, 2020a), which may have influenced respondents' answers. Information gleaned from IDIs informed observations at UFC and other clinics including the state, attendance and the operation of local clinics. Conversely, observations, e.g. the waiting period for clients led to clarifying procedures with health staff and probing in IDIs. Documents and policies which respondents referred or alluded to such as Test and Treat, the frequency of VL-tests, multi-months drug dispensing, alcohol and ART and the anti-discrimination act further triangulated and contextualized the interviews by providing a better understanding of how ART services operated at UFC and in the national context. The following policies, acts or operational guidelines were consulted: Consolidated Guidelines on the Use of Antiretroviral Drugs for Treating and Preventing HIV Infection: Recommendations for a Public Health Approach (World Health Organization, 2016), Malawi Guidelines for Clinical Management of HIV in Children and Adults (Ministry of Health and Population, Malawi, 2018; Ministry of Health, Malawi, 2016) with its 2019 Policy Update: Addendum to the 4th Edition of the Malawi Integrated Guidelines and Standard Operating Procedures for Clinical HIV Services (Ministry of Health, Malawi, 2019); and the HIV Prevention and Management Act (Government of Malawi, 2018). The findings will be weaved into analyzing results at societal level (3.1.3.6).

An exploratory design-thinking component (Bazzano et al., 2017; Hanington and Martin, 2012) had been planned as a second data collection phase. Based on respondents' ideas for improving ART services for men emerging from IDIs, I had designed focus-group discussions (FGDs) in collaboration with Lighthouse Trust staff for male community respondents to ideate and prototype male-friendly service delivery models. In additional deliberative workshops (Berner-Rodoreda et al., 2020a; Scottish Government, 2009), various respondent groups would have been asked to make these models implementable by interrogating and further adapting prototypes. Because of COVID-19 travel restrictions in 2020 and 2021, these additional research components could not form part of the dissertation.

2.1.3. Quantitative sample – data preparation and analysis

UFC enters the specific client information required by the Government into their electronic data management system, see appendix 1. Information is updated regularly on each visit. The sample includes all male and female UFC clients aged 18 years and older who were on ART during the period of 1 December 2017 (when UFC took over the HIV services from QECH) and 30 June 2019 (before conducting interviews in the second half of 2019). The main analysis focuses on clients with a valid VL-result in this time period. Clients who stopped treatment or became deceased but had a VL-result in the study period were included in the sample. The following variables could be extracted from the electronic data management system: sex, HIV test date, ART initiation date, age at initiation, WHO staging at initiation, days on ART, regimen

line, regimen, date of last blood draw for VL test, VL results, missed appointments, and distance to facility. Whether or not the client had a guardian (treatment supporter) was also captured. Furthermore, the data included information on the retention outcome and the respective age at which the event happened. Relationship status, disclosure and education could not be included as these variables were not part of the national reporting requirements for health centers as stipulated by the Malawi Government and therefore not entered into the electronic data base.

2.1.3.1. Data preparation

The data for this cross-sectional study was composed of all variables listed under 2.1.3.. Raw data included outcome dates from October 2002 to June 2021 with ART initiation dates ranging from August 1989 to June 2019. For the analysis, the sample was restricted to those with a VL-test result between 1.12.2017 and 30.06.2019. The bleed date was taken as a proxy as this was the date on which the VL result was based.

2.1.3.2. Dependent variable

The dependent or outcome variable of interest for the analysis was viral load suppression. The binary variable "suppressed" was generated indicating 1 for individuals with a VL of < 1,000 copies/ml blood and 0 for those with a VL of >= 1,000 copies/ml blood.

2.1.3.3. Independent variables

Binary variables included sex, defined as male or female, the presence or absence of a treatment guardian with 0 for "no" and 1 for "yes" and distance to the facility in terms of less than 10km or 10km and more. The categorical variable "regimen at last visit" contained 14 adult regimens – regimen 1-6 and 13-15 referred to 1st line, regimens 8-11 to 2nd line regimens; in the sample of interest, no clients were recorded to be on regimen 12, the 3rd line regimen, yet the UFC category of "non-standard treatment" which was not closely defined may have included clients on 3rd line ART. WHO staging at ART initiation was categorized according to the four clinical WHO stages of an HIV infection (World Health Organization, 2007), into which health personnel had grouped the client: 1 (asymptomatic), 2 (e.g., moderate unexplained weight loss (<10% of body weight), recurrent respiratory tract infections, herpes zoster, recurrent oral ulceration, fungal nail infections), 3 (e.g., unexplained severe weight loss, anemia, chronic diarrhea, persistent fever, pulmonary tuberculosis, severe bacterial infections), 4 (e.g., HIV wasting syndrome, pneumonia, chronic herpes simplex infection, candidiasis, extrapulmonary tuberculosis, kaposi sarcoma, central nervous system toxoplasmosis, meningitis). Retention outcomes on 30 June 2019 were categorized as "alive" (i.e. still on treatment at UFC), "stopped ART", "transferred out", "defaulted" and "dead".

Continuous variables were "years on ART", "total missed appointments", and "initiation delay". The variable "years on ART" was calculated by subtracting the initiation date from the bleed date to obtain the days a client was on ART at the day of blood drawn for the VL test. To obtain years on ART, this difference was divided by 365 and rounded to obtain an integer. Years on ART ranged from 0 to 19 with an upper bound of 15 for clients at or above 15 years on ART. Total missed appointments ranged from 0 to 35. For the analysis, the upper bound was set at 10 missed appointments for clients with 10 or more missed appointments. In order to calculate the continuous variable "initiation delay", the HIV test date was subtracted from the initiation date and the days divided by 12 to obtain the period between HIV testing and initiation in months. The upper bound for initiation delay was set at 12 months for those with a delay between a positive HIV test result and initiation of 1 year and more.

2.1.3.4. Analysis of Quantitative Data

I will present descriptive statistics showing the distribution of individual-level characteristics in the entire sample as well as among those with a suppressed VL in *3.1.1, table 7*. Descriptive statistics results are presented for the entire sample and for the subset of men only.

To estimate the association between viral load suppression and individual-level characteristics, I performed uni- and multivariable modified Poisson regressions using the entire sample as well as the male sub-sample only (see the introductory paragraph of chapter 2 for the rationale of using modified Poisson regressions). Robust standard errors were calculated.

Multivariable modified Poisson regression models included the independent variables gender, age at VL test, regimen line, WHO stage at initiation, years on ART, total number of missed appointments, having a guardian and distance to facility. The quantitative analysis was performed using Stata 15.1.

2.1.4. Qualitative research - data collection, sampling and analysis

For the qualitative component, potential research assistants with previous experience in qualitative field methods were invited to take part in the four-day research training in August 2019 after a selection had been made by the Monitoring + Evaluation (M+E) manager of the Lighthouse Trust and myself based on a screening of CVs of potential candidates. I developed a training schedule for the research assistants and trained three research assistants, two women and one man, on qualitative field methods, ethics requirements and the men and ART study between August 20 and August 23rd 2019, see appendix 2. The entire field research team successfully completed the FHI 360 course on research ethics[10]. During the training, research

[10] https://www.fhi360.org/sites/all/libraries/webpages/fhi-retc2/index.html accessed [07.08.2019].

assistants piloted the interview guides (see appendices 3-5), which had been drawn up by myself and agreed upon by the research team. The initial piloting of the interview guides was conducted among the team and then with male clients at UFC. The research team noticed some inconsistencies in the wording of the information sheets in English and Chichewa during the training session. In order not to cause confusion, a correction was submitted as an amendment.

2.1.4.1. Sampling

For the qualitative research, purposive sampling was used to ensure that both men with suppressed (below 1,000 copies/ml blood) and unsuppressed VLs (above 1,000 copies/ml blood) were interviewed (Berner-Rodoreda et al., 2021b) and that the sample included young, middle-aged and older men. The piloting of interviews during the training of research assistants at UFC revealed that it was difficult to get enough range in terms of viral load suppression and age if male clients who consented to be interviewed were approached ad hoc in the waiting area. After drawing up lists of men who had received a recent (up to 6 months old) viral load test and separating those with suppressed und unsuppressed VLs, a random selection of men with sufficient contact details was made from both lists for stratified purposive sampling according to VL and age (Patton, 1990), see also (Berner-Rodoreda et al., 2021b). The list of potential male client interviewees covered the age group 18 to 50+ years and was arranged according to 5-year age groups. 46 men with unsuppressed viral loads and 36 men with suppressed viral loads were selected from which potential interviewees could be drawn. These lists were shared with the Back to Care Unit at UFC prior to data collection. The unit was asked to assist with contacting potential interviewees from each age-group, re-check viral load data and set up interview dates. Actual interviews were based on availability of male clients within the set parameters, yet efforts were made to include a quarter of potential male interviewees below the age of 24 and half of the male interviewees below the age of 34, as national data had shown poorer VLS in younger men.

I also used purposive sampling for identifying stakeholders (Berner-Rodoreda et al., 2021b). Drawing up a list of 20 potential stakeholders (academics, health personnel at Lighthouse Trust and at other health facilities, members of the District Health Office governing structure, NGO and church-based implementers) based on local research of key players and the recommendations by Lighthouse Trust staff, local and international NGOs, I contacted potential interviewees by phone or paid a visit to their office to ensure that they had sufficient experience with male clients and were willing to participate in the study. If they fulfilled the criteria and were interested in participating in the study, an interview appointment was arranged.

A presentation of the planned study to the District Health Office (DHO) committee in September 2019 facilitated interviews in surrounding communities through a DHO recommendation letter. One semi-urban and one rural community were agreed upon with the Limbe Health Office for conducting community interviews. In addition, I employed snowball sampling (Patton, 1990); the recommendation by a stakeholder to contact a church minister in a semi-urban area of Blantyre resulted in another four community interviews with men. Contacting a Youth Centre in Blantyre whose director agreed that male clients at the sports facilities could be interviewed, if they consented, enabled the interviewing of men in an urban setting.

2.1.4.2. Data collection

Qualitative data collection started on November 11th with a day of re-training. Two research assistants (a middle-aged man with college education and a female university student) were selected to be part of the research team based on their experience, skills and performance during the initial training (Berner-Rodoreda et al., 2021b). Interviews with male clients were set up by the Back to Care Unit as they had the closest contact to clients. After the first week of interviews, the Back to Care Unit had to cease assistance because of their own heavy workload. Since many interviewees could not be contacted due to defunct client phone numbers, the team interviewed clients ad hoc at the clinic. Two clients could however not be identified through clinic records; the interviews thus may not have met the inclusion criteria for the study and were precautiously disregarded. As the assistance of the Back to Care unit was crucial for conducting the study, a budget shift enabled the paying of overtime to the unit for contacting clients and setting up interviews.

74 semi-structured in-depth interviews (IDIs) were conducted by the research team; discounting the two interviews mentioned above for which registration and viral load data could not be confirmed at UFC, the research team included 72 interviews in the study, see *table 3*. Interviewing was stopped when saturation was reached and no new information was gleaned (Morse, 2000); data collection on IDIs was completed on December 6th, 2019. IDIs usually lasted for 30 minutes to an hour; interviews with men on ART and men in the communities were mostly conducted in Chichewa. Most stakeholder interviews lasted for an hour and most were conducted in English. All interviews took place in a convenient and quiet location: stakeholder interviews were often conducted in the office of the stakeholder or a quiet meeting place. Interviews with men in the community took place in the communities or in the compound of the sports center, and interviews with male clients were conducted in a quiet place within the compound of the clinic. At two stakeholder interviews, a colleague of

the participant was present but remained quiet. Prior to the interview, the interviewer would introduce him-/herself and the study and ask for informed consent, see also 2.1.5..

As the first interviews were conducted it emerged that those who were supposed to be having high viral loads talked about being consistent in taking ARVs. After confirming their last viral load taken, five interviews had to be shifted from the list of unsuppressed to the list of suppressed VLs. As this happened early on in the data collection process, the interviewing of male clients could be adjusted. The last VL status was double-checked for all men on ART interviewed. No further changes had to be made.

Daily debriefs within the research team were scheduled at the end of each interview day to update each other on insights gained and to discuss what areas may need further probing (Berner-Rodoreda et al., 2021b; McMahon and Winch, 2018). With many men stating that they took the pills consistently despite their high VL, the research team decided to probe more on the time of taking ART, on problems with swallowing the tablets (as one man had stated that the size of the pills was problematic), on side-effects with regard to sexual performance (as a stakeholder had highlighted this area) and on alcohol and travel as these also emerged in some interviews as factors for being inconsistent with ART. Since some men only had a vague concept of VL, the research team decided to ask more pointedly about men's understanding of VL and what this meant for them in terms of ART. Adapting questions to the interview situation is a standard approach in qualitative research (Rubin and Rubin, 2012).

2.1.4.3 Respondent characteristics

Table 3 provides social characteristics of the 72 respondents interviewed. Unlike the quantitative sample, respondent characteristics of interviewees are not a result but provide background for the interviews and are therefore presented in the methods section.

Table 3 Malawi respondent characteristics

Characteristics	**Men**	**Women**
Respondents	68	4
Respondent Groups		
Community men	17	
Men with suppressed VL	16	
Men with unsuppressed VL	23	
Stakeholders	12	4
Age		
18-29	24	2
30-39	17	0
40-49	21	1
50+	6	1
Education		
No schooling	1	
Primary Education	11	
Secondary Education	33	
Tertiary Education	23	4

Characteristics	Men	Women
Relationship Status and Living Arrangements[+]		
Single	20	
Partner/married	36	
Living together	29	
Not living together	27	
Professional Background[¥]		
Academic/researcher	1	1
NGO implementer	4	
Church-based implementer	2	
Health personnel	5	3

[+]data available for men in community and men on ART, n=56
[¥]data available for stakeholders, n=16

38% of male respondents on ART and 41% of male community respondents were below the age of 29. The majority of men had secondary-level education; among stakeholders, the majority (including all female stakeholders) received tertiary education and had a median age of 46. They tended to be older than men in the community (median age of 35) and men on ART, whose median aged was 35 for men with a suppressed viral load and 34 for men with an unsuppressed VL (Berner-Rodoreda et al., 2021b). The majority of men with an unsuppressed VL were married, had a partner and lived together with partner and children, whereas only half of the men with VLS had a partner, and the majority did not live together (ibid).

2.1.4.4. Transcription, coding and analysis

All interviews were audio-recorded and transcribed by the research team and two additional transcribers (ibid). The interviews conducted in Chichewa were simultaneously translated and transcribed; one local transcriber quality-checked 20 translated transcripts against the Chichewa original between February and April 2020 (ibid). I checked all English transcripts against the audio as well as all final transcripts and uploaded them to NVivo 12©CSR for coding (ibid). The first codes were based on broad questions and topics from the interview guide such as “testing”, “adherence”, “facility-based issues” with inductive coding becoming the main approach as the study progressed (Berner-Rodoreda et al., 2021b). Inductive codes emerged from the interview process such as “running away”, “hoping to be healed”, “pills too big”, “pill-taking becoming routine”, “refraining from sex”; in vivo coding, i.e. the language and terminology used by interviewees was also used (Rubin and Rubin, 2012), e.g. “throat gets bored”, “drugs are fierce” (Berner-Rodoreda et al., 2021b). A code book was developed and refined with coding more interviews. Several coding rounds ensured the capturing of nuances (ibid). Sharing 10% of the interviews (n=7) selected through a random generator with two external researchers from the Liverpool School of Hygiene and Tropical Medicine fulfilled a dual purpose of comparing and discussing identified themes thus enriching the understanding of the data and comparing codes with one researcher. Themes identified from interview transcripts reflected the same reading of the data (ibid): a generally stigmatizing environment;

age-related differences in dealing with ART and stigma; sickness as primary motivation for testing; trust and mistrust informing disclosure; the importance of family support and counselling for ART uptake, young men's reliance on friends and peers; work-, life-style-, masculinity-, stigma- and facility-related adherence and retention challenges and MSW's preference for male-friendly, convenient and comfortable environments for ART delivery. Co-coding also revealed the same understanding of the data with minor differences such as coding into main or sub-codes, e.g. one coder would code for the relationship level node: "non-disclosure to partner or family member", the other for the child node of the same: "not wanting the partner to know". The co-coding also revealed that some codes were too close in meaning and were subsequently merged.

Salient themes and sub-themes were identified through a thorough familiarization with the data, open coding, organizing codes into a hierarchy and along the socio-ecological framework and in relation to enablers and challenges with ART and VLS (ibid). Main finding in relation to the SEM framework are shown in *figure 11*. *Table 4* below provides coding examples:

Table 4 Coding examples from Men and ART study based on socio-ecological model

SEM	Theme	Subtheme	Main Code	Subcode	Quote
Indi-vi-dual	Adhe-rence Expe-Rience	Missing doses	Expe-riencing adherence fatigue	"throat gets bored" (invivo code)	R: I usually miss about 5 or 6 days because when you have taken a lot of ARVs and have been consistent and constant in taking these drugs the throat feels somehow. I: What is this somehow? R: The throat tends to get bored and I lose appetite to take in some ARVs. I therefore tend to miss about a day. I: Does it feel like a dry throat? R: Yes, the way I feel like is the feeling that one gets when they have eaten a certain thing for quite a long time and it is boring on the throat. (MSW, unsuppressed VL, 29 yrs)
Rela-tion-Ships	Dis-closure	Motive for Dis-closure	Having been ill	Providing explana-tion for sickness	These people were just seeing me scratching my itchy skin, they therefore wanted to know the disease I had been suffering from and that is why It was a good thing to tell them that I had been diagnosed with HIV. (MSW with suppressed VL, 45 yrs)
Ser-vice Deli-very	ART reten-tion	Moni-toring Viral Load	Enabling Viral Load Sup-pression (Stake-holder per-spective)	Flexibi-lity of staff	I remember, having had like this scenario of a man who was in South Africa and was due for his viral load. So, because at that point in time of course it was that time when he was supposed to come but the employer said you are not going at this point in time. So, he suggested like okay: "So, can I have my viral load checked right here and send you the results?" So, I said: "yes," of which he did. And indeed, it was undetectable. Yeah, so that meant that then I had to give more drugs for him to send through the wife. (Female stakeholder)

SEM	Theme	Subtheme	Main Code	Subcode	Quote
So-ciety	Com-munity view of ART	Nega-tive view of ART	ART has side-effects	PLHIV on ART looking deformed	when one has taken ARVs for quite a long time, they develop side-effects such that their face gets to change and they start looking like a monkey. (MSW in community, 24 yrs)

Differences within and between respondent groups, in particular between stakeholders, men on ART and men in the communities, differences between men with suppressed and unsuppressed VLs as well as between younger and older men on ART were of particular importance in the analysis. For complex issues, charting tables were drawn up.

In order to assess scientific rigor for evaluations and qualitative research, Lincoln and Guba suggest to document credibility, transferability, dependability and confirmability (1986). For the Blantyre study, credibility was established through prolonged engagement in two one-month data collection periods and working closely with local research assistants using observation and triangulation of different research methods. Negative case studies were used during data collection as recommended by Morse to validate findings with new participants (Morse, 2015) rather than to eliminate them as originally proposed by Lincoln and Guba (1986). I discussed findings with the local organization and some of the participants (see 2.1.4.5). While I see this as an ethical obligation on the part of the researcher to feedback research results, I agree with Smith and McGannon (2018) and Morse (2015) that member "checking" as a way to establish credibility is problematic for ontological and epistemological reasons. Thick, descriptive data has been provided and I will leave it to the reader to judge whether this meets the standards of transferability; like Morse, I would see thick description as a way to establish credibility and reliability (Morse, 2015). Dependability and confirmability according to Lincoln and Guba are linked to an external audit (1986), which, according to Morse, is rarely conducted (Morse, 2015). Tracy, building on Lincoln and Guba's work, lists eight criteria for rigor in qualitative studies: worthy topic, rich rigor, sincerity, credibility, resonance, significant contribution, ethics, and meaningful coherence (2010). She views rich rigor to be informed by: theoretical constructs, data and time in the field, sample(s), context(s), data collection and analysis processes. Self-reflexivity and transparency characterize sincerity, and thick description, triangulation, multivocality (multi and varied voices) and member reflections are seen to inform credibility (2010:840.844). I have provided information on these components in this dissertation and have attached a commonly used checklist for qualitative research in appendix 6.

2.1.4.5. Consultations with local organization at beginning and end of qualitative data collection

The study had been planned with Lighthouse Trust staff. On August 26th, 2019, prior to data collection, I was asked to present the study in the UFC staff meeting. The staff present felt that

no probing on the understanding of the slogan **U**ndetectable = **U**ntransmittable should be conducted with men on ART or in the communities as this may lead to misunderstandings so probing on this issue was restricted to stakeholders. Close to concluding the IDIs, I presented main preliminary results in another staff meeting on December 2nd, 2019. Reactions by staff included surprise on some of the findings and a self-commitment for improved services to MSW. Final findings were presented on March 14th and 15th, 2022 to stakeholder groups. Discussions focused on stigma, communicating U=U and male-friendly health services with innovative approaches and targeted interventions for young men in their 20s.

2.1.5. Ethics approval and ethical considerations

The study was approved by the Heidelberg Ethics Commission on April 23, 2019 and the National Health Science Review Committee (NHSRC) in Malawi on August 9, 2019. An amendment correcting some minor discrepancies in the English and Chichewa documents was accepted in Lilongwe, Malawi on October 4th, 2019 and in Heidelberg, Germany on November 4th, 2019. The University of Heidelberg self-funded the study. No conflict of interest existed.

Study participants had to be 18 years and above. All were informed orally and in writing about the study and provided written voluntary consent to participate. All received the equivalent of 10 USD as time and/or transport compensation. In order to protect respondents' identity, all interviews were pseudonymized. Information about respondents refer to the respondent sub-group and age for MSW on ART and MSW in communities. If two men were of the same age in the same respondent group, they were numbered according to the timing of the interview or if this was identical, the interviewer's initials in alphabetical order. For stakeholders, age was deemed to be identifiable and thus, gender and sub-group are provided together with a number corresponding to the order of subgroup interviews.

2.2. Eswatini Men and PrEP Study

2.2.1. Study setting and PrEP procedures

The Hhohho region in the north west of Eswatini has an HIV prevalence rate of 25.7% (Ministry of Health, Swaziland National AIDS Program, Eswatini, 2019) which is below the national average yet still one of the highest globally. The study was conducted in six nurse-led clinics in the Hhohho region which were chosen by the Ministry of Health: four of the clinics were situated in rural areas (Horo, Ndvwabangeni Nazarene, Ndzingeni Nazarene, and Ntfonjeni) and two in semi-urban areas (Hhukwini, Siphocosini); all clinics provided HIV and ART services (Geldsetzer et al., 2020).

PrEP information along with information on HIV and TB was part of the morning talks by nurses in the waiting area of the six clinics (Berner-Rodoreda et al., 2020c). In order to

access PrEP, clients had to have an HIV-negative test and agree to a risk assessment (appendix 7), in which the following risk situations were established: having had unprotected sex, a partner of unknown or HIV-positive status, a sexually transmitted infection (STI), sex under the influence of alcohol or having made use of post-exposure prophylaxis (PEP) in the last six months (Berner-Rodoreda et al., 2020c). PrEP was also offered to HIV-negative target populations, specified by the Eswatini Government as: women between 16 and 25 years of age, those in a serodiscordant relationship, sex workers, men having sex with men, those with a current sexually transmitted infection, pregnant women, and lactating women (Swaziland National Aids Programme, 2016). Target populations thus showed a stronger female focus (Berner-Rodoreda et al., 2020c). In order to start PrEP, clients should meet at least one of the above risk criteria or belong to a target group, show no contra-indication for TDF/3TC (the PrEP regimen used in Eswatini) and have a desire to start PrEP, the latter overruling the results of the risk assessment – thus a client found not to be at risk but requesting PrEP could still receive PrEP (Berner-Rodoreda et al., 2020c).

2.2.2. Study design

The Eswatini case study is a multi/mixed-methods study based on quantitative and qualitative data in a convergent study design (Berner-Rodoreda et al., 2020c), see *figure 10*. Quantitative data include all clients who undertook a risk assessment at one of the six clinics taking part in the demonstration project and the sub-group of those who initiated PrEP. The data of men found to be at risk who provided a rationale for their decision for or against PrEP are also included. Qualitative data refer primarily to semi-structured in-depth interviews (IDIs) with a) men directly approached about PrEP and b) "outsiders": stakeholders, PrEP providers, local leaders and "decision-makers", i.e. HIV-positive men who were instrumental for their partner to initiate PrEP. Further "outsiders" included men in focus-group discussions (FGDs), i.e. bus-drivers, youth, and members of community advisory boards (Berner-Rodoreda et al., 2020c). A consultation of relevant policy and PrEP implementing documents, which were directly or indirectly referred to by participants were included for triangulation purposes as well as for illuminating the issues of PrEP target groups and the combination of alcohol and PrEP (see 3.2.6.8.). The following documents were analyzed for the above mentioned topics: Consolidated Guidelines on the use of antiretroviral drugs for treating and preventing HIV infection (World Health Organization, 2016), Pre-exposure prophylaxis (PrEP) for the prevention of HIV infection in Swaziland (Swaziland National Aids Programme, 2016), Clinical Implementation Guide for PrEP Provision in Eswatini (Ministry of Health, Swaziland National AIDS Programme, Eswatini, 2019) and the National Multisectoral HIV and AIDS Strategic Framework 2018-2023 (NERCHA, 2018).

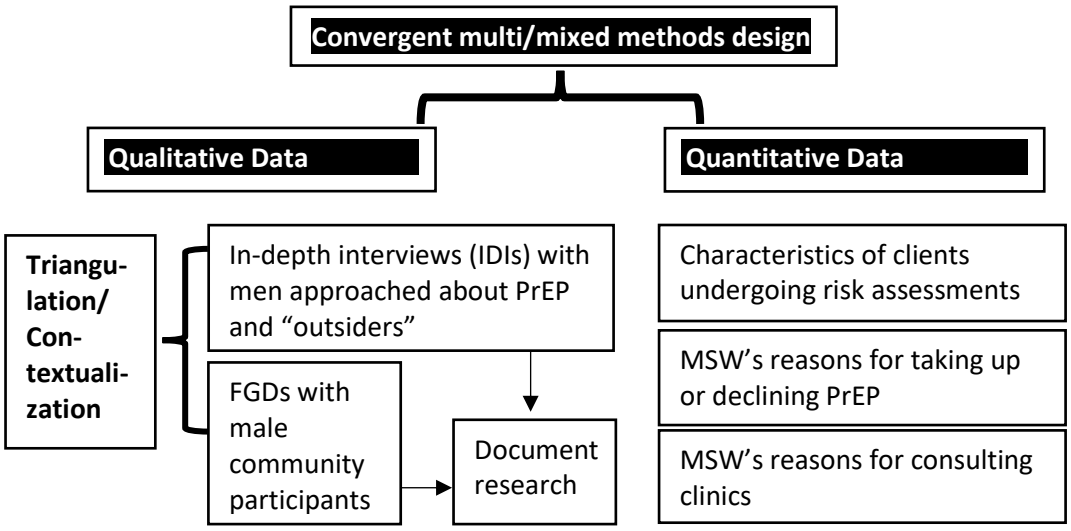

Figure 10 Study Design for Men and PrEP study, Eswatini

2.2.3. Quantitative sample - data preparation and analysis

The data for the quantitative component was drawn from the six clinics taking part in the demonstration project and was composed of all clients undergoing risk assessments and taking up PrEP between August 2017 and January 2019 (Berner-Rodoreda et al., 2020c). All clients aged 16 years and older who provided informed written consent, had a confirmed HIV-negative test, no current symptoms of an acute HIV infection or recent high-risk exposure to HIV, were at risk or willing to take PrEP and had no contraindications for TDF/3TC were eligible for participation in the demonstration study. Clients who were initiated on PrEP during the study period were asked to return for follow-up visits and further supplies after one month, then after two months and subsequently in three-month intervals for collecting PrEP pills and re-establishing their HIV-status (Berner-Rodoreda et al., 2020c). Through risk assessment forms, the following variables were collected: sex (binary), date of birth (continuous), self-reported age (continuous), reason for visit (categorical), relationship status (categorical), education (categorical), HIV test date (continuous), whether the participant had experienced at least one risk situation in the last six months (binary) or whether the client belonged to a target population (binary) as described in 2.2.1., see also appendices 7-8.

2.2.3.1. Data preparation

The data for this cross-sectional study was composed of all variables listed under 2.2.3 and included risk dates (i.e. the dates when risk was assessed) and PrEP initiation dates. The sample included those with a risk date and/or initiation-date between 1 August 2017 and 31 January 2019. Age was calculated by subtracting the date of birth from the risk date and dividing it by 365. If no date of birth was available, self-reported age was used.

2.2.3.2. Dependent variables

The two dependent or outcome variables of interest for the analysis were "being at risk" and "PrEP initiation". The binary variable "at risk" was composed of self-reported risk based on the criteria listed in section 2.2.1. and the client's interest to initiate PrEP. Thus, "at risk" was 1, if a client was considered to be at risk of an HIV infection or interested in starting PrEP and 0 otherwise. The binary variable "initiated" indicated 1 for at risk clients who were initiated on PrEP and 0 for those who were not initiated.

2.2.3.3. Independent variables

Binary variables included sex, defined as male or female, belonging to a target population (defined in 2.2.1) or exposure to a risk situation in the last six months (see 2.2.1. for details) with 1 for yes and 0 for no. The continuous variable age was transformed into a categorical variable for the age groups: 16-25, 26-35, 36-45, and above 45 years. Further categorical variables were education, relationship status, reasons for clinic visit, reasons for PrEP initiation and reasons for PrEP decline. Education was categorized as: no formal schooling, some/completed primary school, some/completed secondary school, some/completed tertiary education. Relationship status had four categories: multiple partners, one partner living together, one partner not living together, single with no relationship.

Reasons for clinic visits had the following categories: PrEP, voluntary counselling and testing (VCT), outpatient department (OPD), sexually-transmitted infection (STI), antenatal care (ANC), collecting pills and "other". Reasons for taking up PrEP included: being afraid of HIV, not wanting to negotiate condom use, not able to negotiate condom use, having multiple partners, partner having multiple partners, partner of unknown HIV-status, protecting oneself in case of sexual violence, partner being HIV- positive, wanting to have a baby, non-disclosure of reason and "other". Reasons for PrEP decline were categorized as: not considering myself at risk of HIV, family would judge, partner would judge, friends would judge, worry about side-effects, no time for frequent follow-up visits, not wanting to get tested every three months, not disclosing reason, likely to get infected anyway, HIV not a problem, HIV being a treatable disease and "other". Clients could name more than one reason for uptake or decline of PrEP.

2.2.3.4. Analysis of quantitative data

I will present descriptive statistics showing the distribution of individual-level characteristics in the sample who underwent a risk assessment and among those who initiated PrEP, see *3.2.1, table 17*. Descriptive results will be presented for the entire data set and gender-disaggregated. Reasons for clinic visits, PrEP uptake and decline will be presented in separate tables and figures and for the subset of men only, see 3.2.1. *table 18* and *figures 16* and *17*.

To estimate the associations between "at risk" and "initiated" and individual-level characteristics, I performed uni- and multivariable modified Poisson regressions using the entire sample as well as the male sub-sample only, see *tables 18* and *19* (for the rationale of using modified Poisson regressions, see introductory paragraph of chapter 2). Robust standard errors were estimated and adjusted for the clustering at the facility-level.

Multivariable modified Poisson regression models for both "at risk" and "initiated" included the independent variables gender (binary), age groups (categorical), education (categorical), relationship status (categorical), member of a target population (binary) and PrEP as a reason for the clinic visit (binary). In the scope of this dissertation, Stata 15 was used for the replication of the quantitative analysis.

2.2.4. Qualitative research – sample, data collection and analysis

Nurses were trained in 2017 prior to the commencement of the study in off and on-site trainings to equip them for offering PrEP and conducting risk assessments (Berner-Rodoreda et al., 2020c). For conducting fieldwork, a mixed gender team of five local research assistants with college education and fluency in siSwati and English was selected and trained for five days on conducting interviews and FGDs and on recording field notes with interview guides being tested and revised (Bärnighausen et al., 2019; Berner-Rodoreda et al., 2020c).

2.2.4.1. Sampling

Interview and FGD participants were purposively selected (Berner-Rodoreda et al., 2020c): Stakeholders based in Eswatini who either funded HIV work or were involved in policy or implementation were selected and snowball sampling used to identify additional stakeholders (Bärnighausen et al., 2019). PrEP service providers were interviewed as available in the six participating clinics, clients were selected by service providers or approached by the research team in the waiting area of the respective clinic; FGD participants were identified through community leaders and leaders themselves through the community leadership system (Berner-Rodoreda et al., 2020c).

2.2.4.2. Data collection

Doxastic-style semi-structured interviews (Berner-Rodoreda et al., 2021a, 2020a) lasted 30 minutes to one hour and aimed at understanding the perception of PrEP and for those taking PrEP their experience with PrEP; FGDs lasted 1-2 hours and provided a community perspective on HIV and PrEP (Berner-Rodoreda et al., 2020c).

In daily debriefs the research team exchanged notes on the interview experience and discussed areas for further probing (McMahon and Winch, 2018) – one of these areas was clients' sexual behavior when on PrEP (Berner-Rodoreda et al., 2020c). Also, it was felt that an

important stakeholder group – community leaders – should be heard and further interviews were scheduled with religious and community leaders towards the end of the demonstration project. As it emerged that men were underrepresented in the PrEP study, communal leaders were also interviewed and asked about men and PrEP services (Berner-Rodoreda et al., 2020c) and about gender, religious and cultural issues. Interview and focus group discussion guides contained open as well as closed (yes/no) questions (Berner-Rodoreda et al., 2020c), see appendices 9-17. The research team including research assistants and experienced researchers conducted interviews with stakeholders in English, with other respondent groups the interviews were either conducted in siSwati or English (Bärnighausen et al., 2019) and took place in a quiet space at the clinic, in people's offices or convenient meeting places. Before the interview commenced, the interviewer would introduce him-/herself and the study and ask for informed consent, see also 2.2.5.. All interviews and group discussions were audio-recorded (Berner-Rodoreda et al., 2020c).

2.2.4.3. Inclusion and characteristics of respondents

All semi-structured interviews with male interviewees for which a transcript existed (n=73) were included in this dissertation. These interviews can be split into two groups (see *table 5*): men directly approached about PrEP (n=34) and what I termed "outsiders" (n=39). "Decision makers", i.e. men on ART facilitating PrEP for their partner were included for their understanding of PrEP and a comparison of PrEP and ART. In order to also gain insight into the perspectives of female stakeholders and female PrEP providers on men and PrEP, transcripts by female respondents were included, if they contained statements about MSW in the context of HIV and PrEP (n=41). An overview of selected respondent characteristics for the qualitative data set is presented in *table 5*. As mentioned with regards to the Malawi study, respondent characteristics are seen as background not as a result and therefore appear in the methods section.

Table 5 Eswatini respondent characteristics

Characteristics	**Male**	**Femaleº**
Men directly approached about PrEP	**34**	
Starting PrEP	8	
Continuing PrEP	14	
Discontinuing PrEP	5	
Re-Starting PrEP	1	
Deferring PrEP	1	
Declining PrEP	5	
Outsiders	**39**	**41**
PrEP stakeholders	10	11
PrEP providers	12	30
Local Leaders	14	0
Decision Makers	3	0

Characteristics	Male	Female[º]
Age groups		
18-29	16	19
30-39	25	11
40-49	11	2
50+	11	2
No age given	10	7
Education		
No formal education	6	0
Primary education	11	1
Secondary education	21	6
Tertiary education	26	29
Vocational training	2	0
No information	7	5
Relationships Status and Living Arrangements[♦]		
Partner/Married	52	12
Single	7	7
Multiple partners	7	0
Living Together	23	6
Not living Together	12	12
No information	8	7

[º] Only female PrEP providers and stakeholders who spoke about men were included.
[♦] Multiple answers could be given, e.g. married and multiple partners.

The median age of male respondents approached for PrEP was 33 years. The majority of MSW were educated up to secondary level and had a partner or were married – this held true for PrEP clients as well as the entire group of male respondents. The majority of PrEP providers, stakeholders and decliners had received tertiary level education. Multiple partners were named by some male PrEP clients; local leaders did not describe themselves as polygamous or having multiple partners.

The data set also included four FGDs with men: one male-only FGD with bus-drivers, two mixed gender group discussions with community advisory board members and a mixed youth group. The number of participants per FGD varied from 5 to 11.

2.2.4.4. Transcription Coding and Analysis

Bilingual research assistants transcribed interviews and group discussions while simultaneously translating them into English and checked them against the audio for quality (Berner-Rodoreda et al., 2020c). 20% of transcripts were checked by another transcriber for quality assurance. In order to get an in-depth understanding of the data, transcripts were read several times and coded in NVivo Pro 12 © CSR. The first codes were based on broad questions and topics from the interview guide such as “risk perception”, “reasons for taking PrEP”, “concerns about PrEP”. Inductive and invivo codes (see 2.1) based on issues emerging from the interview process such as “PrEP=Messiah”, “partner taking PrEP”, “not wanting to be seen as PLHIV when at clinic”, “community perception of HIV”, “initiation for PrEP too long” were added and applied to the data set. Emerging issues were discussed on a weekly basis and a code-book drawn up and revised in line with an iterative approach (see introductory

paragraphs for chapter 2) (Berner-Rodoreda et al., 2020c). Salient themes and sub-themes were identified through a thorough familiarization with the data with several coding rounds in order not to miss any nuances of the transcripts and open coding being followed by organizing codes into a hierarchy along SEM units and in relation to enablers and challenges with PrEP, as shown in *table 6* below and *figure 15* in the results chapter. Differences within and between respondent groups, in particular the differences between men engaged with PrEP and outsiders such as stakeholders, PrEP providers, local leaders were of particular importance and charting tables were drawn up to facilitate comparison and analysis between different respondent groups. Ten transcripts from different respondent groups were selected through a random generator: MSW starting and continuing PrEP (n=5), male and female stakeholders (n=2), male and female PrEP providers (n=2), male local leaders (n=1) and compared with a researcher from the original research team who had coded the entire data set independently. The comparison showed similar codes and issues identified from the transcripts, e.g. fear of HIV, PrEP side-effects and daily pill taking, PrEP in relation to other prevention tools especially condoms, serodiscordant relationships, trust and distrust, stigma, PrEP access issues, with nuanced differences such as the other researcher coding "fear of HIV" in an interview whereas I coded "fear of *discussing* HIV", or the other researcher coding "religion influencing ability to seek care" whereas I coded the passage under "healing beliefs and practices" showing agreement on the issues but a slightly different perspective. Discrepancies in categorizing codes according to the SEM level such as "belief that PrEP will work" as structural whereas I coded this under personal attitude or "PrEP as safety for the future" as interpersonal whereas I coded it as personal led to discussing and agreeing on the dominant SEM level while acknowledging nuances of other SEM levels. *Table 6* presents coding excerpts.

Table 6 Coding examples from Men and PrEP study based on socio-ecological model

SEM	Theme	Subtheme	Main Code	Subcode	Quote
Individual	Attitude towards PrEP	Comparing PrEP to other pre-vention tools	Preference for PrEP	PrEP = Messiah	Others are also happy because they highlighted that they can't use the other preventive measures like circumcision and condoms, so PrEP is their *"Messiah*". (Male PrEP provider, 33 yrs-2)
Relation-Ships	Sexual re-lations	Sexual behavior on PrEP	No. of sexual partners	Same as before	I've always had many girlfriends even before I started taking PrEP, so I can't say it has contributed to that. (MSW discontinuing PrEP, 40 yrs)
Service Delivery	Collecting PrEP pills	Transport – Getting to the facility	Burden of regular appoint-ments	Lack of transport money	we are not always having money for transport since it's a bit far to the hospital, then you will have to walk distances. (MSW continuing PrEP, 26 yrs)

SEM	Theme	Subtheme	Main Code	Subcode	Quote
Service Delivery	Collecting PrEP pills	Transport – Getting to the facility	Transport not a problem	Owning a car	This facility is closer to home I feel very good because I am a mechanic so I travel a lot with my car passing the clinic every day to and from work so I like that it's on my way to and from work I can easily come anytime (MSW starting PrEP, 41 yrs)
Society	Community perception of PrEP	Stigma related to PrEP	Being mistaken for PLHIV	View in rural areas	The people from rural areas do know that I take some pills but their conclusion is that I am living with HIV. (MSW continuing PrEP, 30 yrs)

Co-coding thus enriched the understanding of the data by providing another researcher's perspective – a perhaps more important function than intercoder reliability, which Morse sees as counteracting interpretive coding in non-structured interviews (Morse, 2015, 1997) and other scholars view as an approach not fully in line with qualitative research and not an indication of reliability (Braun and Clarke, 2019, Smith and McGannon, 2018). Tracy's eight criteria for rigor in qualitative studies: worthy topic, rich rigor, sincerity, credibility, resonance, significant contribution, ethics, and meaningful coherence (2010) have been applied as well as a commonly used checklist for qualitative studies (see appendix 6).

2.2.5. Ethics Approval and Ethical Considerations

The Eswatini Ministry of Health National Health Research Review Board (MH/599C/IRB0009688/NHRRB538/17) as well as the USA Chesapeake Institutional Review Board (Pro00021864) approved the demonstration project with its quantitative and qualitative components; the Heidelberg Ethics Commission granted an exemption (Berner-Rodoreda et al., 2020c). Funding for this study was provided through the Bob L. Herd Foundation and the Alexander von Humboldt Foundation; no conflict of interest existed. Prior to conducting interviews and FGDs with participants of 16 years and above, all participants provided voluntary written consent upon being informed of the study and receiving written information (Berner-Rodoreda et al., 2020c). In order to protect respondents' identity, all interviews were pseudonymized. Information about respondents refer to the respondent sub-group and age. If two respondents of the same sub-group were of the same age, they were numbered according to the timing of the interview.

2.3. Reflexivity and Positionality

As a social anthropologist, my epistemological thinking is informed by constructivism; with my alma mater excelling in social action theory (seeing people as actors rather than following norms) and with over 20 years' experience in international development work, I also lean towards transformative approaches (Creswell and Creswell, 2018). Many years of working in

the field of HIV have, however, also made me appreciate the benefits of quantitative studies so that my own approach has become more pragmatist in combining the strengths of both qualitative and quantitative research.

Over two decades of NGO-based development work in different continents had made me increasingly uncomfortable with the almost exclusive focus on women in general development and in HIV-related work which seemed counterproductive to developing sustainable solutions and health improvements for both gender groups. Prior to embarking on the doctorate, I organized exposure visits, held workshops with partner organizations in Sub-Saharan Africa, Asia and Eastern Europe on pertinent HIV issues, discussed men's health and HIV behavioral issues with a view to transform engendered behavior. I also tried to ensure that all gender groups become meaningfully engaged in development and HIV projects and that gender is not misunderstood as a synonym for women (Berner-Rodoreda, A., 2008; Berner-Rodoreda and Neuenroth, 2016; Schüle and Berner-Rodoreda, 2010). Yet NGO work did not permit a more rigorous study or investigation. My PhD interests centered on examining men's involvement in PrEP and ART services and to explore how services could be better adapted to men's needs. I was also curious as to how men, in particular MSW in Eswatini, viewed and experienced PrEP and how this related to their notions of masculinity. Regarding MSW in Blantyre, I was interested in how men on ART experienced pill-taking and clinic visits and to explore differences in perception between men on ART and men in surrounding communities and differences between men suppressing and not suppressing their viral loads.

The idea to compare PrEP and ART emerged as both studies were conducted or planned for Southern African countries and were, at the time of the study, based on daily pill-taking of ART-based regimens and thus required a similar commitment from clients. Additionally, not many studies had compared PrEP and ART, and a focus on men who have sex with women was predominantly lacking in PrEP studies beyond studies on serodiscordance. As in any social research the findings revealed new insights, some of which I had not anticipated. I will revert back to the "surprising findings" in the discussion section.

As a mature-age German female with a lot of prior international exposure to a variety of stakeholders, I felt comfortable speaking to and interviewing younger and older stakeholders. Good rapport was established in all interviews. Neither gender nor differences in age, educational, professional or national backgrounds seemed to affect the interview situation negatively which felt to be on an equal footing despite conducting stakeholder or expert interviews which often tend to be characterized by unequal interviewer-interviewee relationships (Berner-Rodoreda et al., 2020a).

RESULTS

Please note: the author has published partial aspects of the results chapter in:

Berner-Rodoreda, A., Geldsetzer, P., Bärnighausen, K., Hettema, A., Bärnighausen, T., Matse, S., McMahon, S.A., 2020. **"It's hard for us men to go to the clinic. We naturally have a fear of hospitals." Men's risk perceptions, experiences and program preferences for PrEP: A mixed methods study in Eswatini.** PLOS ONE *15*, e0237427, doi: 10.1371/journal.pone.0237427.

Berner-Rodoreda, A., Ngwira, E., Alhassan, Y., Chione, B., Dambe, R., Bärnighausen, T., Phiri, S., Taegtmeyer, M., Neuhann, F., 2021. **"Deadly", "fierce", "shameful": notions of antiretroviral therapy, stigma and masculinities intersecting men's life-course in Blantyre, Malawi**. BMC Public Health *21*, 2247, doi: 10.1186/s12889-021-12314-2.

The results of the Malawi ART and Eswatini PrEP studies are based on quantitative and qualitative findings. In each country case study, I will first present overall sample characteristics and regression results showing the relative risk of viral load suppression in the Malawi ART study, and the relative risk of HIV exposure and of PrEP initiation in the Eswatini PrEP study. In each case study, quantitative findings will be followed by qualitative findings which are presented in relation to SEM (see *figures 11 and 15*). I will also highlight facilitators and barriers and differences within and between sub-groups. Findings of the Malawi ART study (3.1.) will be followed by the Eswatini PrEP study (3.2.). A summary table of PrEP and ART barriers and facilitators (3.3) will be presented at the end of the results section which facilitates a comparison of the two ART-based interventions.

3.1. Malawi Case Study

Quantitative and qualitative findings of the Malawi study appear in the following six sub-chapters: in 3.1.1. and 3.1.2, I will describe the sample and identify characteristics that are associated with VLS. Qualitative findings follow in sub-chapters 3.1.3 – 3.1.6. Since community perceptions of HIV, ART and PLHIV played an important role in interviews and set the scene for men's choices and experiences I will first present the societal level (3.1.3.) followed by the intrapersonal (3.1.4.) and interpersonal levels (3.1.5) and close the case study with men's experience of and ideas for service delivery of ART (3.1.6).

Figure 11 provides an overview of pertinent issues emerging qualitatively at the different SEM levels with masculinity aspects, stigma and the life-course as cross-cutting and intersecting themes (see also *figure 22*). As will be shown in the sub-chapters, the experience of testing for HIV and adhering to ART also related to various SEM levels, yet as men's testing and adherence behavior was impacted upon by stigma, notions of masculinity and the life-course such as the desire not to be seen at facilities, not to appear weak or promiscuous, not to slim one's chances of finding a partner or by the fear of losing a partner, I have restricted the cross-cutting themes to those highlighted in color.

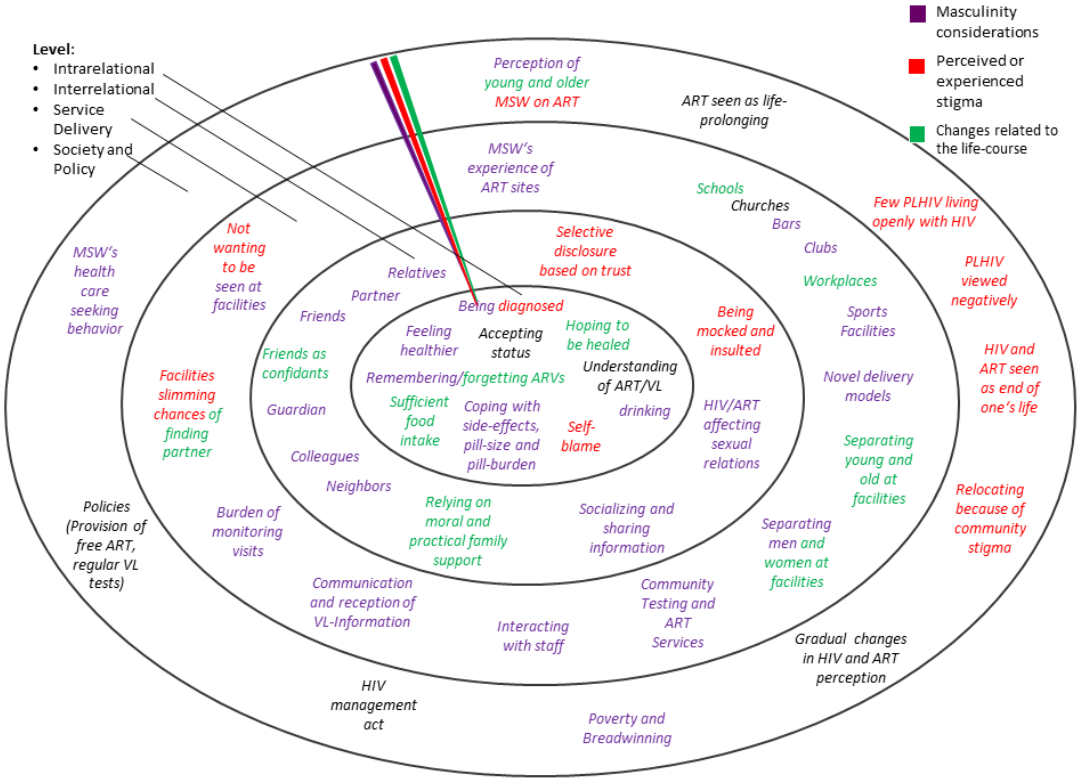

Figure 11 Socio-ecological model – men and ART study with cross-cutting themes

MSW's ART initiation, adherence and retention was informed by masculinity, stigma and life-course considerations and their experience of SEM-levels, as will be shown in 3.1.3.-3.1.6..

3.1.1. Descriptive Statistics

The final dataset included 9,982 clients with at least one VL test administered between December 2017 and June 2019, of which 41% were men (*table 7)*. Their mean age was 43.4 (±11.0) years, slightly higher than the mean age of female clients (39.6 (±10.5) years). The largest group on ART for the above parameters was in their 40s followed by clients in their 30s for men and vice versa for women. At ART initiation, 39% of male clients in this sample were asymptomatic (WHO stage 1) compared to 50% of female clients, and 45% of male clients compared to 36% of female clients had a severely compromised immune system (WHO stage 3 or 4) indicating that late presentation to facilities was more common in men than in women. 37% of clients of the sample started treatment in the same month of being diagnosed HIV-positive, and 31% of clients had inconclusive data entries. Not all clients benefited from the Test and Treat policy introduced in Malawi in 2016 (Ministry of Health, Malawi, 2016), as the majority of clients (61%) had been on ART for more than three years in 2019. They were thus initiated according to the CD4 count or WHO staging regulations which, for some clients, led

to a delay of starting ART. Despite the number of late presenters, only 9% of men (and 7% of women) had a treatment supporter (guardian), see *table 7*.

94% of all clients suppressed their VL thus showing high VLS at this facility surpassing the UNAIDS objectives for 2020 already in 2019. VLS below 90% were observed in younger men aged 18-29 years (87%). The difference of VLS between younger men and those aged 60 years and older (97%) was 10% which indicated differing ART experiences over the life-course, see also *table 8*. Irrespective of WHO staging at initiation, time delays in initiating ART and time/years spent on ART, clients showed a VLS above 90%.

In comparison to clients on first line, out of whom 96% suppressed their VL, clients on 2nd line and non-standard ART showed much lower VLS rates (76% and 64% respectively); for the sub-group of male clients the suppression rate on non-standard ART was as low as 59% highlighting challenges with adherence, yet this group was numerically very small.

From seven missed appointments onwards, male clients showed a VLS rate below 90% with the exception of eight missed appointments; for female clients, suppression rates below 90% were observed for 8 and 10+ missed appointments. Very few clients had a guardian (8.8% of men and 6.9% of women). The presence of a guardian showed a slightly higher VLS rate, yet irrespective of having a guardian, VLS was above 90% for all clients. Male clients of unknown distance to the facility had a VLS rate below 90%. VLS rates between 70 and 89% could be observed in clients who had died, defaulted or stopped ART during the 19 months' time-span, interestingly not for clients who transferred out and not for male clients who stopped ART – both groups showed suppression rates of 90% and more, see *table 7*.

Table 7 Number and percentage of clients on ART and suppressing their viral load at UFC, Blantyre, with at least one viral load measurement result between Dec. 2017 – June 2019 by each characteristic

	Total	**Men**	**Women**	**Total**	**Men**	**Women**
Mean age	41.16 (SD#: 10.89)	43.41 (SD: 10.97)	39.58 (SD: 10.54)	42.14 (SD: 11.31)	43.74 (SD: 10.87)	39.82 (SD: 10.52)
	Number (%) with VL result			**Number (%) virally suppressed**		
N	**9,982**	4,137	5,845	**9,372 (93.9)***	3,865 (93.4)**	5,507 (94.2)***
Missing	***0***	*0*	*0*	***0***	*0*	*0*
Age						
18-29	**1,355 (13.6)**	410 (9.9)	945 (16.2)	**1,216 (89.7)**	355 (86.6)	861 (91.1)
30-39	**3,241 (35.5)**	1,070 (25.8)	2,171 (37.1)	**2,993 (92.4)**	976 (91.2)	2,017 (92.9)
40-49	**3,279 (32.8)**	1,514 (36.6)	1,765 (30.2)	**3,130 (95.5)**	1,437 (94.9)	1,693 (95.9)
50-59	**1,524 (15.3)**	822 (19.9)	702 (12.0)	**1,467 (96.3)**	785 (95.5)	682 (97.2)
60+	**583 (5.8)**	321 (7.8)	262 (4.5)	**566 (97.1)**	312 (97.2)	254 (97.0)
Missing	***0***	*0*	*0*	***0***	*0*	*0*
WHO stage at initiation						
1	**4,542 (45.5)**	1,619 (39.1)	2,923 (50.0)	**4,309 (94.9)**	1,526 (94.3)	2,783 (95.2)
2	**1,531 (15.3)**	691 (16.7)	840 (14.4)	**1,437 (93.9)**	651 (94.2)	786 (93.6)
3	**3,078 (30.8)**	1,394 (33.7)	1,684 (28.8)	**2,861 (93.0)**	1,286 (92.3)	1,575 (93.5)
4	**828 (8.3)**	432 (10.4)	396 (6.8)	**764 (92.3)**	402 (93.1)	362 (91.4)
Missing	***3***	*1*	*2*	***1***	*0*	*1*

	Total	Men	Women	Total	Men	Women
	Number (%) with VL result			Number (%) virally suppressed		
Delay in initiation (months)						
0	**3,659 (36.7)**	1,571 (38.0)	2,088 (35.7)	**3,416 (93.4)**	1,460 (92.9)	1,956 (93.7)
1	**844 (8.5)**	365 (8.8)	479 (8.2)	**795 (94.2)**	348 (95.3)	447 (93.3)
2	**476 (4.8)**	213 (5.1)	263 (4.5)	**456 (95.8)**	201 (94.4)	255 (97.0)
3	**337 (3.4)**	138 (3.3)	199 (3.4)	**324 (96.1)**	132 (95.7)	192 (96.5)
4	**211 (2.1)**	80 (2.0)	131 (2.2)	**194 (91.9)**	73 (91.3)	121 (92.4)
5	**138 (1.4)**	53 (1.3)	85 (1.5)	**133 (96.4)**	51 (96.2)	82 (96.5)
6	**103 (1.0)**	43 (1.0)	60 (1.0)	**98 (95.1)**	42 (97.7)	56 (93.3)
7	**64 (1.0)**	22 (1.0)	42 (1.0)	**62 (96.9)**	21 (95.5)	41 (97.6)
8	**56 (1.0)**	25 (1.0)	31 (1.0)	**52 (92.9)**	24 (96,0)	28 (90.3)
9	**60 (1.0)**	19 (1.0)	41 (1.0)	**58 (96.7)**	17 (89.5)	41 (100)
10	**43 (0)**	19 (1.0)	24 (0)	**40 (93.0)**	17 (89.5)	23 (95.8)
11	**26 (0)**	14 (0)	12 (0)	**25 (96.2)**	14 (100)	11 (91.7)
12+	**841 (8.4)**	304 (7.3)	537 (9.2)	**801 (95.2)**	288 (94.7)	513 (95.5)
Missing	**3,124**	1,271	1,853	**2,918**	1,177	1,741
Years on ART						
0	**1,080 (10.8)**	485 (11.7)	595 (10.2)	**1,035 (95.8)**	467 (96.3)	568 (95.5)
1	**1,453 (14.6)**	643 (15.5)	810 (13.9)	**1,321 (90.9)**	573 (89.1)	748 (92.4)
2	**676 (6.8)**	321 (7.8)	355 (6.0)	**635 (93.9)**	296 (92.2)	339 (95.5)
3	**470 (4.7)**	197 (4.8)	273 (4.7)	**439 (93.4)**	184 (93.4)	255 (93.4)
4	**585 (5.9)**	233 (5.6)	352 (6.0)	**549 (93.9)**	223 (95.7)	326 (92.6)
5	**579 (5.8)**	228 (5.5)	351 (6.0)	**540 (93.3)**	212 (93.0)	328 (93.5)
6	**689 (6.9)**	261 (6.3)	428 (7.3)	**654 (94.9)**	246 (94.3)	408 (95.3)
7	**573 (5.7)**	231 (5.6)	342 (5.9)	**535 (93.4)**	217 (93.9)	318 (93.0)
8	**727 (7.3)**	283 (6.8)	444 (7.6)	**682 (93.8)**	263 (92.9)	419 (94.4)
9	**631 (6.3)**	262 (6.3)	369 (6.3)	**589 (93.3)**	242 (92.4)	347 (94.0)
10	**676 (6.8)**	288 (7.0)	388 (6.6)	**642 (95.0)**	273 (94.8)	369 (95.1)
11	**534 (5.3)**	210 (5.1)	324 (5.5)	**512 (95.9)**	204 (97.1)	308 (95.1)
12	**507 (5.1)**	183 (4.4)	324 (5.5)	**474 (93.5)**	172 (94.0)	302 (93.2)
13	**396 (3.9)**	146 (3.5)	250 (4.3)	**383 (96.7)**	140 (95.9)	243 (97.2)
14	**255 (2.6)**	109 (2.6)	146 (2.5)	**238 (93.3)**	99 (90.8)	139 (95.2)
15 +	**149 (1.5)**	56 (1.4)	93 (1.6)	**143 (96.0)**	54 (96.4)	89 (95.7)
Missing	***2***	*1*	*1*	***1***	*0*	*1*
Line of regimen						
1st line	**8,930 (89.5)**	3,690 (89.2)	5,240 (89.6)	**8,583 (96.1)**	3,532 (95.7)	5,051 (96.4)
2nd line	**932 (9.3)**	402 (9.7)	530 (9.1)	**708 (76.0)**	303 (75.4)	405 (76.4)
NS•	**103 (1.0)**	34 (1.0)	69 (1.2)	**66 (64.1)**	20 (58.8)	46 (66.7)
Missing	***17***	*11*	*6*	***15***	*10*	*5*
Missed appointments						
0	**4,567 (45.8)**	1,888 (45.6)	2,679 (45.8)	**4,359 (95.5)**	1,806 (95.7)	2,553 (95.3)
1	**2,036 (20.4)**	837 (20.2)	1,199 (20.5)	**1,924 (94.5)**	781 (93.3)	1,143 (95.3)
2	**1,277 (12.8)**	511 (12.4)	766 (13.1)	**1,192 (93.3)**	469 (91.8)	723 (94.4)
3	**709 (7.1)**	309 (7.5)	400 (6.8)	**649 (91.5)**	280 (90.6)	369 (92.3)
4	**469 (4.7)**	202 (4.9)	267 (4.6)	**425 (90.6)**	184 (91.1)	241 (90.3)
5	**285 (2.9)**	121 (2.9)	164 (2.8)	**261 (91.6)**	110 (90.9)	151 (92.1)
6	**181 (1.8)**	75 (1.8)	106 (1.8)	**169 (93.4)**	69 (92.0)	100 (94.3)
7	**123 (1.2)**	53 (1.3)	70 (1.2)	**108 (87.8)**	45 (84.9)	63 (90.0)
8	**87 (1.0)**	31 (1.0)	56 (1.0)	**79 (90.8)**	29 (93.6)	50 (89.3)
9	**70 (1.0)**	27 (1.0)	43 (1.0)	**62 (88.6)**	23 (85.2)	39 (90.7)
10 +	**178 (1.8)**	83 (2.0)	95 (1.6)	**144 (80.9)**	69 (83.1)	75 (79.0)
Missing	***0***	*0*	*0*	***0***	*0*	*0*
Guardian						
Yes	**766 (7.7)**	362 (8.8)	404 (6.9)	**732 (95.6)**	349 (96.4)	383 (94.8)
No	**9,216 (92.3)**	3,775 (91.2)	5,441 (93.1)	**8,640 (93.8)**	3,516 (93.1)	5,124 (94.2)
Missing	***0***	*0*	*0*	***0***	*0*	*0*

	Total	Men	Women	Total	Men	Women
		Number (%) with VL result			Number (%) virally suppressed	
Distance to facility						
<10km	**6,630 (66.4)**	2,754 (66.6)	3,876 (66.3)	**6,217 (93.8)**	2,571 (93.4)	3,646 (94.1)
>=10km	**3,169 (31.7)**	1,320 (31.9)	1,849 (31.6)	**2,989 (94.3)**	1,239 (93.9)	1,750 (94.7)
Unknown	**183 (1.8)**	63 (1.5)	120 (2.1)	**166 (90.7)**	55 (87.3)	111 (92.5)
Missing	***0***	*0*	*0*	***0***	*0*	*0*
Outcome						
Alive on ART	**8,682 (87.0)**	3,550 (85.8)	5,132 (87.8)	**8,271 (95.3)**	3,379 (95.2)	4,892 (95.3)
ART stop	**54 (1.0)**	32 (1.0)	22 (0)	**48 (88.9)**	29 (90.6)	19 (86.3)
De-faulted	**682 (6.8)**	332 (8.0)	350 (6.0)	**552 (80.9)**	264 (79.5)	288 (82.3)
Transferred Out	**480 (4.8)**	174 (4.2)	306 (5.2)	**440 (91.7)**	157 (90.2)	283 (92.5)
Dead	**84 (1.0)**	49 (1.2)	35 (1.0)	**59 (70.2)**	36 (73.5)	25 (71.4)
Missing	***0***	*0*	*0*	***0***	*0*	*0*

 # Standard deviation
** % of virally suppressed men and women among all men and women with result (in row)*
*** % of virally suppressed men among men with VL result (in row)*
**** % of virally suppressed women among women with VL result (in row)*
• Non-standard treatment
Note: Where percentages do not add up to 100%, it is due to rounding and/or missing numbers.

More granular age-bands showed VLS rates < 90% for men below 35 years with the 18-24-year-olds having the lowest VLS rate (85%) of all age groups, see *table 8*.

Table 8 Viral load suppression in male clients (Dec. 2017 - June 2019) in 5-year age-bands

Age group	18-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+	N
Total°	228	186	381	689	817	697	534	288	167	154	**4,137**
VLS	193	162	340	636	770	667	512	273	162	150	**3,865**
% VLS	84.6	89.0	89.2	92.3	94.2	95.7	95.9	94.8	97.0	97.4	**93.4**

° Total male clients with a VL result in the period of interest.

1.5.3.1. ART regimens and VLS

The most commonly used ART regimens in this sample were the improved first line regimens 13A (tenofovir disoproxil fumarate, lamivudine and dolutegravir) and 5A (tenofovir disoproxil fumarate, lamivudine and efavirenz). 60% of clients with a VL test result in the period of interest were on regimen 13A, 27% on 5A, the remainder was on other first, second or a non-standard regimen (*table 9*). Among male clients, 13A was the dominant regimen used (76% with a VL result and 80% with a suppressed VL being on this regimen); whereas 5A was "only" taken by 10% of male clients with a VL result in the period of interest and 9% with a suppressed VL. VLS data showed very high suppression rates of 97.8 - 100% for men on a dolutegravir-based regimen. Regimen 1A (d4T/3TC/NVP) had been frequently prescribed in the past and was phased out due to severe adverse effects; yet some, although very few clients were still on this regimen (n=8) in the period of interest, see *table 9*. Low VLS in men between 50% and 70% were not confined to non-standard treatment but also included 2nd line regimens 8A and

11A and the old 1st line regimen 1A, with <5 male clients on 1A or 11A. Suppression rates in men between 80% and 90% applied to 1st line regimens 2A, 6A and the 2nd line regimens 7A and 10A, suggesting that the particular regimen used may have a bearing on VLS.

Table 9 ART regimens in clients with a VL result between December 2017 and June 2019

	Number (%)[x] with VL result			Number (%)[y] virally suppressed		
ART regimen	**Total**	**Men**	**Women**	**Total**	**Men**	**Women**
	9,982	4,137	5,845	**9,372 (94)**	3,865 (94)	5,507 (94)
0A ABC/3TC+ NVP	**28 (0)**	8 (0)	20 (0)	**27 (96.4)**	8 (100)	19 (95.0)
1A d4T/3TC/NVP[z]	**8 (0)**	4 (0)	4 (0)	**5 (62.5)**	2 (50.0)	3 (75.0)
2A AZT/3TC/NVP	**31 (0)**	12 (0)	19 (0)	**27 (87.1)**	10 (83.3)	17 (89.5)
4A AZT/3TC + EFV	**2 (0)**	1 (0)	1 (0)	**1 (50.0)**	1 (100)	0 (0)
5A TDF/3TC/EFV	**2,712 (27.2)**	424 (10.2)	2,288 (39.1)	**2,510 (92.5)**	348 (82.1)	2,162 (94.5)
6A TDF/3TC + EFV	**107 (1.0)**	52 (1.3)	55 (1.0)	**92 (86.0)**	43 (82.7)	49 (89.1)
7A TDF/3TC + ATV/r	**370 (3.7)**	160 (3.9)	210 (3.5)	**331 (89.5)**	141 (88.1)	190 (90.5)
8A AZT/3TC + ATV/r	**527 (5.3)**	226 (5.5)	301 (5.1)	**354 (67.2)**	151 (66.8)	203 (67.4)
10A TDF/3TC + LPV/r	**17 (0)**	8 (0)	9 (0)	**13 (76.5)**	7 (87.5)	6 (66.7)
11A AZT/3TC + LPV/r	**18 (0)**	8 (0)	10 (0)	**10 (56.0)**	4 (50.0)	6 (60.0)
13A TDF/3TC/DTG	**5,980 (59.9)**	3,155 (76.3)	2,825 (48.3)	**5,861 (98.0)**	3,086 (97.8)	2,775 (98.2)
14A AZT/3TC + DTG	**1 (0)**	1 (0)	0 (0)	**1 (100)**	1 (100)	0 (0)
15A ABC/3TC + DTG	**61 (1.0)**	33 (1.0)	28 (1.0)	**59 (96.7)**	33 (100)	26 (92.9)
17A ABC/3TC + EFV	**15 (0)**	11 (0)	4 (0)	**14 (93.3)**	10 (90.9)	4 (100)
Non-standard regimen	**103 (1.0)**	34 (1.0)	69 (1.2)	**66 (64.1)**	20 (58.8)	46 (66.7)
Missing	***2***	*0*	*2*	***1***	*0*	*1*

A = adult formulation, for full names of ARV substances, see list of abbreviations

[x] Percentage of all clients (or all men or all women respectively) with a VL result (in column)

[y] Percentage of VL suppressed among those with a VL result (all clients, men and women respectively) (in row)

[z] former ART regimen with adverse effects which was mentioned as phased out in 2016 Malawi ART guidelines (Ministry of Health, Malawi, 2016)

3.1.1.2 Outcome for those with no VL in period of interest

Examining the outcome in the period of interest in more detail shows that that fewer clients with no VL result were alive (61%, see *table 10*) compared to clients who had their VL taken (87%, see *table 7*). The percentage of clients who defaulted (21%) or transferred out (14%) was considerably higher among those with no VL taken (*table 10*) than those with a VL result during the period of interest (5 and 7% respectively, *table 7*). The VL policy changed in 2019 from a 2-year to an annual VL; a number of clients may therefore have missed out on a VL

result as the period of interest for this study covered 19 months. Comparing male with female clients with no VL taken showed a slightly higher percentage of male defaulters (23% vs. 20%) and a slightly lower percentage of male clients transferring out (12% vs. 15%).

Table 10 Outcomes for clients without a VL in the period Dec. 2017- June 2019

Outcome	**Clients with no VL-Test between Dec. 2017-June 2019**		
	no. and %♣ of all clients	no. and %♣ of men	no. and %♣ of women
	7,520	3,188	4,332
Alive on ART	**4,609 (61.3)**	1,948 (61.1)	2,661 (61.4)
ART Stop	**140 (1.9)**	69 (2.2)	71 (1.6)
Defaulted	**1,596 (21.2)**	721 (22.6)	875 (20.2)
Transferred out	**1,039 (13.8)**	371 (11.6)	668 (15.4)
Dead	**136 (1.8)**	79 (2.5)	57 (1.3)

♣ Percentages of total clients, of total men and total women respectively for each outcome (% within column)

3.1.2. Analytical Statistics

In univariable regressions, all variables, except for distance to the facility, were significantly associated with suppressing the HI-virus (*table 11*). Age was positively associated with VLS, with clients in older age groups having a higher relative risk to suppress the virus compared to 18-29-year-olds. For male clients, the age gradient was more pronounced. The relative risk to suppress the virus was lower among clients on 2nd line treatment (RR: 0.79 (0.76-0.82)) and among those on non-standard medication (RR: 0.67 (0.58-0.77)) compared to clients on 1st line ART. For the subset of male clients, the relative risk of VLS on non-standard treatment was 39% lower than for men on 1st line treatment (RR: 0.61 (0.46-0.81)) indicating that non-standard treatment was a significant impediment for VLS in men. Having a treatment guardian was associated with a 4% higher relative risk to suppress the virus in male clients compared to those with no guardian. For clients who had initiated ART with a severely compromised immune system (WHO stage 3 or 4), the relative risk to suppress the virus was only marginally lower than for those who were asymptomatic (WHO stage 1); for male clients, initiation at WHO stage 3 was significantly associated with a slightly lower relative risk to suppress the virus (RR: 0.98 (0.96-1.00)). Time on treatment (years on ART) did not seem to play a decisive role for the relative risk of VLS – while it was significantly associated with VLS for all clients (p-value), the rounded result of 1 showed only a marginal difference in the relative risk of VLS over the years on ART. For the subset of male clients, the variable was not significantly associated with VLS. The variable missed appointments was only weakly negatively associated with VLS among both the entire sample and among male clients only.

The results from multivariable regressions largely confirmed the results from univariable regressions, yet compared to univariable regressions where there was no significant association between sex and VLS, multivariable regressions showed male sex being weakly negatively associated with VLS. Contrary to univariable regressions, belonging to the

age group 30-39 years was not significantly associated with VLS in multivariable regressions. Multivariable regressions slightly lowered the estimate of age for the relative risk to suppress the virus compared to univariable regressions indicating that other factors counteracted the heightened relative risk to suppress for both the overall set and for the male sub-group. This could be observed in all age groups compared to the group of 18-29-year-olds. In multivariable regressions, the relative risk to suppress for all clients on non-standard ART (RR: 0.68 (0.60-0.79)) including the sub-set of men (RR: 0.64 (0.49-0.84)) was slightly higher than in univariable regressions (RR: 0.67 (0.58-0.77)) and (RR: 0.61 (0.46-0.81)) respectively thus showing a slight moderating effect of covariates, yet multivariable like univariable regressions showed a substantially reduced relative risk of more than 30% in ART clients to suppress the virus compared to clients on 1st line ART. For clients who had initiated ART in WHO stages 3 or 4, univariable like multivariable regressions showed a slightly lower relative risk to suppress; for male initiators, only WHO stage 3 was significantly associated with the relative risk of VLS in both uni- and multivariable regressions, see *table 11*.

Table 11 Relative Risk for men and women with at least one VL between Dec. 2017 and June 2019 compared to men only for the outcome suppression with selected characteristics

	RR (95% CI) **Whole data set** (n=9,982)	P-value	RR (95% CI) **Men only** (n=4,137)	P-value
	UNIVARIABLE			
Sex				
Female	*Reference Group*			
Male	0.99 (0.98-1.00)	0.108	Omitted	
Age				
18-29	*Reference group*			
30-39	1.03 (1.01-1.05)	0.006	1.05 (1.01-1.10)	0.016
40-49	1.06 (1.04-1.08)	<0.001	1.10 (1.05-1.14)	<0.001
50-59	1.07 (1.05-1.09)	<0.001	1.10 (1.06-1.15)	<0.001
60+	1.08 (1.06-1.11)	<0.001	1.12 (1.08-1.17)	<0.001
Regimen Line				
1st line	*Reference group*			
2nd line	0.79 (0.76-0.82)	<0.001	0.79 (0.74-0.83)	<0.001
non-standard	0.67 (0.58-0.77)	<0.001	0.61 (0.46-0.81)	0.001
Guardian	1.02 (1.00-1.04)	0.020	1.04 (1.01-1.06)	0.002
Distance				
<10 km	*Reference group*			
>=10 km	1.01 (1.00-1.02)	0.278	1.01 (0.99-1.02)	0.532
WHO Stages				
Stage 1	*Reference group*			
Stage 2	0.99 (0.98-1.00)	0.148	1.00 (0.98-1.02)	0.967
Stage 3	0.98 (0.97-0.99)	0.001	0.98 (0.96-1.00)	0.030
Stage 4	0.97 (0.95-0.99)	0.009	0.99 (0.96-1.02)	0.377
Years on ART	1.00 (1.00-1.00)	0.014	1.00 (1.00-1.00)	0.057
Missed Appointments	0.99 (0.99-0.99)	<0.001	0.99 (0.98-0.99)	<0.001

Note: Univariable modified Poisson regression models with a robust error structure were estimated.

	RR (95% CI) **Whole data set** (n=9,982)	P-value	RR (95% CI) **Men only** (n=4,137)	P-value
	MULTIVARIABLE			
Sex				
Female	*Reference group*			
Male	0.99 (0.98-1.00)	0.047	Omitted	
Age				
18-29	*Reference group*			
30-39	1.01 (0.99-1.03)	0.315	1.03 (0.99-1.07)	0.224
40-49	1.04 (1.02-1.06)	<0.001	1.06 (1.02-1.10)	0.002
50-59	1.05 (1.02-1.07)	<0.001	1.06 (1.02-1.10)	0.005
60+	1.06 (1.03-1.08)	<0.001	1.08 (1.03-1.12)	0.001
Regimen Line				
1st line	*Reference group*			
2nd line	0.79 (0.76-0.82)	<0.001	0.79 (0.75-0.84)	<0.001
non-standard	0.68 (0.60-0.79)	<0.001	0.64 (0.49-0.84)	0.001
Guardian	1.02 (1.01-1.04)	0.003	1.04 (1.02-1.06)	<0.001
Distance				
<10 km	*Reference group*			
>10 km	1.01 (1.00-1.02)	0.247	1.00 (0.98-1.02)	0.945
WHO Stages				
Stage 1	*Reference group*			
Stage 2	0.99 (0.97-1.00)	0.064	1.00 (0.98-1.02)	0.872
Stage 3	0.98 (0.97-0.99)	<0.001	0.98 (0.96-1.00)	0.042
Stage 4	0.97 (0.95-0.99)	0.012	0.99 (0.96-1.01)	0.324
Years on ART	1.01 (1.00-1.01)	<0.001	1.01 (1.00-1.01)	<0.001
Missed Appointments	0.99 (0.99-0.99)	<0.001	0.99 (0.98-1.00)	<0.001

Note: Multivariable modified Poisson regression models with a robust error structure were estimated.

Poisson regressions thus showed the relative risk for VLS increasing with age and decreasing sharply in clients/men on second line and on non-standard antiretroviral treatment.

3.1.3. "When people realize that you are HIV-positive, they develop a negative attitude towards you" – the implications of societal views, beliefs and policies

In this sub-chapter, I will look at the larger society and perceptions of HIV and ART in and around Blantyre in 2019 as well as changes in these perceptions over time. I will further examine the way people living with HIV are regarded by the communities, explore the role of gender and age and examine the expressions of masculinities with regard to men's health seeking behavior. I will end this chapter by examining relevant policies in Malawi and views of these policies for male ART uptake and retention and summarize main facilitators and barriers from a societal point of view.

3.1.3.1. "A frightful thing" and "fierce drugs"- community views of HIV and ART

Respondents' community views of HIV and ART diverged. Stakeholders' dominant community perceptions differed from those held by other respondent groups (Berner-Rodoreda et al.,

2021b). Male ART clients and male community respondents portrayed their communities as predominantly frightened of HIV, seeing HIV as "the end of one's life" (MSW in community, 25 yrs) (ibid) for lack of a cure, ignoring HIV or avoiding to speak about it. "A lot of people think when they have tested HIV-positive, it means everything has ended, and they have no future" (MSW with suppressed VL, 51 yrs). These views were portrayed by respondents independent of their own HIV-, VL-status or age:

> People are very much scared of the virus HIV... And when we hear that someone is HIV-positive, we begin to discriminate them because we do not have that much information on HIV and AIDS. We are therefore scared about it such that for someone to contract HIV it is a frightful thing. (MSW in community, 24 yrs)

Insufficient HIV information was seen to range from denying the existence of HIV: "most people do not believe that HIV is really there" (MSW with unsuppressed VL, 31 yrs) to believing that almost everyone is infected: "They say this disease is "international", they regard that only very few people do not have the HIV virus" (MSW with unsuppressed VL, 19 yrs-2). Some community members were portrayed as regarding themselves immune to HIV or not caring about it, engaging in risky behavior or seeing HIV as a problem of others. "Some people until today think they can't contract HIV; as such they continue to indulge in unprotected sex, having multiple partners and disregard anything to do with HIV and AIDS" (MSW with suppressed VL, 19 yrs-1). While positive views were also depicted, mixed and negative community reactions of HIV as the end of one's life dominated the narratives (ibid).

> There are some people who accept it [HIV], and there are some who… cannot go to the hospital. But it is because they are afraid of getting tested that if they are found HIV-positive that will be the end of everything. (MSW in community, 48 yrs-1)

Stakeholders, by contrast, painted a predominantly positive picture of people being knowledgeable about HIV through sensitization and HIV-positive family members with HIV seen as a "normal" and treatable infection (Berner-Rodoreda et al., 2021b). Only one counsellor echoed the community sentiments by male ART clients and community respondents of a positive test result being interpreted as the end of one's life.

Similar contradictory community appraisals were noticeable with regards to *ARVs*. While stakeholders also recounted negative community beliefs of ARVs leading to deformities and death, positive views dominated, stressing the benefits of ART in achieving and maintaining long and healthy lives, a reduction in deaths and in the number of orphans.

> As of now in the community, I think, they know that HIV is no longer a scary disease as it were then because they have heard that they are medications that help to boost up the immunity and they can stay longer, for a long time. (female stakeholder, health-based-7)

Male clients and male community respondents acknowledged the existence of favorable community views on ART in terms of life-prolonging and health-improving qualities. At the same time, they highlighted community concerns regarding the daily intake of sizeable tablets which were believed to be a "burden" (MSW in community, 31 yrs). Some people in the

communities were reported to view ART as having detrimental effects on one's health, and respondents promptly added that their own perception differed (see italics):

> Most people say ARV drugs are not good because a person takes the pill every day; this makes a person to look weak because taking medication every day is not good. It is better if you skip a day when taking drugs. *So, this is not good*. (MSW with suppressed VL, 18 yrs)

Communities would regard ARVs as "shameful" (MSW with unsuppressed VL, 19 yrs-2), "dangerous, and others say they are deadly" (MSW in community, 44 yrs-2), "most people say that those drugs are bad and do not help (MSW in community, 51 yrs) (Berner-Rodoreda et al., 2021b). Some called them "fierce" (ibid): "because they are fighting a fierce and dangerous disease: HIV. So, they cannot manufacture drugs which are not fierce for a fierce disease" (MSW with unsuppressed VL, 37 yrs). ART was further viewed as punishment for a promiscuous life-style. Long-term side-effects of ART were perceived to lead to recognizable body deformities "such that their face gets to change and they start looking like a monkey" (MSW in community, 24 yrs) quoted in (Berner-Rodoreda et al., 2021b). Reduced fertility was an additional concern: "they believe it affects one's fertility that is why most people don't come for treatment" (MSW with unsuppressed VL, 19 yrs-1). Communities also worried about sexual performance and sufficient food intake: "the issue that ARVs weaken your feelings… When you eat a little and take those drugs, you don't perform well so people run away from those things" (MSW with unsuppressed VL, 38 yrs-1). Visible side-effects and perceived sexual implications of ART contributed to a negative image (ibid). Even when the benefits of ART were acknowledged, communities would view unpleasant side-effects and daily pill-taking for life as burdensome and daunting. Some also revealed that individuals would throw away ARVs or feed them to livestock, others would delay starting ART; only few men were believed to start ART immediately in an attempt to keep up a healthy appearance. According to the narratives, the benefits of ART did not seem widely known in the communities in and around Blantyre.

Contrasting community perceptions of stakeholders and other respondent groups showed predominantly positive perceptions of communities' understanding of HIV and ART by the former and predominantly negative or ambivalent perceptions by the latter two groups with some in-group variation (Berner-Rodoreda et al., 2021b). Some stakeholders, especially health personnel, stated mainly working with clients rather than at the community level and may therefore have had a different perspective.

3.1.3.2. Changes in the perception of HIV and PLHIV

Positive changes in societal perceptions of HIV were mostly mentioned by stakeholders and men in the community and related to 1) HIV progressing from a death sentence to a long and healthy life on treatment and 2) stigma reduction though greater societal openness towards PLHIV and improved ARVs which made PLHIV less recognizable. Improvements regarding a

lessening of stigma and side-effects were more frequently mentioned than the life-prolonging nature of the ARVs, yet respondents tended to "qualify" their statements regarding stigma reduction by describing people's behavior or attitudes which were often not in line with those societal changes as I will point out below (see page 55).

The change from HIV being associated with a death sentence or with witchcraft to seeing HIV as a manageable life-long infection was mainly mentioned by stakeholders. They highlighted free and widely available ART services from 2004, early treatment leading to the elimination of AIDS-defining illnesses and "a dramatic change where the number of people dying because of HIV dramatically dropped" (male stakeholder, academia-based-2). Better health outcomes were seen as reducing stigma:

> HIV is not perceived the same as in the past. In the past it was perceived as a life-threatening condition to a level where any person who got it was fully stigmatized because it is like, you are dead and buried. But lately I think people have come to realize that so many people, particularly after Government rolled out universal access to ARVs, many people remaining healthier for longer. (male stakeholder, NGO-based-1)

All respondent groups mentioned positive changes brought about through various interventions, but not all people changed their perception. "I would say little by little people have started embracing ART messaging due to so many initiatives made by government and non-government organizations…, though others are still in doubt if ARVs really help" (MSW with unsuppressed VL, 47 yrs).

HIV and ART perceptions seemed to be projected onto PLHIV and slow to change. In describing community attitudes and behavior towards PLHIV, male ART clients and community respondents underscored non-association with PLHIV, exclusion from social activities, open or covert insults including the labelling of PLHIV as "non-productive", "dead", "promiscuous", "unrighteous", "engaged in bad behavior", "not fit enough to be part of the society"(Berner-Rodoreda et al., 2021b):

> People in the community shun people living with HIV and look down on them. The community seems to mark them as wrongdoers and that they cannot be of help on anything in the community, they are not considered to be priorities when developments want to come in the community, but rather, they think of someone who is not HIV-positive as priorities to help with such developments meaning that people look at this HIV person in a judgmental way. (MSW in community, 25 yrs-2)

Stigma by association and a low regard for PLHIV would lead to cold-shouldering:

> When you have gone for drinking, you cannot buy your drink and join those that know you to have HIV as these people get to think that if I stay with this HIV person what will people think about me? Even when playing football, people say that "he does not have energy, that one, do not touch him, he will fall down". (MSW in community, 26 yrs) quoted in (Berner-Rodoreda et al., 2021b)

Those describing a positive mindset towards PLHIV were a minority among male ART clients and male community respondents. Stakeholders and some men in the community, while also describing community views of PLHIV as promiscuous, immoral, "deserving" to be living with

HIV and being gossiped about, painted a picture of positive transformation, a harmonious living together in families and communities with PLHIV acting as role-models for others.

> We still have some people who feel that HIV is for people who are promiscuous but the majority, they have come to realize that it is an infection or that anybody can contract it, yeah… Others would look at them like people who are encouraging the general community to go to others, to go and get tested, others get encouraged… "oh, he is still alive. He is saying, maybe he has lived with the virus for maybe 10 or 5 years. That means, if I go for a test, I can also live just like this person". (female stakeholder, academia-based-1) quoted in (Berner-Rodoreda et al., 2021b)

While the dominant community views depicted by stakeholders were positive and those depicted by men in the community and men on ART predominantly negative or ambivalent, members of each group also depicted contrary views; among stakeholders, those who described a more stigmatizing environment were mostly those who lived openly with HIV.

Views diverged on the question of PLHIV living openly with the virus. Most male ART clients and community respondents thought it was only few individuals with enough courage and strength who lived openly with HIV: people who either did not worry about others' opinions or had a desire to encourage or warn others. Stakeholders' opinions were divided as to whether it was many or few living openly with HIV. Some male community respondents and male ART clients declared that nobody in their community lived openly with HIV. In one rural community all respondents stated that they only hear rumors.

> R: I can say that there are a lot of people living with HIV here but they do not come in the open to say that I am HIV-positive, it is just generally difficult.
>
> I: How long have you stayed in this area?
>
> R: About 20 years… Ever since the beginning, we just read the signs and we know that that one and that one is positive. We also just hear from people that that one is HIV-positive since on this issue there is no one who comes openly to say that I am like this. (MSW in community, 27 yrs-2)

In semi-urban and urban areas of Blantyre district, some male respondents also reported not knowing anyone who lived openly with HIV.

> There is no-one who has ever come to the open to declare their HIV status… It is because when people talk about HIV, all they think about is that it was contracted through sexual intercourse and other ways. So, it becomes hard to come to the open and declare one's HIV status. (MSW in community, 39 yrs)

For stakeholders, the benefits of ART with more people living a "normal" life and some people living openly with HIV, more people being affected, particularly family members and societies gaining more factual knowledge about ART led to stigma reduction. Some men in the community echoed positive developments due to the sheer scale of people affected by HIV. "Things have changed, the insults minimized since it has spread and everyone may be found positive, and in a house one or two are there." (MSW in community, 48 yrs-1). Exposure to HIV at family and community level was seen to have brought about change: "the societies have learned to accommodate people with HIV" (MSW in community, 31 yrs). Yet, when asked

about how the society sees PLHIV or specific groups like youth, statements in the same interviews were qualified: "I would say there are mixed reactions, some would take it positively while some would think they are odd ones out in the society" (MSW in community, 31 yrs). Youth "would want to go to a hidden place not in this village" (MSW in community, 48 yrs-1) thus showing that positive societal change was a process rather than an attained goal. Analogous to men in the communities, some stakeholders also qualified their statements regarding stigma reduction:

> Of course, these days we don't have much stigma against HIV. But we used to have issues whereby they wouldn't even share mugs or beddings with people living with HIV. But now, there is still some stigma, especially if people, for example those that have been disfigured by the previous ART that we used to have; then people somehow can guess that maybe this one might have the condition. Or maybe if it is a child and parents have passed away, if a parent has passed on with the condition, then people have difficulties taking care of the orphans that maybe are suspected to have been born with the condition whether they have been tested or not. (female stakeholder, health-based-8)

While the former avoidance of PLHIV had declined, some people would continue to stigmatize on the basis of a perceived HIV-status. Newer and non-disfiguring ARVs as another positive change was remarked upon mainly by stakeholders and community respondents.

> I don't have anything to add apart from commending the government for changing the effects the drugs had on the people. Initially they had negative effects like deformities on the face and legs of people. Now they cannot be recognized. (MSW in community, 39 yrs)

The new ARVs could be seen as making it easier for PLHIV to hide their status – thus perhaps not overcoming stigma but aiding PLHIV to live a "normal" life, yet the belief that one could recognize a PLHIV on ART because of disfigurations persisted for some:

> In the past we could hear that those taking ARVs tend to have symptoms that are visible such that people could foretell if someone takes ARVs or not because of how their bodies were looking like. These people still think that even the ARVs that people are receiving now do have such signs and symptoms that one can be seen with. (MSW with unsuppressed VL, 18 yrs) quoted in (Berner-Rodoreda et al., 2021b)

While negative images of HIV and ART tended to linger in communities (3.1.3.1.), the interviews portrayed a society in transition with new information, observations and experiences slowly replacing older ones (ibid). Statements of the way PLHIV were perceived in and around Blantyre by different respondent groups portrayed an overall picture of PLHIV living in a stigmatizing environment which only gradually seemed to change to accepting PLHIV as full members of the society.

3.1.3.3. Men – the stronger or weaker gender in the context of ART?

Stakeholders portrayed women as forming the majority of people living openly with HIV, "men are very few who live positively or openly… women are much stronger than men, they respond very quickly" (male stakeholder, church-based 1). Men would be "shy" and see it as a sign of weakness to reveal their status openly. While a male stakeholder highlighted social aspects in terms of a concern for the family and how the children might be treated at school, MSW's

reputation or social standing and a fear to become stigmatized were seen as main reasons for their public non-disclosure. These considerations seemed even more prominent for affluent men.

> R: But somebody who has got a decent job, say for example, like myself, if I was HIV-positive for instance, chances are, I would not declare my status.
>
> I: And what would be the reasons?
>
> R: Yeah, you know, it's prestige, you consider yourself to be the elite, so, you know, when you see somebody coming out in the open then you think, maybe they are crazy or what, how would they do that?
>
> I: Why would people think they are crazy?
>
> R: Yeah, you know, they say money is the answer to any problem because for them, they say, anyway, if I have got a problem I would go, maybe like to a private hospital for instance. I would pay for services, so I do not need to say it in the open, because to them, somebody who comes out in the open, it's like, you are asking for help. (male stakeholder, academia-based-2) quoted in (Berner-Rodoreda et al., 2021b)

Some stakeholders perceived an additional reason for men not to reveal their HIV-status publicly in the anticipated blame and accusation of being promiscuous.

> In the community I work, you find that women would always say: "I got the virus because my husband or my partner had so many sexual partners." No one, very few women would actually admit that they had many sexual partners. So, it's like the blame is put on men most of the times. So, I guess maybe that's also the other reason why most men would want to keep it to themselves. They would not want to disclose. (female stakeholder, academia-based-1)

Across respondents, opinions were split as to which gender group received more blame, mockery or insult: some saw men condemned for living "recklessly" and being unfaithful, others thought women were accused of being promiscuous, unfaithful and infecting men whose behavior might be condoned or regarded as "above reproach" (male stakeholder, church-based-2).

> But men living with HIV, people perceive it as normal. They say, men are allowed to be polygamist, they are allowed to have multiple wives, multiple girlfriends. But a woman living with HIV is always perceived negatively, as she has been in prostitution. So, I think women are more ill-treated when they are living with HIV compared to men. The society does not hold high regard for women with HIV. (female stakeholder, health-based-8) interview excerpt quoted in (Berner-Rodoreda et al., 2021b)

Some felt that there was no difference in how men and women were perceived by the community. Gender, according to the views of some stakeholders and a man in the community, was not the reason for a negative perception but the mode of contracting the virus. "Some got infected through their own making while others did not. So, people perceive those who got the virus through their making negatively" (MSW in community, 27 yrs-1).

Against this backdrop of community sentiments, men who lived openly with HIV were perceived as showing little concern or interest in gender expectations or assumptions (Berner-Rodoreda et al., 2021b).

> They are still men, they still maintain some of the characteristics that men are, but their focus in relation to HIV is totally different, it's still being on treatment and having better

> health and helping someone out and they don't care what people say about it. (male stakeholder, NGO-based-3) quoted in (Berner-Rodoreda et al., 2021b)

The masculinity of men who lived openly with HIV thus did not fit into the dichotomy and stereotyping of men and women's behavior which emerged from interviews across respondent groups: women were seen as more health and community oriented. They would participate in community activities unlike men, would reveal their status to their partner, join support groups and talk openly to their friends, while men would hide their status. Women were also perceived as better informed and regular health care seekers who would look after sick family members, test for HIV and accept their status more easily and with more consistency of taking ART than men.

> Women follow instructions very well for drugs while men - why I am saying they don't really follow instructions about drugs? You receive drugs and then you go drinking and smoking when you come back from there, you have forgotten to take medication and you have slept. (MSW in community, 48 yrs-1)

A minority commented that acceptance is a personal issue for all PLHIV irrespective of gender and two stakeholders voiced a diametrically opposed view and saw men starting ART more quickly than women or described women as more frequent decliners. Younger men with unsuppressed VLs viewed men as bolder than women in collecting ARVs at the clinic, yet very few described women as fearful. With few exceptions, women were portrayed as responsible and family-orientated, men as self-centered, carefree and not interested in health.

Men in the community and men on ART considered the "shyness" of men as a major barrier for men's involvement in ART programs and linked this "shyness" to men's denial and "ego" - "the main problem is the ego in men. They don't want to feel embarrassed about their private life" (MSW with unsuppressed VL, 53 yrs). The fear of a positive test result and its repercussions on one's life was viewed as a major testing barrier for men.

> We have this thing as men where we think it's good to live the way we are living than go get tested and know that we are HIV-positive or negative because I think it should be something to do with the same fears I talked about, about what the society would begin to talk about, what your friends, something like that. And possibly just the knowledge that you have the virus can begin to torment you, maybe you think I will die soon or something like, yeah, so you have fears about discrimination, to be discriminated against if you get proper treatment in your state or in your condition, I think men are just afraid of those things, and maybe people would begin to say that he is just living recklessly, something like that, yes, so people would like to maintain the status quo, I think. (MSW in community, 31 yrs)

MSW's testing barriers were thus seen to be inextricably intertwined with masculinity notions and anticipated stigma. This was even more pronounced for younger men: "it's mostly young ones that are afraid to be known and being seen by friends. In fact, they are shy; in fact, VCT, it's not an easy process" (MSW with unsuppressed VL, 26 yrs) quoted in (Berner-Rodoreda et al., 2021b). Stakeholders perceived the difficulties for youth to test because of the implications of a positive test result.

> because of their age and it's like, they have the whole future in front of them, the impact of the result is huge on young people as compared to adults. Some of them are not mature

> enough to handle that kind of information…The information that you are going to stay on treatment for life to them is threatening. The interpretation is more of like it's a death sentence to them. (male stakeholder, NGO-based-3)

Some older men described men as not caring for others. "Some men simply do not want to get tested, because they do not care who they pass the virus to after testing positive" (MSW with unsuppressed VL, 53 yrs). A female stakeholder highlighted men's power over women: "a man can decide to just divorce a woman, if they know of their status and it's allowed, it's allowed because it's a man… And the man is just free gallivanting wherever he may" (female stakeholder, health-based-7). Yet, respondent groups also highlighted men's role as breadwinners, the head of the family who cares and provides for family members: "they do not want their wife and their children to suffer" (MSW with unsuppressed VL, 31 yrs). Men were thus described in contradictory terms: as irresponsible and despotic in not taking care of their health, passing on the virus to others and divorcing the wife if she tests positive, but also as responsible in taking care of their families. Those who lived openly with HIV had overcome the "shyness" which characterized other men's dealings with health facilities.

Similarities between gender groups were perceived in both groups being blamed for being promiscuous. Some men – mainly men with unsuppressed VLs – also stressed commonalities in the way men and women dealt with HIV and ART: "In my opinion I don't see any difference for both men and women – what matters is a mindset change and acceptance" (MSW with unsuppressed VL, 45 yrs).

3.1.3.4. Age and life-course as important factors for perceptions of men on ART

Moving from gender to men's life-course and examining the way men of different ages were viewed by society revealed that responsibility, better acceptance of HIV-status, commitment to ART, care for the family's wellbeing and financial security and less influence by others were associated with older men (Berner-Rodoreda et al., 2021b). By contrast, problems in accepting their HIV-status, non-disclosure, treatment avoidance, being childish, reckless or inconsistent were descriptions of younger men (ibid). These community perceptions were shared across respondent groups and independent of respondents' age.

> There is a big difference: older people are mature, so they understand issues better than young people and they are at least committed to ART than younger men. Most young men shun treatment; they are shy, afraid of friends and above all young people lack responsibility. (MSW with suppressed VL, 45 yrs) quoted in (Berner-Rodoreda et al., 2021b)

Younger men were also believed to be more heavily affected by stigma than older men and would shun testing and treatment in order to improve their chances of finding a partner.

> So, for younger men like me they are also interested in asking younger girls out in the village so if the girls know that they are HIV-positive, the girls just refuse to date them so in order to keep their dignity in the village, they just do not go to receive medication. (MSW in community, 24 yrs)

Young men were not only at the receiving end of stigma, both older and younger men also viewed young men actively involved in stigmatizing others. “The youths like teasing that we are taking ARV drugs” (MSW with suppressed VL, 51 yrs) A young man conceded that “behind their backs we joke that HIV medication has suited them, they are now gaining weight” (MSW in community, 24 yrs).

MSW between 18 and 29 years believed that older men had certain advantages: they may have been diagnosed when they already had a long-term partner and had more money at their disposal for transport costs so treatment was easier for men who had “eaten a lot of Christmases” (MSW on ART, unsuppressed VL, 29 yrs-1) and had established their social standing. Being a father and providing for the family changed the societal standing of men so that the community would not exclusively define middle-aged to older men in terms of their HIV-status: “maybe the health is not everything, it is the money” (male stakeholder, NGO-based-1) quoted in (Berner-Rodoreda et al., 2021b). Society seemed to be more lenient with older men who had a societal standing and may have also been caring for family members.

> The community is more of accepting the older men who are living with HIV than the younger ones. The younger ones it’s like the perception is you have already destroyed your life before you have started it. You were promiscuous… For older men, it’s like the situation is accepted to a certain extent... You have lived part of your life, so you can manage the remainder. (male stakeholder, NGO-based-3) quoted in (Berner-Rodoreda et al., 2021b)

Being seen as “reckless” or “promiscuous” was not restricted to young men – older men could be viewed the same, yet older men’s “reckless” behavior was believed by some to be of a lower scale:

> A man can hold his heart recognizing that he has a family. If they do it, it means only a few do it, but boys are in the era of enjoyment and they try to do whatever their friends are doing … What is killing most of the youth is enjoyment. (MSW on ART with unsuppressed VL, 38 yrs-2)

Older men’s behavior would also be interpreted in a more favorable light compared to younger men:

> In our culture, if a man is involved in risky behaviors, it’s a little bit acceptable… for a man it is perceived normal … for younger men, it’s like, no, these people are involved in promiscuous behaviors, that’s why they have HIV” (male stakeholder, NGO-based-2) quoted in (Berner-Rodoreda et al., 2021b)

Community perceptions of stakeholders also encompassed boys and very old men in addition to younger and middle-aged/older men. The mode of transmission would impact on how they were perceived: “let’s say, someone, we call them the boys, maybe they didn’t contract the virus themselves. Most of the times people would think, maybe it was mother-to-child-transmission” (female stakeholder, academia-based-1), see *figure 12*.

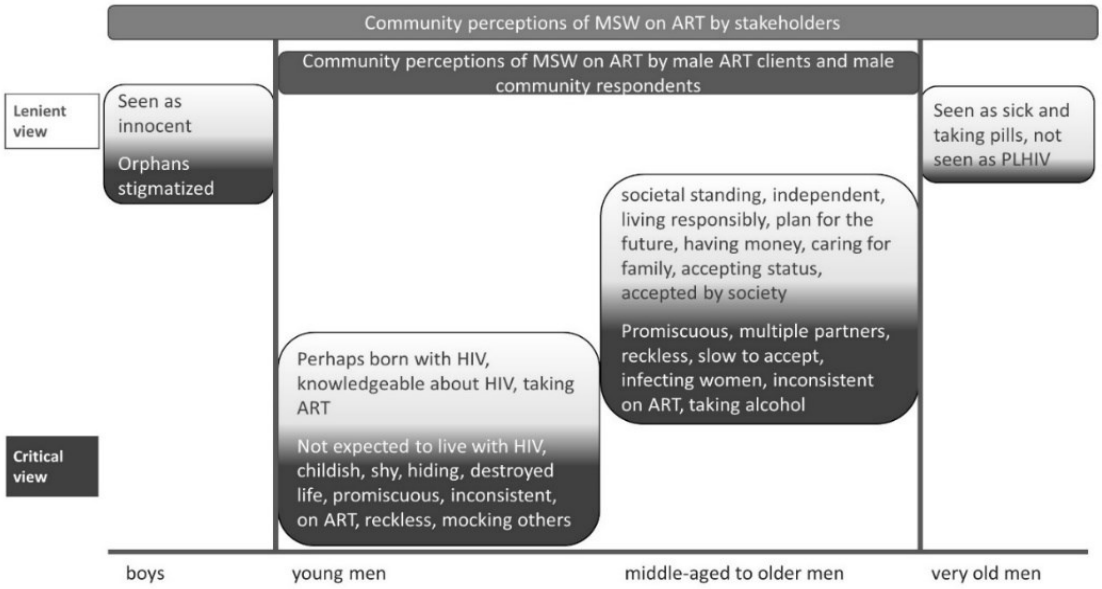

Figure 12 Age-related community views of MSW on ART according to respondent groups adapted from (Berner-Rodoreda et al., 2021)

Legend: a darker background and lower position shows negative perceptions, a lighter background and higher position a more lenient view

The very old were also seen less critically. "I would say it's very rare for older men, it's very rare to classify them. Most maybe we say even, if he is sick, no one knows he is taking medication maybe because of the old age." (male stakeholder, church-based-1) quoted in (Berner-Rodoreda et al., 2021b). *Figure 12* illustrates community views of the various respondent groups with stakeholders' perceptions being the most nuanced (ibid). Other respondent groups mainly perceived a dichotomy of younger men on ART viewed critically and older men more leniently by society (ibid) with five men on ART aged 19 to 39 and one stakeholder viewing age as irrelevant in the way society perceived men.

Men of 40 years and above were not only given more societal "room to maneuver", they also appeared less worried about other people's perceptions as they had responsibilities, could show achievements in having children and an income (Berner-Rodoreda et al., 2021b). They could rebuke others for drawing conclusions about their HIV-status and would live the life they perceived right for them rather than succumbing to society's expectations or peer pressure.

> Men like me do not care either; they will be discriminated against or not because we are able to make decision on our own unlike youth, they make decision based on the influence of friends. (MSW with unsuppressed VL, 53 yrs) quoted in (Berner-Rodoreda et al., 2021b)

Three men in their late 40s/early 50s mentioned collecting ARVs whether they were discriminated or not. One 42-year-old man stated that as a married man one does not need a girlfriend (ibid); a 46-year-old man accompanied his sick wife to the hospital. Yet, two younger men in their 20s – one from a community, another one on ART also depicted not caring if others laughed at them and viewed the mocking of others as "not big problems" (MSW in community, 26 yrs).

> A disease is a disease, and medicine is medicine. The only difference is the name and the time of taking it and the place the medicine hits. ARVs are not drugs one can be ashamed of in my case, the way I perceive it. (MSW with unsuppressed VL, 19 yrs-2) interview excerpt quoted in (Berner-Rodoreda et al., 2021b)

The independent-minded men were all men with unsuppressed VLs except for the man who accompanied his wife. While older age seemed to facilitate independence towards societal expectations, the example of the younger men showed that this was not restricted to age. The extent to which an unsuppressed VL played a role in men's independence of thought and action seemed difficult to gauge.

Summarizing the perception of respondent groups presented in 3.1.3.3. and 3.1.3.4. women were given the most elevated position in terms of their HIV and ART-related health-seeking behavior followed by adult men with young men being regarded as least reliable in the use of ART.

3.1.3.5. Expressions of masculinities in health care seeking

In this sub-section I will examine men's general notions of masculinity within the context of health-seeking, a topic, stakeholders in Blantyre commented on with regard to men's preference of buying medicines over the counter or consulting traditional healers and men's dislike of public health facilities. Irrespective of own behavior, all respondent groups perceived men as either making use of over-the counter medicine or not acting on health problems at all in the hope that the problem would disappear. According to male community respondents, some men would be afraid to visit a hospital, others might lack transport. Stakeholders described men as firstly keeping their health problems to themselves – "they don't like to inform the medical practitioners... So, the first reaction is that they are not talking to anyone in most cases" (male stakeholder, health-based-3). Using health facilities would be a last resort which resonates with the majority of male ART clients' own descriptions of how they found out that they were HIV-positive (see 3.1.4.1.). One man in the community spoke about men not wanting to "give away their shine".

> Most men especially married men, when they have a problem of HIV in their family, many men give excuses, namely of going to work or I want to do this, forgetting that we go to the hospital for a short period of time to get treatment, they say they don't want to give away their shine … They don't want to be seen with a sickly face but they want to show that they are really who they are, very strong and still able to do as if they have no problem with their health, in simple terms they hide the truth. (MSW in community, 28 yrs)

MSW were described as consulting a friend or buy traditional or Western medicine but would not want others to know in order not to appear weak or in a negative light.

> I think it is coming from our cultural background where culturally, men are supposed to be superior, they are seen to be above the society and have to be respected. So, they don't want to be associated with anything that is negative about in society. So that's why they don't want to be seen as they are going through problems or whatsoever. Yeah, I think it is a cultural thing. (male stakeholder, church-based-2)

In contrast to men's experience of starting ART late in order not to be seen at a health facility, one of the stakeholders believed that starting ART early would have an appeal to men as they could hide their health problems. MSW on ART and the stakeholder argued in terms of masculinity – delaying ART for not wanting to be noticed with a medical problem and averting a state of poor health by starting ART early so that nobody would notice any difference.

While some men mentioned that others might use herbs or traditional medicine or seek a traditional healer for sexual problems, none of the male community respondents talked about seeing a healer for their problems; some were critical of traditional healers, "today's traditional healers are fake, they are not reliable" (MSW in community, 44 yrs-1) or recommended that one first goes to the hospital and then seeks a traditional healer, if need be. Only one man on ART mentioned seeing a traditional healer for diabetes who could not help him and visiting a herbalist for ulcers when hospital treatment did not lead to any improvements thus trying out all help available.

The five described pathways for men with health problems – sitting it out, buying medicines or herbs, asking a friend for advice, going to hospital, consulting a traditional healer or herbalist – seemed to have all been practiced by men to various degrees and often consecutively when one option did not render the desired outcome as the example above illustrates. Consulting friends was mainly talked about when the medical problem was considered sensitive such as suffering from sexually transmitted infections (see 3.1.5.7.). Except for the man quoted above, men on ART did not provide much information on the role of herbs, herbalists and traditional healers in their lives – one man on ART said he considered taking herbs and decided against it – the issue was mainly talked about by stakeholders who believed that men would also use herbs. The silence on this issue on the part of men could be due to a low relevance for the men interviewed or for associating the interviewers with health personnel and being unsure of the acceptability of traditional healers and traditional medicine.

3.1.3.6 Policies and their perceived impact on communities

In this section I will examine the following HIV-related policies and the need to develop and implement specific policies: Test and Treat, multi-months drug dispensing of ART (MMDD) and annual VL-testing, the HIV Prevention and Management Act, guidelines on alcohol and ART and the felt need by respondents to make policies client-centered and to develop guidelines for MSM service provision:

More than half of the stakeholders mentioned the Test and Treat Policy. This policy was introduced in Malawi in 2016 not as "test and treat" but as "immediate ART" or "start ART as soon as possible" (Ministry of Health, Malawi, 2016, p. 57). Stakeholders perceived this

as a useful policy for linking clients to treatment and care early, as men had been lost to follow-up in the past when told to return for tests or even for receiving test results and counselling. This experience had repercussions on the implementation of Test and Treat with its emphasis on same-day initiation.

> After he is diagnosed HIV-positive, then there is further counselling on HIV and ART… When the client accepts of which the acceptance rate is above 95% anyway, so when he accepts, then we initiate treatment on the same day. According to the national guidelines, it is supposed to be within 7 days. But we do encourage them at least to start immediately because the return rate is usually very low when you let them go. (male stakeholder, NGO-based-2)

The impact of the policy on men did not entirely become clear. Some stakeholders regarded it as beneficial and viewed men's acceptance to start ART as higher than women's, others perceived men as delaying the start of ART.

> Test and treat in men…, it's a good concept when we look at the benefits but you know, a thing that maybe we did not expect and we found it: to settle down to really accept it, to settle down it takes a longer period in men than in women… Some accept it but some say, let me think about it. I will still come back to you. I may not start today. (male stakeholder, health-based-1)

Potential problems by stakeholders were seen in not being accompanied by a guardian thus getting no personal support or not being willing to give up alcohol when feeling strong and in good health. One stakeholder pointed out that the new treatment guidelines caused confusion in the population. People would generally believe that when a health problem was treated too early as in wearing glasses one may do more harm in the long run. The changed message would therefore be difficult to understand.

> So, that has been entrenched in people that you don't need to start treatment because treatment can destroy your immunity and then you will be dependent, treatment dependent. And this time around when you say, "no, when you start quicker, there are more benefits". And to them, you take drugs if you are sick, so the concept of you still need(ing) to take drugs even though you are not sick because that is how HIV is managed better, is still new; it is not in our Chichewa. It's still difficult for health care workers to deliver that one... And I have seen that they meet challenges especially with young people, even the general population, even young people, they don't understand, why should I start treatment?… "Yeah, I'm positive, but I'm not sick. I need not to rush", and they delay and lose this vital time and start too late. (male stakeholder, NGO-based-3)

Being in good health could therefore be a deterrent for men to start ART. "I have met some few patients who have basically denied treatment basing on the fact that they are healthy" (male stakeholder, health-based, 3). While men on ART were usually sick and so started ART straight away or according to the regulations at the time, some found the Test and Treat policy better than the previous policy of waiting until immunity was compromised or until tuberculosis (TB) had been treated.

> I had seen that the waiting was not good as now, when one is diagnosed HIV-positive, one is right away admitted on ART. I see that in the past, a lot of people were dying in the waiting period of the CD4 count. (MSW with suppressed VL, 48 yrs)

The benefits of Test and Treat had also reached men in the communities.

> I would start [ART] right away because I think, what they say is, you maintain your immunity, so I wouldn't risk that I should start to get sick before I can start to take the drugs so I would want to take them immediately. (MSW in community, 31 yrs)

The advantages of the Test and Treat policy were thus seen across all respondent groups, yet the cultural acceptance was pointed out as a possible challenge.

The policy to dispense ARVs for a six months period for those with suppressed VLs and to introduce annual VL tests was implemented from April 2019 (Ministry of Health, Malawi, 2019). In addition to positive reactions from male clients to receiving longer supplies, saving on transport and being able to combine facility visits with work or schooling and being less exposed to stigma (see facility chapter), stakeholders also mentioned the benefit of reduced hospital visits – "so, the six months' supply, it's a motivator" (female stakeholder, health-based-4).

> The current situation is that people will come, they will get their medication after six months and after a year their viral load will be monitored, so it's like within a year one will only visit the facility twice a year, and the rest does his or her own things so I think that is already something positive (male stakeholder, health-based-1)

The benefits of less frequent clinic visits will be explored in 3.1.6.

Despite improvements in the policy environment with Test and Treat, longer ART supplies and more frequent VL tests being implemented, one stakeholder commented on policies not showing enough human-centeredness or at too slow a pace.

> It is also looking at the policy environment, how quick are policies updated or adjusted to respond to the needs of the actual people we want to serve. So, the people shouldn't conform to the policies per se, the policies should understand the needs and try to adapt accordingly. (male stakeholder, NGO-based-3)

This statement related to considerations of informing clients about U=U (undetectable = untransmittable), i.e. that someone with an undetectable VL is not infectious anymore. U=U was not yet part of the treatment guidelines in 2019 (Ministry of Health and Population, Malawi, 2018; Ministry of Health, Malawi, 2019). "It hasn't been promoted, it hasn't been adopted at national level" (male stakeholder, NGO-based-3). Also, ART was still being restricted to health facilities.

> In Malawi, it's still facility... The current policy where we still can't take drugs beyond a clinic apart from the multi-drug dispensing model… but like the community ART groups is not even adopted in Malawi. It's like "no, we can't push them to that end at the moment". (male stakeholder, NGO, 3)

The stakeholder referred to the clinical guidelines of 2018 which unlike the 2016 guidelines mentioned "outreach clinics", yet no other places or venues for offering ART.

> ARVs may be dispensed at MOH-certified static ART clinics and in outreach locations. Outreach clinics must be staffed by certified ART providers. ARVs may not be distributed outside of these settings. (Ministry of Health and Population, Malawi, 2018, p. 56)

This restriction was felt across respondent groups to be a disadvantage in offering ART for men, see chapter on facilities.

Representatives of all respondent groups mentioned the HIV Prevention and Management Act of 2018 (Government of Malawi, 2018) as a catalyst for reducing stigma and discrimination in the communities. "The government put a law that if anyone is found insulting anyone who is HIV-positive, that person is supposed to be arrested or prosecuted for insulting a person" (MSW in community, 48 yrs-1). A stakeholder mentioned that the stigmatizing person would have to pay compensation to the PLHIV: "there is a law, which says if someone annoys you about your HIV-status, you need to sue that person, then that one will need to pay you, I think it's some millions" (male stakeholder, health-based-6). One MSW on ART described a case of unauthorized disclosure leading to arrest.

> R: Some person had actually openly shared information of another person to other people that so and so is suffering from AIDS, and this person was reported to police straight away … He had openly shared it to many people without consent that's why he was arrested.
>
> I: Did this incidence bring any change on how people living with HIV are treated in your community?
>
> R: People do not speak or gossip about those living with HIV, they are afraid to talk of such things now. (MSW with unsuppressed VL, 45 yrs)

The perception of this law and the actual law differed slightly. The Act addresses discrimination and unlawful disclosure, i.e. disclosure without the permission of the PLHIV, see paragraphs 6 and 11 below. While revealing someone's HIV-status would fall under the Act, whether discrimination and stigmatization are distinguished seems less clear. A Government fine would also not directly benefit the wronged party.

> 6. — (1) Discrimination on a basis related to HIV or AIDS is hereby prohibited.
> (2) A person who discriminates contrary to subsection (1) commits an offence and shall be liable, upon conviction to—*(a)* in the case of an individual, a fine of K5,000,000 and imprisonment for five years. (Government of Malawi, 2018, p. 6)
>
> 11.—A person who discloses the HIV status of another person otherwise than as provided for under this Act commits an offence and shall be liable, upon conviction, to—
> *(a)* in the case of an individual, a fine of K5,000,000 (Government of Malawi, 2018, p. 8)

One stakeholder pointed out the limitations of the law and felt it rendered voluntary assisted partner notification (VAPN)[11] difficult as it would tie the hands of health personnel to inform the PLHIV's spouse.

> If they are married, whether they like it or not, they ought to tell their wives and if there is a problem between these married people we plead with them to still bring their wives so we can talk to them because the government also put in place laws to say that if you are found talking and revealing the status of someone that has been diagnosed with HIV it is a case and you really can serve jail. (male stakeholder, health-based-2)

While this health staff worried about working in a grey zone in practicing VAPN, legally, it seemed an unresolved issue from the PLHIV's point of view rather than from the health care worker's perspective where the following exceptions for VAPN were explicitly granted:

[11] the person being tested (index client) is asked to consent to referring his/her partner to HIV testing services or to give permission to health facility staff to anonymously contact the partner for testing.

> (iii) the person living with HIV has refused to notify or consent to the notification of the sexual partner;
> (iv) the health service provider gives the person living with HIV advance notice for a period that is reasonable in the circumstances;
> (v) in the opinion of the health service provider, the person living with HIV is not at risk of serious harm as a consequence of any notification to the sexual partner (Government of Malawi, 2018, p. 8)

Since a PLHIV was under no obligation to disclose the status to anyone according to the Act, the grounds for (iii) seemed less clear – the conflict may therefore be with PLHIV being indirectly forced to disclose their status or having to consent for the health care worker to do so on their behalf. While the interviews showed general awareness of the Act, details did not seem to be known and could lead to unreasonable expectations or groundless fears.

A further unresolved issue was alcohol. It is generally described as a challenge to ART adherence (World Health Organization, 2016). The Malawi clinical ART guidelines specify to probe on alcohol intake if adherence problems occur (Ministry of Health and Population, Malawi, 2018) and recommend developing an action plan with the client. Since policy recommendations remained vague, stakeholder perceptions varied from being strong advocates on the need to forgo alcohol consumption when on ART to the possibility of combining ART with drinking moderately, if it did not interfere with ART adherence. Men on ART's response to alcohol ranged from shunning alcohol to spacing alcohol and ART intake or consuming alcohol anytime they felt like it. One stakeholder expressed the need for clearer guidelines on alcohol consumption and ART.

> Because we hear that there is no risk to combine alcohol and ART. Others, they say, it is not advisable to do so. Others, they will say, people should abstain from alcohol, yah, like that. Others say, they can take a bit of alcohol, not too much, it's okay. So; we need more clear guidelines pertaining to safety of ART, especially since it is men that take alcohol most of the times. (male stakeholder, health-based-3)

Only one stakeholder mentioned men having sex with men (MSM) who may not be comfortable to bring their partner to test as there was not much openness in the country or health sector towards people with different sexual orientations. She included her own initial reactions in her assessment of the national situation and believed that a government policy would improve the treatment of MSM.

> If a man comes to me telling me that "I have been having sex with a fellow man", I think my first impression would be like: "Ah, ah, you are sinning! That is not allowed!" And if that happens, then that man might not be comfortable to go and get the colleague for treatment… But if I could appeal that maybe we should have guidelines that do not infringe the rights of such men, then maybe it could also help us lower the infection drastically because that means, people will come openly for treatment without the fear of being judged or being looked upon as a, as a freak. (female stakeholder, health-based-8)

MSW who may have additional sexual relations with men would also benefit from guidelines and a non-judgmental attitude of health providers. Policies were thus perceived by all respondent groups as having had or likely to have a positive impact on PLHIV – from making free ART available to all who need it irrespective of their level of immunity (CD4 count),

improving ART regimens and providing longer supplies to penalizing stigma and discrimination. Particularly men on ART and stakeholders viewed smaller pills as facilitating treatment; all respondent groups perceived the need for long-lasting agents to replace daily ART and stakeholders felt that targeting men would lead to achieving the three 90s. Outstanding areas where policies were felt to be missing or not yet adopted were MSM, more human-centered approaches, i.e. offering ART where men feel comfortable and introducing the message of undetectable = untransmittable into the HIV guidelines.

3.1.3.7. Synopsis of facilitators and barriers for male ART uptake and retention at the societal level

Table 12 MSW's facilitators and barriers for ART uptake and retention at societal level

Facilitators	Barriers
Community perception of HIV as manageable	Community perception of HIV as end of one's life
Community view of ART as life-prolonging	Negative community notions of ARVs
No or reduced discrimination or stigmatization of PLHIV	Communities excluding PLHIV from activities and mocking and insulting PLHIV
People living openly with HIV	PLHIV experiencing stigma and discrimination
PLHIV able to hide their status because of early treatment and few side-effects	PLHIV hiding their status for fear of being stigmatized
Taking health care seriously including clinic visits	MSW being 'shy' to make use of facilities; seeing health care as women's domain
MSW seen as responsible and caring	MSW being blamed for being HIV-positive or spreading the virus to others, yet all genders judged on life-style if HIV-positive.
Favorable view of older MSW with social standing	Stigmatizing attitude towards younger MSW living with HIV. Younger MSW being influenced by reference groups' and societal expectations
Policies regarding Test and Treat, longer ARV supplies and laws on the protection of PLHIV	Absence of policies for U=U; alcohol guidelines for ART

3.1.4. Men as Individuals

In this sub-chapter I will present findings related to men's individual experiences of HIV testing and ART. These should be understood in the context of how HIV, ART and PLHIV were viewed in Malawi and in the context of societal expectations towards men (3.1.3.). MSW's individual perceptions and experiences included: discovering their HIV-status (3.1.4.1.), MSW's attitude and reaction towards ART with acceptance as a pivotal moment (3.1.4.2.), enablers in terms of hope for a normal life and challenges with daily pill-taking, side-effects, food and the ambiguous role of alcohol (3.1.4.3 – 3.1.4.7). I will end this section with men's understanding of ART which could help or hinder ART compliance (3.1.4.8) and an overview of barriers and facilitators at the intrapersonal level (3.1.4.9).

3.1.4.1. Being diagnosed

Phrased in the passive voice, this heading reflects the testing and health-seeking behavior of male ART clients as depicted in interviews: few men independent of age took an active role to

find out their HIV status; they mostly waited until they could not ignore their health problems any longer before visiting or being taken to a health facility where provider-initiated testing and counselling (PICT) was performed (Berner-Rodoreda et al., 2021b). A typical narrative was being diagnosed when "very sick":

> I used to get sick very often. I have been to the hospital several times but they could not find the problem until one day I got sick and I was admitted at the hospital. This time now, it was discovered that I had TB, and it was this time that they took my blood samples for an HIV test, and I was tested HIV-positive. (MSW on ART, suppressed VL, 39 yrs)

Some tested when feeling "unease" after sexual intercourse. Many sought medical help for their ailment(s) and were offered an HIV-test in the process. Those who talked about "being courageous" to ask for the test did so during or after an illness – their facility visit was thus still linked to the experience of ill health. Stakeholders expressed the same view of men presenting late for HIV-testing. "And most of those who will come, it means, you already see he is bed-ridden, he is actually carried by a wheel-barrow or a motor-bike to come and say: now, let's get tested there" (male stakeholder, NGO-based-1). In terms of masculinities, the behavior can be seen as wanting to maintain the male image of being strong for as long as possible before seeking help. A few men on ART recounted testing voluntarily either with their wife or being inspired through media, a new testing site or donating blood. Conversely, few male community respondents depicted testing because of illness; rather, they tested because they wanted to know their status, some through community or outreach services (Berner-Rodoreda et al., 2021b).

> I did not engage in any sexual activity; I was young then but I felt it was necessary for me to undergo the test… I was 16 or 17 years old. I just wanted to know my status. (MSW in community, 25 yrs-2)

The fear of HIV and the desire to know one's status propelled men in the community to test. Some did so with their wives or because of the wife's HIV status; additional motivations to test related to having HIV-positive parents or needing a medical report (ibid), testing in lieu of a friend who needed post-exposure prophylaxis (PEP), following the father cum doctor's advice to test regularly thus showing the importance that friends and family played especially for young men. Only one man in the community perceived no need for testing as he depicted being faithful to his wife thus seeing promiscuity linked to a positive test result.

Male community respondents juxtaposed their own testing behavior to the mainstream of men. "Many of them wait until they get very sick and then get tested, yet some of us are very open and we were tested in advance before we got sick" (MSW in community, 48 yrs-2). This contrast was even more pronounced for young male community respondents who tested for HIV, yet described young men as generally reluctant to test for fear of testing positive: "we are afraid as we know that we have slept with so many girls and as such we are scared to come for HIV testing as we think that they can find us with HIV there" (MSW in

community, 24 yrs). The pro-active testing behavior of young male community respondents thus stood out.

Male community respondents talked of using health facilities on a regular basis. For one man this included regular health check-ups, good hygiene and a balanced nutrition, others described visiting the health facility for any ailment or for what they regarded as more serious illnesses (diarrhea, malaria) while treating minor illnesses such as headaches with Panadol. Only one man stated his non-use of health facilities. “I get sick but I don’t go to the health facility to say I am feeling this body pain. In short, I have never been sick to the extent of going to the hospital” (MSW in community, 32 yrs). Few male ART clients spoke about their general health behavior; some mentioned how being on ART had changed their health-seeking behavior: “every time I felt something strange, something that was not normal or a headache, I would rush to the hospital to seek assistance to ensure that I am on the right track” (MSW with suppressed VL, 39 yrs). ART could thus also be a catalyst for greater health-consciousness in MSW.

3.1.4.2. The pivotal moment: accepting a positive test-result

MSW on ART described their initial reactions to a positive test result mostly in negative terms: being shocked, angry, sad, worried, frustrated, blaming oneself, having self-pity, a “bitter pill to swallow” (MSW with unsuppressed VL, 53 yrs). Some younger MSW ran out of the hospital in shock and disbelief; others withdrew from friends or decided not to get married thus showing signs of internalized stigma, yet these reactions seemed temporary and internalized stigma appeared rare (Berner-Rodoreda et al., 2021b). The reaction by a man who had not suspected a positive test result showed masculine ideals also embracing fidelity: “I was very sad because I have been faithful all my life and to be found with that burden, I was sad” (MSW with unsuppressed VL, 38 yrs-2). Those accepting an HIV-positive result immediately, had made up their minds as individuals or as a couple beforehand, received counselling or were very sick. Some described how they followed the doctor’s advice, others did not expand on how they came to terms with their infection other than stating that death was the only alternative to taking ART. Age did not play a role for men in accepting their status as the following quotes show:

> If I say I do not want to be taking medication it means I will be cutting my life short. But when I accepted, my decision was to take medication without missing. (MSW with suppressed VL, 55 yrs)

> I have been hearing that someone has hanged himself because he was diagnosed with AIDS but if I had not accepted it, I would have been in the same group. Maybe I should die because of other things, not hanging myself because they have found me HIV-positive; the best thing to do is to be taking the drugs. (MSW with unsuppressed VL, 24 yrs-1)

For some, the acceptance process and uptake of ART took time; they did not act on their positive result for a number of years out of fear that relatives or friends may discover their

HIV-status, out of ignorance where to go or assuming prohibitive costs for obtaining ARVs. A young man described his reaction of delaying as "childish" or driven by a desire that the problem would eventually disappear. Some waited for many years until their health declined. A man who was first diagnosed when donating blood started ART four years later.

> I didn't take it well, I had so many questions like: how did I contract the virus? All my life I thought I was perfect, but after some time, I accepted it and moved on but still I did not tell anyone up until the time I got really sick... I was very sick and my immunity had decreased as such I had to start the treatment right away. (MSW with suppressed VL, 43 yrs)

For young men who had tested positive as children there was often a critical phase when they realized that they were taking ART. Some were angry or blamed the parents when they found out their status and needed advice to accept their status (see 3.1.5.2. and 3.1.6.3).

Accepting one's positive HIV-status was seen as an important step for ART adherence across respondent groups – it was a particularly strong point by MSW with a suppressed VL. Some MSW on ART described it as a pivotal moment that "changed everything" (MSW with suppressed VL, 39 yrs), "mapped the way forward" (MSW with suppressed VL, 30 yrs) and led to "a new life altogether" (MSW with unsuppressed VL, 31 yrs-2). Acceptance for some provided a new perspective and new work possibilities:

> But after getting tested, I didn't think I would have a long life at first because I hadn't fully accepted my situation. But two to three years down the line I had some money and enrolled in a driving school, which surprised a lot of people who thought HIV-positive people would not do any work and have no future. But I told them that no one knows when they will die. And since that time, I am still able to work. (MSW with suppressed VL, 51 yrs)

3.1.4.3. From expectations and fears to seeing ART benefits

Men's attitudes and expectations towards ART varied. Among those expressing no fear of ART, men with suppressed VLs dominated, while others – men with suppressed and unsuppressed VLs - showed a combination of a positive mindset and fears.

Men's motivation to start ART, irrespective of age was to have a long life and regain strength and health as many had been very sick when they were diagnosed. A few men - mostly men who came to suppress their VLs - were hoping to be cured of HIV. "What I expect until now is to be relieved of this disease" (MSW with suppressed VL, 29 yrs). "I was hoping that one day I would stop completely taking ARVs" (MSW with unsuppressed VL, 26 yrs). For some, this hope incentivized being consistent in taking ART. The expectation to be able to work again and provide for the family and children were further motivations and important masculine considerations.

Knowing people on ART – positive or negative role-models – a relative, wealthy people, managers, someone in the community, people in the waiting area of the clinic, or the first HIV-positive woman in Malawi still alive on ART also acted as motivators for MSW on ART. Mostly there was no direct relationship with the role model, even if he or she was a relative. Men were often observing others and noticing that their health improved.

> I had the feeling that most people do take ARVs; some are managers in companies, what would stop me from taking the ARVs? (MSW with suppressed VL, 19 yrs-1)

A brother, a boss or someone in the community who shunned ART and died also acted as motivators for men to take ART as they had witnessed the detrimental effects of people refusing ART. “My brother died because he did not accept the HIV-positive results due to shyness. He thought that his friends might know that he is HIV-positive and laugh at him. So, he refused to be taking the pills” (MSW with unsuppressed VL, 42 yrs).

Yet men also expressed a sense of gloom and uncertainty about their future and health. Some thought their life had come to an end. Having to embark on a life-time of pill-taking was seen as burdensome, painful, and “deflating; it felt like a punishment” (MSW with suppressed VL, 42 yrs). Initial fears of younger men below the age of 34 did not differ much between those who came to suppress their viral loads and those who did not. Younger MSW on ART expressed the fear of being mocked and seen by others, suffering from side-effects, having to swallow a big pill, not being able to work or having little energy. “I actually had so many fears because I had heard that ARVs made others swell, others became mad and whatsoever things. It was therefore scary and difficult for me as I thought that I might get mad” (MSW with unsuppressed VL, 29 yrs-1). Men in the communities were also worried about going mad or hallucinating, developing sores, enlarged breasts or humps or having an increased appetite. In addition to daily pill-taking, side-effects and perceived stigma, stakeholders named men’s busy lifestyles, alcohol intake, a desire to be healed and men’s attitude towards ART and health facilities as a hindrance to ART uptake and retention.

Once MSW started ART, they described the benefits as encouraging: seeing the pain recede and one’s health improve, gaining strength, not falling sick frequently, being able to socialize again, regaining weight, energy and happiness, being able to engage in sexual intercourse, not being identified as someone living with HIV and noticing that the anticipated detrimental effects did not materialize. “My health improved and I was even better. I could work as normal, and no one would believe that I am on ART. I would say, I became happy again” (MSW with unsuppressed VL, 45 yrs). Not being recognizable as a PLHIV was an important benefit for MSW. Stakeholders viewed health improvements, the knowledge and experience of the effectiveness of ART, men’s desire to have children and not to infect the wife as further potential enablers, yet the last “enabler” seemed unknown to MSW (3.1.6.6.).

MSW on ART also experienced challenges such as remembering to take the pills daily, having to swallow a big pill, to travel with the pills, cope with side-effects, poverty, and the struggle to have sufficient and balanced food or position themselves vis-à-vis alcohol intake. These will be expanded upon in sections 3.2.2.4. – 3.2.2.7. ART enablers and challenges cut across age groups and VLS and extended to men in the community, four of whom also

happened to be HIV-positive and on ART. ART became the only way to improve health and to live a "normal" life with little choice but to face the challenges that came with daily pill-taking.

3.1.4.4. "Because there is no other option, we have to take this medication anyway"

Across respondent groups, adherence was seen as a challenge in terms of pill size and pill burden, treatment fatigue, time consistency and remembering to take the pills especially when busy. All respondent groups perceived alcohol as an adherence challenge which I will examine in more detail in 3.1.4.7. In addition, stakeholders identified a poor understanding of an undetectable VL and feeling healthy as potential adherence barriers – this phenomenon was reported by two men with unsuppressed VLs who temporarily stopped taking ART.

For MSW on ART with suppressed and unsuppressed VLs, ARVs were often not the only medication they had to take; a number of men also suffered from comorbidities such as TB, others mentioned cancer or diabetes in addition to HIV and had to take a pill cocktail. Many also mentioned taking the antibiotic cotrimoxazole (brand name: Bactrim) to accompany their ART regimen.

> A tablet that will prevent me from catching TB, a tablet for numbness and Bactrim, all these are for morning and these I take together with a certain one tablet. Besides these, there's one big tablet for the evening only. (MSW with suppressed VL, 29 yrs)

While some men on ART complained about "the big tablet", the size of the pills depended on the particular ART regimen the client had to take. MSW co-infected with TB felt that ARVs were smaller and more manageable than the TB medication; many also appreciated the introduction of a new regimen (13A) with smaller tablets.

> The tablets at that time were bigger than the ones we receive now, the current tablets [ARVs] are similar to Bactrim in size... What was happening was that I was failing to swallow the tablet… It could not pass through the throat. (MSW with unsuppressed VL, 24 yrs-1)

If ARVs had to be taken with other pills, the pill burden may lead men to become selective in taking pills as this stakeholder reported:

> Yes, issues like pill-burden, especially for those that have to take the ARVs that have more than one tablet and then those who have to take cotrimoxazole and pyridoxine and isoniazid, that's a lot of pills. That's a pill burden. So, and to take that every day for the rest of your life, it's even more of a burden. So, we have men that actually can chose which pill to take on a particular day and even when to take the pills. So maybe on Monday, and then they skip Tuesday, Wednesday, they take on Thursday. They just make their own personal decisions. And then they come to the facility with a lot of pills and when we ask, that's when they tell us: "Ah, I thought this one wasn't necessary, so I skipped." (female stakeholder, health-based-8)

Irrespective of VLS and age, some MSW found daily pill-taking burdensome and leading to treatment fatigue with one young man complaining that "the throat tends to get bored and I lose appetite to take in some ARVs. I therefore tend to miss about a day" (MSW with unsuppressed VL, 29 yrs-2). An older man with a suppressed VL commented that "it's a burden on its own taking medication every day for the rest of your life, it's not an easy thing,

but because there is no other option, we have to take this medication anyway" (MSW with suppressed VL, 46 yrs). While some men with suppressed VLs depicted more adherence problems in the past, a young man described how he had become less consistent over time showing that adherence could improve or decline over time.

> It was also because taking ARVs was a new thing altogether for me such that I was scared of missing medication and I regarded ARVs as my very life then. Honestly speaking, now I am now used to medicine such that if I have forgotten to take medication, I convince myself that tomorrow is another day and I will still take the medication the following day. (MSW with unsuppressed VL, 29 yrs-1)

MSW on ART depicted additional problems in working away from home or travelling and missing the exact time for the pills by hiding the pills from others thus underscoring how stigma could affect adherence. MSW's self-reported adherence for those suppressing and not suppressing their VLs differed more in terms of the extent rather than the nature of the problem. While more men with an unsuppressed VL talked about forgetting to take the pills occasionally, travelling (abroad), unexpected delays or longer job postings than planned and having insufficient supplies, men with a suppressed VL mentioned similar scenarios:

> Aaaah, sometimes I was skipping medication but I would not go beyond two days. I would miss one day when I have travelled and that meant that day I have skipped, that's all… I therefore just leave my medication home which makes me fail to take medication whilst there. (MSW with suppressed VL, 26 yrs-1)

> Maybe the main problem is that I don't take the drugs with me whenever I am going somewhere. For example, there was a day I went to collect wood for burning bricks, so I went there in good time so that I can come early but the car broke down, so that was the only day that I missed my drugs because we were leaving that site at around 11pm. So, when I came home, I felt like I should not take the drugs because maybe I would confuse things. So, these are the main challenges; you plan to get home at the right time but you do meet unforeseeable problems. (MSW with unsuppressed VL, 32 yrs)

Inconsistent timing was another problem raised by MSW with suppressed and unsuppressed VLs: "I have missed in terms of minutes depending on the time they gave me. I have never gone beyond an hour" (MSW with suppressed VL, 34 yrs). "I take the pills at 6 o'clock in the evening or may be if I delay to take the pills because of being busy at work or coming late from work I do take them at 6:30, in the same evening" (MSW with unsuppressed VL, 24 yrs-1). Both groups thus showed similar behavior.

MSW's adherence challenges thus ranged from time inconsistency to skipping ART either occasionally or for a longer period, see *table 13*. Both young and older men mentioned stigma considerations, work commitments and working away from home, being drunk, forgetting the pills and unexpected travel as their main reasons for being inconsistent in taking ART – all of which are largely linked to anticipated stigma or being busy.

Table 13 MSW's rationale for inconsistency and ART interruptions

	Inconsistent timing for taking ART	Skipping ART (once or up to 2 or 3 days)	Longer ART interruptions (from 10 days to 1 year)
Rationale of younger and older men	• **Not wanting to be seen taking ART** • **Returning late from work**	• **Drinking/being drunk and forgetting** • **Short or unexpected travel** • **Forgetting** • **Being busy/at work**	• **Not taking enough ARVs for working abroad**
MSW < 30 yrs	• Time clash with school/work • Forgetting time when drinking alcohol • Taking ART earlier when travelling	• Being in a rush • Being sick • Desire to improve sexual performance • „throat gets bored“	• Family did not collect ARVs • Running out of regular multi-months ART supplies while working abroad • Staying in village without ART supplies • Feeling depressed
MSW >=30 yrs	• Forgetting ARVs and taking them later	• Having to take ARVs several times/day • Having to work overtime • Forgetting meds at home when going off to work • Not wanting to take ART in front of colleagues	• Frustrated about perceived „bad“ VL • feeling good and healthy, seeing no need to continue • wrong advice by guardian

The perception by a young man on ART that “when younger men have been found to have a very low viral load, they tend to stop taking medication” (MSW with unsuppressed VL, 18 yrs) may well be true, but the experiences shared by MSW on ART showed men in their late 30s and 40s taking a treatment holiday when they felt healthy and strong again rather than younger men. Treatment interruptions linked to social aspects will be examined in more detail in 3.1.5.. Many MSW overcame their adherence challenges and depicted their adherence behavior as being mostly consistent irrespective of VL-status. After taking ART late or forgetting it altogether, some MSW with unsuppressed VLs changed their behavior and took their pills to work in case they had to work overtime; linking their pill-taking to a daily work assignment such as sending a report every morning or a radio program were further strategies to be consistent. “I have a tendency of listening to za m’maboma. So, when it is 9 o’clock I take medication. I set it at that time” (MSW with unsuppressed VL, 38 years). Other men on ART had developed their own adherence strategies such as putting the ARVs in their shoe or on a stool to be reminded the next morning, filling in a chart, setting an alarm or depositing ART bottles in various places. Some talked about pill-taking becoming a routine like picking up their cell-phone – something they would not forget. The experience of having been sick before starting ART also acted as an incentive for good adherence.

> I personally would not forget taking the medication, considering the pain and the challenges I had met as I had been sick. Of course, being human you can sometimes forget to take your medication but it is a very rare occurrence for me. What I had set in place is that I have one bottle at work, one I move with when I have travelled and the other, I leave at home. If I have forgotten to drink my medication at home, I take those I have at work. If I have travelled, I take those I travel with. (MSW with suppressed VL, 48 yrs)

Of the eight MSW who said they never missed any pills, six had unsuppressed VLs and five were above 40 years of age. “I have never missed any pills or even missed the time, it’s exactly

6 o'clock. Even if I am on the road, I always try to do so the right time because I set it up" (MSW with unsuppressed VL, 46 yrs). The puzzling phenomenon of men with suppressed and unsuppressed VLs maintaining that they take ART consistently will be revisited (see 3.1.6.8.).

3.1.4.5. Coping with side-effects

Side-effects were a concern for all respondent groups, yet to a lesser degree for stakeholders who saw them as "rare", "not a big problem" or temporary. MSW on ART experienced side-effects such as sores, swellings of legs and breasts, dizziness, numbness, general body pains, weakness, weight drop, stomach- and headaches, fever, nausea or nightmares. "I was dreaming scary things and inappropriate things such that I was blaming the medication" (MSW with unsuppressed VL, 29 yrs-2). For most men who suppressed their viral load, side-effects were temporary. Clients were told to persevere and the side-effects would gradually disappear or they were given medication to treat the symptoms or were asked to drink more water. Those who experienced body swellings such as gynecomastia, sores or weight loss usually had their ART regimen changed, yet some stakeholders saw the danger of male clients such as fishermen stopping treatment if they experienced gynecomastia. They "will just keep on withdrawing from working without knowing that they can report to the health facility" (male stakeholder, health-based-3). Some MSW with poor VLS mentioned additional side-effects such as depression:

> In my case, the biggest challenge has been depression. You are not happy that you are HIV-positive and you are receiving ARVs, it is not possible to be happy and sometimes you wish you could just stop taking them, sometimes you are just bored and these are the kind of things that happen. (MSW with unsuppressed VL, 26 yrs)

Whether depression was caused by the ARVs or resulted from an HIV-positive status and the general circumstances surrounding the infection did not always become clear. A young MSW saw his depression due to being fired from work where he had been forced to reveal that he was HIV-positive and then felt "lazy" to take the treatment (MSW with unsuppressed VL, 29 yrs-1).

Persistent side-effects such as sleepiness, feeling drunk when taking ARVs on an empty stomach, body pains that felt like malaria, dizziness and headaches in the morning were mainly reported by MSW with unsuppressed VLs and could affect their daily lives and work.

> Whenever I found that I was feeling dizzy a lot, I could take a lot of water and when my heart starts beating fast, you are supposed to have water and take about 1 liter or 2 liters. It works but the problem is that performance decreases that time because I am in the production department. If I was producing 20 (items mentioned), it means I will be producing (items mentioned) so that was my fear so I thought of coming back to the hospital. When I came, they told me that they cannot change right now. (MSW with unsuppressed VL, 38 yrs-1)

Side-effects were not restricted to ARVs – some experienced side-effects for other medication such as cotrimoxazole and were advised to forgo the antibiotic. "Soon after I stopped, surprisingly, I was fine again. The doctor further indicated to me that I am not the only one

who has such bad experience with Bactrim" (MSW with suppressed VL, 46 yrs). While many MSW on ART reported coping with the side-effects as they got used to the pills, for those with persistent problems it was a matter of persevering, taking measures to counteract the side-effects or asking to have their ART regimens changed which necessitated informing health staff about the problem (see 3.1.6.5.).

3.1.4.6. Food concerns accompanying ART

Some men in the communities felt that lack of food would make it very difficult to take ART, and MSW on ART complained about feeling week or intoxicated: "when you take the medication without taking food, your body acts as if you have taken alcohol" (MSW with unsuppressed VL, 31 yrs-1). Some MSW expressed doubts about the effectiveness of ART if they had to take it on an empty stomach: "if you're not eating enough, the medication cannot work in your body (MSW with suppressed VL, 26 yrs-1).

Men starting ART were grateful for food support, which some clients received through NGOs after ART initiation. For some it seemed a struggle to survive and to have a balanced diet – particularly younger men growing up with relatives mentioned the challenge of a balanced diet or skipping meals irrespective of VL status.

> One thing I don't like about taking treatment is that, I was told that once you start treatment you have to make sure that you are eating good food properly, that it is balanced type of food, so I do face those challenges like I have taken my drugs in the morning but did not eat anything till around 3 o'clock in the afternoon yet I have taken drugs but this is so because of the challenges we face at home, like lack of financial support… Because of the strength of the drugs I feel weak whenever I have taken drugs without food, as a result you cannot do any work and you also experience unexpected sleep. (MSW with unsuppressed VL, 24 yrs-2)

By contrast, only one stakeholder raised the issue of food as a problem or potential problem for men in the Malawian context. Stakeholders thus did not seem to attach much importance to food intake.

> Some men, it's because they don't have enough food. In those years maybe it [food supplement] was only maybe meant for those who are just starting but we shouldn't assume that everyone is financially stable, so it is like I don't have food, why should I go and take medication? (male stakeholder, church-based-1)

For male ART clients, food concerns were connected to poverty and a lack of food seen as impacting on the effectiveness of ART or enhancing side-effects. I will revert to food considerations in connection with men's ideas of improved ART services (3.1.6.9).

3.1.4.7. Ambiguities surrounding alcohol intake and ART

The majority of stakeholders viewed alcohol intake as problematic for adherence as people would likely forget to take their pills, and many MSW both with suppressed and unsuppressed VLs reported giving up alcohol before or soon after starting ART.

> I stopped drinking beer when I started receiving the ARVs but it was after a month later than starting treatment… Another thing that made me to stop drinking beer is that there was a

> day that I was drunk and I forgot to take my pills. I just slept and then woke up in the morning, then I said: aaah, I did not take my pills yesterday. (MSW with unsuppressed VL, 24 yrs-1)

Since giving up alcohol was regarded difficult, some stakeholders as well as men with suppressed and unsuppressed VLs felt that drinking alcohol could be combined with taking ART in the morning.

> The ARVs we were taking in the evening then were very hard as going to drink alcohol you drink in the evening and the medication was also taken in the evening, it really was a hard time and a perilous time for me. On the other hand, these new ARVs which we take in the morning are easier to adhere to even with alcohol because by then the alcohol would have been finished in your body system and you would vividly remember to take your medication. (MSW with suppressed VL, 48 yrs)

By contrast, a young man with an unsuppressed VL felt that the ARVs in the morning were difficult to remember when one had taken alcohol the night before. Some MSW did not have specific times of drinking alcohol. MSW who consumed alcohol stated that it did not affect their adherence, yet conceded that one may forget to take ART occasionally.

> R: I drink at any time depending on the presence of alcohol so I do not really have a specific time but I remember to still take my medication at a specific time.
> I: When you take alcohol do you still drink ARVs?
> R: Yes, and of course missing medication is inevitable sometimes. (MSW with unsuppressed VL, 29 yrs-2)

While not all men on ART talked about their own alcohol consumption, for those who did, no clear age-related or viral load-related patterns emerged. For men with suppressed and unsuppressed VLs the number of men who depicted not drinking alcohol or having given up drinking exceeded those drinking alcohol regularly. Some maintained that one should not mix alcohol and ART, yet it became unclear to what extent this mirrored their own practice or depicted a norm they theoretically endorsed. While men on ART were generally advised not to drink or to reduce alcohol in order not to compromise adherence, some men had found that spacing alcohol consumption and ART intake worked for them.

3.1.4.8. Men's Understanding of ART

MSW on ART knew that ARVs had to be taken for life and at the same time each day in order to work effectively against the virus. While none of the MSW on ART mentioned the names of the ARVs they were taking and spoke about "pills", "tablets" or "beans" instead or referred to the color of the ARV container or "bottle", a 19-year old with an unsuppressed VL and a 48-year old man with a suppressed VL mentioned the name of their current ART regimen: 13A. Both had received secondary education like the majority of MSW on ART. Some stakeholders felt that while general knowledge existed with regard to ART there was a more fundamental issue with men and the understanding of treatment issues. "Men pretend to know and, I don't think, I now doubt whether they really know a lot about treatment. They pretend to know,

they think they know a lot" (male stakeholder, NGO-based-3). This expressed itself in uncertainties about the benefits of ART in terms of preventing the onset of AIDS.

> R: What I fear the most when I think about this pandemic is the doctor also asked me when he was teaching us about the AIDS pandemic. He said when we talk about AIDS, we are talking about a combination of a lot of different diseases that come all at once. So, I was keeping all the information in my head. He continued to say that but when one is following their treatment routine as advised by the hospital, it is found that the diseases are killed one by one and when it's time for one to die, they may die with a simple disease like malaria.
>
> I: So where is your fear?
>
> R: My fear comes when I think about all the different diseases coming at one go. I don't really know what I will do if that happens. (MSW with suppressed VL, 29 yrs)

This quote illustrates that while the male client was informed that by taking ART he would be spared from suffering AIDS-defining illnesses, he may not have fully understood the message as he still believed that he would suffer from AIDS in the future; yet no clarification was sought, and he was therefore left with his fears. Counter-evidence to men not enquiring further when they had not fully understood an issue was found in a man who explored the option of a blood transfusion to rid his body of the virus.

> So, I had asked the doctor early that time, to say that people donate blood to others, was there any other way that my infected blood could be replaced with blood that does not have HIV so that I should be negative again, the doctors told me it was not possible. They enlightened me that the HIV virus is not just found in blood but rather in other body fluids and through this insight it also struck me to say that, indeed when we are having sex, it is not the blood we transfer but rather fluids. This therefore meant to me that if I wanted a replacement of my infected blood, I should also have a replacement of bodily fluids including sperms which really seemed impossible to me. These insights therefore helped me realize that I was in for that HIV-positive status and the only thing I could help myself out with, was taking my medication committedly, which I had embarked on at a much earlier stage. (MSW with suppressed VL, 39 yrs)

Both men had a suppressed VL, yet while the younger man was left with his fears, the 39-year old man had gained insight into why he needed to take ART diligently.

The majority of men had experienced at least one if not several changes of ARVs and ARV regimens due to side-effects, stopping and starting ART and high VLs. Some depicted ARVs changing from a white to a blue or a blue to a yellow bottle or from taking them twice a day to once a day or the timing (evening/morning) being changed with a new regimen. Some, irrespective of age or VL status, did not understand why they were collecting different ARVs: "They did not explain; I just realized that they had changed when I had gone at the ARVs receiving place" (MSW with unsuppressed VL, 44 yrs) – few men seemed to enquire about the reason for the change, if they had not been informed about it.

Most men depicted their VL as "low"/"okay" or "high" and demonstrated a general understanding of what VL meant, which for many was an indicator for gauging adherence and a motivation for greater commitment in taking ART: "It helps me understand the quantity of virus in my body and guides me accordingly in terms of taking drugs consistently, the less the

level the better" (MSW with unsuppressed VL, 50 yrs); some provided detailed answers which also included the possibility of not being time-compliant or experiencing resistance as further reasons for a high VL:

> When the virus has increased in your body, it is because you are properly taking the medication but the medication is just not working, or you are completely not taking the medication properly or you take the medication properly but not on fixed recommended times. (MSW with unsuppressed VL, 19 yrs-1)

Younger men showed a more nuanced understanding of VL and men above 34 years more unfamiliarity with the concept of VL. Four out of the 39 interviewed MSW on ART provided their exact VL count, three of them being younger than 34 years. Some men on ART irrespective of VL status were not sure about the concept of VL, the number of times they were tested and what exactly VL measured.

> I: How many times have they tested you for viral load?
> R: Many times, maybe about thirty something times… They had found that there were sixty something viruses.
> I: Have they ever tested you for viral load ever since you came here?
> R: No. (MSW with unsuppressed VL, 31 yrs-1)

The quote shows that the reason for performing blood tests was not clear to some men. A number of them seemed to confuse VL tests with CD4 or other blood tests; some understood VL in terms of measuring immunity rather than the concentration of viruses. Men's generally report reluctance to seek clarification seems to have left some in the dark of ART benefits or the reasons for taking a particular ART regimen and highlighted the importance of communication. As the understanding of VL had repercussions for men's social and sexual lives and health behavior as will be shown, I will explore the communication of VL by health personnel and the reception by MSW in 3.2.4.6..

3.1.4.9. Synopsis of facilitators and barriers at individual level

The table below summarizes the findings at men's individual level in terms of facilitators and barriers for uptake and retention of ART.

Table 14 MSW's facilitators and barriers for ART uptake and retention at individual level

Facilitators	Barriers
Testing when sick – no choice but to start ART	Keeping up appearance of being strong
Wanting to know status (men in community)	Daily taking of ARVs as a burden
Hope for improved health and strength	Treatment fatigue
Positive and negative role models as incentives	Side-effects, if persistent or visible
Positive experience on ART: weight gain, health restored, able to work	Depression and self-stigma
Personal strategies to remember pill-taking	Pill burden and pill size
Able to combine alcohol with ART	Taking alcohol and forgetting to take ARVs
Understanding benefits of ART and VLS	Partial knowledge of ART and VLS
	Insufficient food intake
Acceptance of status	Feeling "normal" or healed and stopping ART

3.1.5. The social dimension of taking ART

In this sub-chapter I will explore the importance of MSW's reference groups for taking ART spanning the process from testing to retention and the role family, partner, friends, colleagues and neighbors played for MSW on ART. I will start by examining the social dimension of HIV-testing, the particular situation of MSW growing up with HIV and MSW's choice and experience of a guardian (3.1.5.1.- 3.1.5.3), followed by trust and disclosure of one's HIV-status to one's reference groups and their reactions in terms of encouragement and support or discrimination (3.1.5.4 – 3.1.5.5.). I will also examine the importance of serodiscordance and concordance for adherence (3.1.5.6.) and the role of socializing for ART adherence (3.1.5.7.) Taking ART also led to different experiences of sexual behavior (3.1.5.8.). I will finish this sub-chapter by providing a synopsis of the findings for the social enablers and barriers of taking ART (3.1.5.9.).

3.1.5.1. The importance of MSW's reference groups for testing

In the previous chapter I looked at men's individual facilitators and barriers for testing, yet testing clearly had a social dimension for MSW who may not have garnered the courage to test if the family had not intervened. Some stakeholders mentioned wives playing an important role for men in testing for HIV through ANC or VAPN. Yet, few men on ART talked about testing with their wives or because the wife had been diagnosed HIV-positive; rather, men on ART and mostly men with unsuppressed VLs were taken by relatives to test for HIV when their health deteriorated. "I was so sick at that point in time and my sister had taken me to the hospital" (MSW with unsuppressed VL, 29 yrs-2). This also applied to older MSW and showed HIV-testing as a last resort:

> That time I was not feeling fine. I had severe headache, my legs were aching. I could not see clearly nor hear properly. I was using pain killers but the painkillers did not work. One day, things got even worse. I failed to sleep. I then called my brother who came and picked me to go to the hospital (MSW with unsuppressed VL, 45 yrs)

MSW seemed to prefer blood relations – a brother, sister or mother – to accompany them to the clinic for testing even when they were adults.

> R: I was with my mother and my brother.
> I: Do you mean your wife or?
> R: My mother.
> I: How old were you by then if you can remember?
> R: It should be, that was 2011. It should be 31. (MSW with unsuppressed VL, 38 yrs-1)

For young men the possibility of testing positive and possibly being mocked or ridiculed acted as a testing deterrent. "Young people fear of being known by friends, that in case they are found to be HIV-positive their friends might start discriminating them and stigmatizing them" (MSW with suppressed VL, 19 yrs-1).

Few men on ART and men in the community seemed to test because a friend or colleague had recommended it. One young man in the community, however, recounted testing for a friend who frequently needed post-exposure prophylaxis, so he volunteered to test and give him the pills showing the extent to which young men could rely on each other in their friendships.

Many MSW in the community and MSW on ART with suppressed and unsuppressed VLs encouraged family, friends and others to test. One man had devised his own strategy out of a concern for the health of others:

> I even spent my money paying those who were testing for HIV at that time in the bottle stores. I was telling them that "I will buy you beer but first go to get tested"… I want them to have a very healthy life, yes, they have to love their life… when I started encouraging people to go for testing, a number of people have come to my house saying, "do you remember that day you told me to go for testing as if you were drunk? That message helped me because now I am taking ARVs and my life is good now." So, I discovered that my advice was not in vain. If three or four people give feedback, it means my advice was not in vain, it really worked. (MSW in community, 48 yrs-2)

Some men thus played a catalytic role for others in the community to test. MSW on ART also accompanied their friends or community members to test for HIV and took part in the testing themselves. Those who set an example for others included men with suppressed and unsuppressed VLs.

> There was a mobile clinic that visited, they came by car… Luckily, they found me playing football and they were testing blood. But there were some boys who were reluctant to get tested but I encouraged them. There were about five or six boys that I told that we should go get tested. We went and got tested, though I knew why I was going there, it was only a way of encouraging my friends because they really didn't know their status. So, we agreed and we were tested. (MSW with unsuppressed VL, 39 yrs)

Yet men in the community also talked about the pitfalls of unsolicited advice for friends:

> but for me to tell my friend to go for an HIV test, it is very likely that a fight can erupt. He will be asking questions for me to explain what has made me suggest that. The reaction that can come out of that can be chaotic. I can even lose the friendship. "How do you know that I am sick and should have an HIV test?" Do you think I don't know where the hospital is? How can I respond to such questions? (MSW in community, 44 yrs-1)

Both MSW with suppressed and unsuppressed VLs experienced direct encouragement and support from family members to test for HIV – many when they were sick. While many MSW subsequently inspired others to test, the fear of testing positive was seen as a deterrent in terms of masculinity and stigma issues (see 3.1.3.6).

3.1.5.2. The special case of MSW born with HIV: dependence on family members

MSW who had been infected perinatally had to fully rely on parents, grandparents and other relatives to take them to the clinic for testing and treatment and often had no memory of being tested and put on ART if this occurred when they were toddlers. "I got it from my mother in that way I cannot know because it was my mum who brought me here at the hospital to start medication when I was young" (MSW with suppressed VL, 18 yrs). Some young MSW

with suppressed and unsuppressed VLs recounted traumatic childhood experiences, even losing one or both parents, being seriously sick and taken to hospital by relatives, spending extended time periods at the hospital – from one month to one year – or having to stop schooling as the fees could not be paid any longer. The traumatic experiences were similar for MSW with suppressed and unsuppressed VLs. Some talked about it as a matter of fact: "My father died when I was one week old, while mother died when I was 13 years. She died of AIDS. I started staying with my grandmother when my mother died" (MSW with suppressed VL, 19 yrs-2). Others expressed indignation: "I used to be in the hospital time and again…I was very young at that time and they did not tell me the truth about the results but instead they told me that I was suffering from TB" (MSW with unsuppressed VL, 21 yrs). The resulting conflict with the parents for not being told the truth was more pronounced in young MSW with unsuppressed VLs. "I started blaming my parents for it, and the problem is my parents had never explained to me how that had come about" (MSW with unsuppressed VL, 18 yrs). Some felt their life had been based on lies and confronted the parent, often the mother was mentioned, about it:

> So, when I found out, I went home and I was very angry. And I asked my mother, "What are these drugs for?" Then she said, "This is treatment for TB, as I told you already." Then I said, "No, you are lacking the truth, these drugs are not for TB, you lied to me." So, she said, "I did that deliberately because you were very young at that time so I was protecting you because you would have been telling people anyhow." (MSW with unsuppressed VL, 21 yrs)

In not knowing how and when to tell their son the truth, parents wanted to shield him from becoming stigmatized, yet in not being told the truth, young men had to rely on other sources of information – either the internet or health facility staff. A stakeholder recounted how the anger in teenagers could affect adherence and be costly for the parents who did not disclose to the child when he was young.

> We had an incident whereby a teen had to be paid by the parents just to take ART because the parents did not disclose at a good age. So, they reached a point where they owed the teen about 100,000 Kwacha [>100€] just for the privilege of taking ART, so those are the challenges we face. They are still angry. If you knew you were infected, why did you give birth to me? You have given me a lifetime of misery. So, that's the perception our teens have. (female stakeholder, health-based-8)

Being diagnosed with HIV at a young age made young ART clients heavily reliant on the family for treatment access. One young MSW recounted how the parents' divorce led to a treatment gap of an entire year and the suffering he had to endure as a consequence of not being looked after medically.

> I started treatment such that my life is now okay but recently my parents divorced and I was staying with my step mother. I was not taking medication because my father was not collecting drugs for me. I got sick for almost a year, it looked like asthma but it was not but after conducting tests at the hospital they diagnosed me with viral warts. They were on the throat, that was making it difficult for me to breathe so I was admitted at [name of a hospital]. When my father died, I went back to my biological mother. Then I started the treatment again but after getting well, that was after a year. (MSW with suppressed VL, 18 yrs)

For young MSW who were infected vertically, a critical point in time was thus their own discovery of their HIV-status and the interaction with parents or clinic staff.

3.1.5.3. Blood is thicker than water: MSW's choice and experience of a treatment supporter

The Malawi ART program uses guardians or treatment supporters for reminding and encouraging clients to take ART. Stakeholders explained, however, that not every man had a guardian, especially if "they are strong enough that they can get to the hospital on their own, they don't want to have a guardian, they don't" (male stakeholder, church-based-2). Health personnel described having a guardian as a requirement only for those under 18 years of age and a recommendation for those not suppressing their VL.

Since many MSW in the qualitative sample were very sick or under 18 when they started ART, many had a guardian. They primarily chose direct or extended family members as guardians (mother, brother, sister, grandmother, grandfather, uncle, in-law); only two mentioned the wife being the guardian, and one man had a guardian assigned to him by an NGO. MSW seemed to prefer guardians to be blood relations. Some depicted the guardian as encouraging and supportive, especially when being confronted with a positive test-result or in the initial stage of getting used to the ARVs. The following quotes refer to the sister as guardian and show her crucial role in seeing the brother through the ART initiation phase. One young man gagged on the tablet: "I vomited it and my sister encouraged me to take another tablet" (MSW with unsuppressed VL, 24 yrs-1). The other could not cope with the news:

> R: The first day that I had learnt that I was HIV-positive, I had run away and had left my clinical book at the hospital.
>
> I: So, you had left her at the hospital?
>
> R: Yes, I had left the guardian and then she [my sister] came back to convince me to go back to the hospital and had re-located my clinical book. (MSW with unsuppressed VL, 29 yrs-2)

Stakeholders viewed a guardian as helpful in informing health personnel of the client's adherence, yet they conceded that the guardian may not always be able to monitor the client.

> …currently we rely on the guardian to say: "Okay, ah, this client is taking medication correctly." But you never know, the guardian might not be there always. Yah, we have seen people dying in the hospital only to realize they were not taking medication, they were just kept under the pillow, yet there were guardians. (male stakeholder, NGO-based-2)

The guardian could also cause confusion and treatment interruption rather than assist the client, although this counter-experience was only related by one male client and was likely an exception.

> When I was suffering from TB, my guardian said I was not allowed to take [ART] medication for a while, that I should miss for some time. So, the time I finished my treatment is when I asked the guardian if I could start taking ARV drugs again. So, he said I should go and I will be told whether to start again or not. When I went there, I was told that I was not supposed to stop taking ARV drugs but they were supposed to change so that I can take them with TB drugs. As a result, they changed my medication since I still had a month to finish the

treatment. (MSW with unsuppressed VL, 38 yrs-2)

Guardians were mostly seen as supportive, and as the examples of the young men show, could be crucial in encouraging continuation when psychological and practical challenges occurred. As the example above shows, their service could also be counterproductive when they had not fully understood medical instructions. While blood relations rather than the wife or partner were MSW's first choice of a guardian, the wife or partner played an important role in reminding men, especially those with unsuppressed VLs to take ART consistently thus de-facto performing the task of a guardian. For some MSW, guardians were immensely important in the ART initiation phase.

3.1.5.4. "My relatives know…but my friends don't"– trust and its limits

A person's trustworthiness was a major consideration for the disclosure of MSW on ART (Berner-Rodoreda et al., 2021b). Trusting or mistrusting relatives, partners, friends and outsiders was based on MSW's observations and experiences. The experience of disclosure or non-disclosure could also decide on the outcome of relationships.

Most MSW on ART viewed the family and relatives as trustworthy as they had seen one's health decline and offered help and so deserved an explanation. Some men stated that they would rather inform relatives themselves than having them hear about it through other people. Some felt it was liberating to disclose, that the people one was staying with would need to know and also saw the advantage for themselves in receiving help and support when needed (ibid).

While some men in the community talked about the difficulty of being open about one's HIV status for fear of stigma and mentioned rumors about some of their relatives being HIV-positive without the relatives sharing their status, the majority of MSW on ART irrespective of age and VL status disclosed to their relatives who they felt had a right to know. "I told my younger brother, my aunties and my aunties children… so these are the ones who are close to me. I didn't want my relatives to hear the news from someone else" (MSW with suppressed VL, 51 yrs).

For some MSW, disclosure included a wider circle of people beyond one's family: "I also shared this with my political supporters…to encourage them that being HIV is not a limiting factor to one's success. I can do anything just like anyone" (MSW with unsuppressed VL, 53 yrs). Serving as a role-model for others in either encouraging relatives or others that HIV is not the end of one's life, to test for HIV or to encourage people not to get infected were further reasons seen by MSW on ART and men in the community to disclose one's status.

Younger MSW on ART mainly disclosed to their immediate family: "It is only me, my mother and my sister who know" (MSW with suppressed VL, 18 yrs), yet consented to have

the main care-giver or guardian inform other relatives (mother, aunt, uncle, in-laws, brother, sister) as long as this information stayed within the family circle.

I: Would you be comfortable if your mother was to tell anyone?

R: No, I wouldn't be comfortable at all cost revealing this to people who are not my relatives.

I: Why is it so?

R: Likely the way people perceive HIV-positive people. Friends and people around would definitely start discriminating me, even mocking me. (MSW with suppressed VL, 19 yrs-1)

Yet, even within the family, a minority of MSW irrespective of age and VL status were selective who they would share the information with, e.g. confiding in an HIV-positive brother-in-law but not informing one's own children. A young man decided against telling the relatives he was staying with:

> I stay with my uncle but have never told him that I am HIV-positive. This is because when I sat down and thought about it, I know, that if I tell him there will be discrimination against me and other things. Most people who talk about HIV say that others don't relate with them well because of discrimination… We sleep six boys in the boy's quarter, and my uncle sleeps in the main house. So, what happens is that I wake up at 2am and start reading while others are still sleeping so I wake them up at 4 o'clock to get ready and draw water. So, when I am going to take a bath is when I get my drugs. I put them in a plastic bag together with a flexa foam because they make noise. Then I put it in my hand like I am washing my face and drinking water. (MSW with suppressed VL, 18 yrs) quoted in (Berner-Rodoreda et al., 2021b)

Some therefore employed elaborate procedures to keep their HIV-status a secret as they anticipated stigma or discrimination even within the family (ibid). Some stakeholders commented on the flipside of non-disclosure as likely leading to non-adherence. "What really happens for a person to not start ART nor continue with ART is because the person had kept this a secret to himself" (male stakeholder, health-based-2). Yet the quote by the 18-year-old man above shows that taking pills as prescribed could be independent of disclosing one's status to one's reference group.

The partner was mostly included in the circle of confidants – for some, this was the prime person they disclosed to as the partner had taken care of them: "My wife was the first one to know since she was my guardian at that time. I was not even able to walk then, so my wife was the one who was receiving medication for me" (MSW with suppressed VL, 36 yrs). Others told the partner with a delay of some months as they had not come to terms with the result themselves. "I felt disturbed as such I decided to keep this news to myself… I did not tell my wife; she was just wondering that I started taking strange medication" (MSW with unsuppressed VL, 47 yrs). The difficulty of taking the pills in secret when cohabitating and the risk of creating mistrust when the partner found out was another reason for eventual disclosure: "I got tired so I told myself that I could not sustain this for even three or four months. It would not be good for her to realize it herself" (MSW with suppressed VL, 34 yrs). The relationship with the partner seemed, however, more complex than those with blood

relations. An important consideration was the ability of the partner to keep the information to herself.

> if she informs her relatives, then I am done. But she did not tell them till now to say the truth because she loves me so much. She knew that if she tells them, especially her mother, you know women, mother-in-law for that matter, then right away she will tell her to leave, saying why should you die, get out of that place, but she kept this secret for me and till now she is negative. (MSW with unsuppressed VL, 37 yrs)

Trusting in the strength of the relationship helped MSW to disclose but the fear of losing a girlfriend or partner could also lead to caution and delays in disclosing: one man only told his wife when she was pregnant (Berner-Rodoreda et al., 2021b). A young man was in a relationship for more than a year and kept looking for the opportune moment to disclose.

> My plan for her was for us maybe to stay for a while so when I tell her she should not be surprised and I have to be sure if she really loves me because I can tell her that I have the HIV-virus while she doesn't love me and leaves me. (MSW with suppressed VL, 19 yrs-2)

For some men, irrespective of age and VL status, losing the partner was more than just a fear: they had witnessed their partner leaving them upon being informed about their HIV-status. "That time we were in courtship and after she heard the news, she broke up with me" (MSW with suppressed VL, 43 yrs).

Mistrust towards the partner because of suspected transmission was often linked to the non-disclosure of the infected partner. A subsequent relationship break-up could emanate from the male or the female partner as the following example shows where a woman tested positive for a STI and was asked to bring her husband.

> It was after we tested them and asked if they wanted the results to be disclosed as a couple or individuals, and they opted for couple, and then the man was found positive. And that's when he disclosed that he had been on treatment for so long, and the woman divorced him that same instance. (female stakeholder, health-based-8)

From a male perspective, the blame for becoming infected was often levied against the female partner. One man depicted how he gradually realized that his partner had not shared her HIV-status with him when he became sick and was left by her.

> So, I told her that I am not feeling okay and she asked me what is the problem, I said 'headache', but surprisingly she took some tablets and gave it to me, that was Bactrim. This white Bactrim we are receiving now. So, one day I told her that I wanted to give her money to buy me those drugs, then she said that the drugs were given to her by a certain woman…Then I told her that she should ask that woman to come and sell the drugs, then she said, no, she has run out of them as well... And later I started not feeling well and the like, then I come to the hospital. They tested me and did find the disease... But that time I was still sick, right, then the woman left me in the house and she went to [a different town] leaving me alone. (MSW with unsuppressed VL, 24 yrs)

The root problem seemed the non-disclosure of the partner who was willing to initially help but increasingly withdrew as she may not have wanted to reveal her HIV-status. Another man wanted to divorce his wife when she abandoned him at the hospital as he suspected that she had passed the virus onto him depicting himself as "not a person who liked having multiple girlfriends but I believe it was the woman I married" (MSW with unsuppressed VL, 38 yrs-2).

Non-disclosure therefore could have implications for the relationship: either partner could end the relationship.

While friends seemed particularly important for men below the age of 30 irrespective of VL status, whether or not to tell them was a difficult decision. Some did not trust how friends might react: “Friends and people around would definitely start discriminating me, even mocking me” (MSW with suppressed VL, 19 yrs-1) and therefore restricted the information to relatives: “My relatives know… but my friends don’t” (MSW with suppressed VL, 26 yrs-2).

For some young men, the concern to lose friends led to only disclosing their TB rather than their HIV-status or not talking about their HIV-status at all; some were worried that rumors would spread if they disclosed to people beyond the family.

> Fear is there because you think of what your friend’s reaction will be unlike disclosing it to your relatives who understand because you’re a relative but for people you are not related to, they can just abandon or just leave you and even stop talking to you and tell the world about you. It is therefore hard to tell someone because you are worried that being a non-relative, won’t they go around and start telling people about my status? (MSW with unsuppressed VL, 18 yrs) interview excerpt quoted in (Berner-Rodoreda et al., 2021b)

Younger men also found excuses at boarding school for taking ART pretending to study for an examination so that the fellow students would not suspect them to be HIV-positive – “then I go into my bedroom and drink my pills and then carry my note books as if I am going for studies” (MSW with unsuppressed VL, 21 yrs). Others were selective or scrutinized their friends. “I told some of my close friends, those I trust; friends I knew would not tell anyone else, those that would still count me as a friend nor judge me in anyway” (MSW with suppressed VL, 30 yrs).

For younger men establishing trust through finding out that a friend is also on ART, makes use of the same health facility, had accompanied one there, or by having a long-standing friendship facilitated disclosure. Yet even among friends it often took time to open up. Learning that the friend is also taking ART was left to chance. One young man recounted how his friend discovered his ARVs in his room, then took him to his own place and showed him that he was also taking ART. Another man recounted how his friend had asked him to send him the drugs he forgot at home. When he went to his home, he noticed that they were ARVs and asked him later if he received them and what he meant when he said that the drugs were his life.

> Then he said, do you remember that I was very sick on such and such dates, so how do you differentiate now with those days, then I said, “you are very fine.” And he said, “alright, this is the answer. I forgot to take the drugs with me, so it will not be good if I could spend three to four days without the drugs.” (MSW with unsuppressed VL, 24 yrs-1)

This cryptic way of disclosure was also described by men in the community; friends would rarely be straightforward in talking about taking ARVs, even after they had accompanied them to test:

> It took three days without him telling me anything about what happened in the testing room, then I asked him saying, "my friend, we went to the hospital, but you did not tell me the results," and he said when we went to the bar to drink beer… "the advice you gave me on that day at the hospital is what has helped me to look like this"… But he did not show me anything so I suspected that he started treatment. (MSW in community, 32 yrs)

Not revealing each other's secret so that nobody would stigmatize or mock them seemed particularly important in young men's friendships as this man recounted who tested for HIV with his friends:

> So, all the four did not know about their status but I was the only one who knew my status. After they got tested, two of them were positive and the other two were negative. So, I also encouraged them saying guys, now you are divided but the division should not be physical but only in the mind, so for you who are negative this should not be a hook of getting money for gossiping. So, since that time till now and some of them have moved some where I have never heard any rumor and for others who are around. We still chat as best friends. (MSW with unsuppressed VL, 21 yrs)

Some men were worried that quarrelling or different circumstances may lead the partner or friends to voluntarily or involuntarily disclose information and therefore decided it was safer not to trust too many people with private information. "I don't trust friends. A human being is not a trusted thing" (MSW with unsuppressed VL, 19 yrs-2). Anticipating stigma or not wanting to share one's status with work colleagues could also lead to missing one's doses.

> What makes you miss medication is not that you want to, it is because assuming they tell me that tomorrow I am going to the workshop and at the workshop we are in the same group with workmates and you eat and sleep in the same room and may be you are tired and you say I will take medication tomorrow… Now maybe we have slept two people in a room and now I feel that when I get the drugs to take them, he will be surprised and will ask what drugs I am taking? So, you just leave it. (MSW with unsuppressed VL, 38 yrs-1)

Men's desire to keep their HIV status a secret could thus also be an obstacle for adherence.

Conversely, trust could also have its limits. Some men called on each other for sharing ARVs when located elsewhere for work. One man described how he felt increasingly uneasy about this and refused.

> Due to work issues, one of our friends used to forget and was expecting that we should be sharing our drugs with him so I realized that it was not good. This other time I refused to give him as a result he stayed for a week without taking medication since his home was very far. Then he went back home to get the drugs. He was found with a problem when he came here to collect the drugs. (MSW with suppressed VL, 34 yrs)

Sharing therefore ended when it had repercussions for one's own health and adherence.

Men on ART were cautious as to whom they disclosed their status – while they generally trusted blood relations and most trusted their partners, with potential partners and friends the trust was counteracted by the fear of losing the person or becoming stigmatized. Young men were even more selective in sharing their HIV status. Some men on ART were even wary of their own relatives and decided to keep the status to themselves.

3.1.5.5. Experiencing varied reactions from support and encouragement to discrimination

Support and encouragement were mainly experienced at partner and family-level; discrimination and rejection could emanate from one's personal reference groups and beyond.

Reactions to a man's HIV-positive status by his partner, family, friends or others ranged from surprise, shock, crying, feeling pity, sad, bitter or disappointed, being dismissive to understanding, accepting and being supportive. Feelings of family and partners could change from sadness, disappointment and shock to support as the following examples shows.

> My wife was greatly disappointed because she openly told me that if there is a man I have had sex with it is you, which was very true because I also confirmed that… Later on, you know we had a child and what she vowed was that she wanted the first man to have sex will be that to die with her, should be the first and the last one, so was frustrated at the time, but she was very loving and still she loves me very much. So, then she understood me and told me that I should be following all the counselling I have been told at the hospital then you will be fine and just make sure if you have any other relationship end those affairs, and we will continue living together. I have accepted the way you are. (MSW with unsuppressed VL, 37 yrs)

Few men described being left by their partner after revealing their status; most MSW spoke of the wife or partner coming to terms with the situation even if, as in the example above, the wife dictated the terms for continuing the relationship. For some partners, the acceptance process took time. "She was sad but later on accepted it" (MSW with suppressed VL, 34 yrs); others showed immediate understanding: "She said she did not love me because I am okay or not… "I cannot say I will leave you because you have revealed that, because this can also happen to me," that is what she said" (MSW with unsuppressed VL, 38 yrs-2). For MSW it was a relief to see the person one confided in accept the result even if suspected "bad behavior" was viewed as the cause for the HIV infection. "Then I explained to my mum and after she accepted it, I was so glad. She was bitter the first few days because she wasn't expecting that I could behave the way I did" (MSW with unsuppressed VL, 39 yrs).

MSW on ART received support in two major ways: in terms of moral and emotional support in being encouraged and reminded of the time to take the ARVs and in terms of practical support of being accompanied to the facility, receiving transport money, clothes, food and being offered a place to stay.

For men with suppressed VLs, relatives (aunts, uncles, siblings, mother, children, in-laws) played a major role in reminding and encouraging them not to lose hope. The role of the wife or partner in reminding men to take their pills was more pronounced in men with unsuppressed VLs and may be due to the fact that only 50% of men with suppressed VLs in the qualitative sample lived with a partner compared to 70% of men with unsuppressed VLs, see methods section.

> If there's someone who supports and encourages me a lot then it is my wife. Because there are times that I come home late and tired and I find myself sleeping on the couch. Around half

> eight, she wakes me up to take the drug. That's why I am looking the way I am now. (MSW with unsuppressed VL, 39 yrs)

Two men above 40 years of age who had separated from the partners talked about the ease of taking tablets together or being reminded when they were still in a relationship versus having to rely on remembering to take the pills by oneself. Mother, siblings, uncles, in-laws, grandparents also played an important role for MSW with unsuppressed VLs.

Young men with suppressed and unsuppressed VLs depicted being supported financially by the family and reminded to take the pills by a parent when they were younger, then left on their own as they grew up. The lack of being reminded was problematized by some young men irrespective of VL status but did not cause poor VLS in all MSW. Some had found their own way of remembering (see 3.1.4.4.). Lack of financial support, however, contributed to adherence problems.

> When I was young my parents were supporting me financially in terms of buying me things inclusive shoes whilst now I have to fetch for myself to acquire things and it is because of these things that makes me busy to the point that I forget to take my medication whilst other times I do not even take medication at the commended proper time. (MSW with unsuppressed VL, 18 yrs)

Some young MSW grew up with grandparents or other relatives. Siblings, aunts, grandparents and in-laws would remind and support them, yet a counter-example showed that stigma could also manifest itself in families.

> He [my cousin] said you should not take your medication here. You should take them in your bedroom. So, I kept quiet, I shook my head and asked myself what he was thinking for him to utter those words… I knew he said this because we were alone. (MSW with suppressed VL, 29 yrs)

Some men on ART therefore also had to cope with adverse reactions from the people they lived with.

MSW on ART acknowledged practical support in terms of accommodation, transport, clothes, food and money. Men with suppressed VLs were predominantly assisted by brothers, the grandmother and the uncle; men with unsuppressed VLs received support by siblings, the wife, mother, in-laws, the grandfather and other non-specified relatives. Some younger men described their struggle for survival.

> I stay with my grandfather who also depends on other people's support and sometimes I am the one who supports him when I have done piece works, so that also affect me on my daily uptake of treatment. (MSW with unsuppressed VL, 24 yrs-2)

Having to rely on their relatives for their housing or livelihood needs also expressed itself in frequently not having money for transport to the hospital, which will be elaborated on in chapter 3.1.6.. For men on ART, relatives played an important role in providing support; the wife or partner seemed to play a more prominent supportive role for men with unsuppressed VLs.

With friends, reactions could vary – some showed themselves to be supportive in

reminding the person, giving advice when challenges occurred and were non-judgmental.

> Close to my home, there was another person who was also on HIV treatment and had a similar experience with the yellow eyes. He told me to say: "Man, you have to go to the hospital to explain to the doctors." That was the time I came here alone and explained everything. (MSW with unsuppressed VL, 24 yrs-1)

Yet, unpleasant experiences were also made. Some mentioned being mocked by their friends: "Of course it hurts when your friends talk you down that you are taking medication" (MSW with suppressed VL, 34 yrs). Others depicted neighbors making their life unbearable. "In… (town), I had problems with the people I was living with close by. They hated me and discriminated me to the extent that I lost hope of life; to them I was as good as a dead person" (MSW with unsuppressed VL, 53 yrs) quoted in (Berner-Rodoreda et al., 2021b).

While MSW who disclosed at work described receiving benefits such as time off or even financial benefits as an employee living with HIV, one man experienced enacted stigma and discrimination when he was made to disclose his HIV-status to his employer.

> When I got sick, my boss asked me to tell him what it was, so I did. So, he said I don't want to work with people who are sick, you have to go. So, I was afraid and within that period he told me that I should move out… You see, he was against me until when I was doing something on the computer, it blew from the power supply… Then I said the computer has sparked fire. So, he got angry and said I don't want to work with people who are sick, you have to go. Within the next two days I received a letter that I was on probation and it had not been supported. (MSW with unsuppressed VL, 38 yrs-1) interview excerpt in (Berner-Rodoreda et al., 2021b)

Informing others or being pressurized to disclose one's HIV-status therefore did not only bear a theoretical but a real risk of being discriminated. While MSW on ART mostly seem to have had positive reactions to informing others of their HIV-status, the perceived danger of experiencing stigma, discrimination and rejection seemed to have a profound effect on the way men dealt with HIV.

3.1.5.6. Seroconcordance and serodiscordance: aid or challenge?

Living in a serodiscordant relationship was mentioned by some men over 30 years of age and mainly by men with unsuppressed VLs. Some expressed their joy that their wife and children were not affected; others seemed incredulous that the wife was still HIV-negative and depicted her testing several times or viewed it as "God's will" (MSW with unsuppressed VL, 38 yrs-2). Others were afraid that the wife might leave them or inform her relatives and were relieved when serodiscordance did not affect the relationship and they experienced treatment support by their wife. Serodiscordance posed a threat to starting a relationship, if the man's HIV-status became known. "I am still a boy and maybe I am asking out a girl. The way boys are, they can say, "don't accept him, he has AIDS"" (MSW with suppressed VL, 34 yrs).

Serodiscordance for MSW on ART could therefore pose a challenge unlike a partner of the same serostatus who had also accepted that status. In the qualitative sample, half of the men with suppressed VLs and about a third with unsuppressed VLs – all above 30 years of

age - depicted having a wife on ART. Some talked about the wife causing a "mindset change" in the husband. "My wife plays a big role for me to adjust to ART… I know for sure, if it was not for her, it could have been difficult" (MSW with suppressed VL, 46 yrs). Agreeing on a time of taking ARVs together, reminding and supporting each other was seen as a benefit of living in a seroconcordant relationship.

For MSW on ART, having an HIV-negative partner presented the risk of being deserted by the partner or the negative partner not being interested in entering into a relationship in the first place, yet some MSW who had been married for some time or who revealed their status early on in the relationship also talked of the partner's help and support. It therefore depended on the strength of the relationship whether or not serodiscordance became an issue. Men viewed an HIV-positive partner who was also taking ART as facilitating adherence as one could take the pills together and remind each other.

3.1.5.7. Men's social interactions as health and treatment benefits and risks

Health and HIV information was also exchanged when men met socially: at soccer matches, when playing games together such as the Malawian boardgame "bawo", at private meetings, at lunch-breaks at work or at beer-drinking places in and around Blantyre. Drinking was commented on as important for men's socializing: "most of the time we meet at the beer drinking places" (MSW in community, 48 yrs-2). A stakeholder described men's drinking habits in the country: "When you go into the villages, you find that almost the whole village, 90% of the men go drinking" (male stakeholder, church-based-2). For men in the community and MSW on ART, drinking with friends was a source of information on health and HIV issues. Men from the communities around Blantyre talked about advising each other to use condoms when having sex with bar-girls, going for HIV-testing when they had pains in their genital area, and some even disclosed their HIV status to their friend. Others shared information about side-effects they had heard about or experienced themselves and advised others to see a doctor. Yet these places could also be used for spreading information about people so that some men were wary who they entrusted their personal information to. "Most of this community are drunkards so they fear that if someone is drunk, he might say, "hey!! don't do that, don't you forget that you are on ARVs", something like that" (MSW in community, 32 yrs).

Many appreciated the encouragement and information they received from friends. It was predominantly men in the community and men with suppressed VLs who talked about advising friends on HIV issues - some felt it was their duty to inform others:

> R: It was at work, especially during lunch hours as we mostly eat together. This is also an arena where we get to advise and encourage each other and we even tell the others, who take alcohol, who smoke and who are involved in prostitution while they are on medication that that is not a good thing as the medication can't really work properly with such mixtures.

I: Don't you think others are offended with this?

R: Of course, they are others that are offended but there are others that are wise enough that do take the advice and even come to you later just to thank you for such advice. (MSW with suppressed VL, 46 yrs)

For young MSW receiving advice on side-effects or being encouraged by others played an important role as well as visiting the health facility together and building up the hope for those who had been admonished for having a high VL.

> They [friends] tell us on our way back home since we go back together. He says, "the doctor scolded me because my viral load has increased: Since you adhere to the prescriptions what is the problem?"... We advise him to find a fixed time because the viral load also increases when you take medication anyhow. Maybe you have been told to take medication at 8 o'clock but you take medication at 10 o'clock and sometimes at 11 o'clock, you find the viral load is increasing. The time you miss, the virus gains energy, and the viral load increases, so you need to keep time… If there is something that your friend doesn't know, they learn some things from you. If he didn't have faith, you encourage him and also encourage the person to keep on taking drugs. (MSW with suppressed VL, 19 yrs-2)

Friendships and socializing thus formed an important source of information and encouragement for MSW on ART and in the communities on topics such as HIV prevention and sexually transmitted diseases, how to deal with ARV side-effects, how to improve VLS and general behavior on ART, yet some advice was also counterproductive. Some men took deliberate breaks from taking pills as they followed the advice by some who proclaimed that the drugs could only neutralize in the body if one did not take them every day. One man depicted losing a relative because of the advice to take a break by a person who had been on ART for a long time. Another shared his own experience with other clients who were defaulting in order to motivate them:

> I tell them: "My friend, we both are on this medication, but what is it that has made you stop taking the meds? Look, you are getting thin, you are not looking good, getting darker and you seem to develop scabies." So, they said: "Aah, my friend, I am tired of taking these meds and I stopped." So, I was still telling him, "you're damaging your own life. What you are doing, I have done that already but I realized that I am just destroying my life, yet I have a huge responsibility. Please take the medication again." (MSW with unsuppressed VL, 39 yrs)

Socializing could, however, also distract MSW from taking their pills. Some young men between 19 and 36 years with good VLS talked about spending time with friends and forgetting to take pills.

> Aaah, I would usually skip taking my medication when I was taking the evening ARVs pills; this was because I would find myself in some places chatting with friends and I would usually enjoy such companies as such the drug drinking time would click whilst I was there. I could therefore not go back home and take my medication but I would just convince myself that I would take medication the next day. (MSW with suppressed VL, 36 yrs)

Socializing with friends or lovers could also make young men forget about their appointments at the health facility even when they were already meeting there for the teens club – a club that the facility offers for young people on ART to be educated on HIV and ART, receive their medication and to be able to socialize with other young people on ART.

> I had a girlfriend from the teens club just that our relationship now ended... When I was in a relationship with her, I would usually not be present at the teens. They would tell me that I

> should go and test for viral load but I would be so much carried away with her and just be chatting and whilst there, I would forget to test my viral load and then I would also escort her back home or even go to town with her. These kinds of things are the things that makes you forget to collect your medication or viral load. (MSW with unsuppressed VL, 18 yrs)

Socializing with colleagues and friends constituted important venues for information exchange for younger and older MSW, yet could also lead to poor adherence when it clashed with the time for taking ART or hospital appointments. MSW freely received and provided advice; only few MSW seem to be wary of an adverse reaction.

3.1.5.8. Sexual Behavior and Performance on ART

Sexual activities of MSW on ART varied. While men talked of experiencing no sexual cravings when they started ART with a severely compromised immune system and accompanying sicknesses, life normalized for some when their strength returned: "That time when I finished my TB treatment, I increased my gear since I now had energy… I stopped using condoms and I was not afraid of sleeping with women" (MSW with suppressed VL, 34 yrs), whereas others continued to save energy by minimizing sexual intercourse.

> To be honest nowadays I don't bother sleeping with my wife. She understands. We can stay almost one month... I do it to safeguard my life. We were told that if you have strength you can have sex, but if you do not have, then you should not… So, I know that when I do it, I will become weak. (MSW with unsuppressed VL, 38 yrs-2)

ART was seen as draining one's energy and possibly one's health; some older MSW viewed childbearing for HIV-positive women as a health hazard with one MSW advising his wife "to stop taking an active role in reproduction, to ensure we remain healthy whilst taking treatment" (MSW with suppressed VL, 45 yrs). ART could thus impact on MSW's sexual and reproductive lives. In addition, ART was seen by some as lowering one's sexual performance. In order to live up to his partner's (and perhaps his own) sexual expectations, a young man recounted skipping ART occasionally.

> R: When you compare your performance before starting ARVs and after taking ARVs there is really a disturbance and reduction in performance. We younger men are honestly disappointed with ARVs and we actually think that maybe there are some things they incorporate in ARVs so as to reduce sexual intercourse activities.
> I: Do you think this also makes people not adhere in taking ARVs?
> R: Yes, very much true actually because when you go out with a woman you only realize you have only been able to only have sex with her in one round, it really disappoints because the woman thinks you are a weakling, yet the ARVs are the ones making you weak.
> I: Have you yourself ever stopped taking ARVs at some point in time because of the same issue?
> R: Yes, I have ever reduced my adherence… It happens that when I have done only one round, I sleep the whole night and I do not even desire to still do more sex. Things like these are really challenges.
> I: What year was it when you had opted to skip ARVs because of this?
> R: It is generally all the years but now I just came to accept it that this is how things are like now. (MSW with unsuppressed VL, 29 yrs-2) quoted in (Berner-Rodoreda et al., 2021b)

For this young man, restoring his virility, which was affected by ART in a non-desirable way, meant forgoing ART. Other young men on ART reacted diametrically opposed and decided to stay alone or forgo sexual intercourse for fear of transmitting the virus.

> I had never had sex with any girl, I abstain especially when I realized that I was carrying this virus something just stops me to say what is this? You shouldn't do this… For me as a person, in the name of God, I have never asked any girl to go somewhere with me. What stops me really is the fact that I fear that if by chance I accept one girl and have sex with her, the baby that will come as our gift will have the same problem like mine. So, I fear for this child to go through what I have gone through the whole of his life. Sometimes I keep quiet and think about it. But there will come a time when I will ask the doctor of it is possible for someone like me with HIV to have sex with a girl and have a baby that has no virus. That's what dwells in my mind the most. That's why I don't bother much about being with girls. I simply just chat with them, and life goes on. It is not that I don't have feelings for the girls. I have the feelings but for me to say let's go and have sex, aaah, I am always afraid. Even in my residential area people question as to why I am not interested with girls… I fear that if I am unfortunate, that the girl I sleep with gets pregnant, the baby will suffer like me the whole of his life. (MSW with suppressed VL, 29 yrs)

The full benefits of ART and an undetectable VL in terms of not being infectious did not seem clear to MSW (see also 3.1.6.6./7.). Some men talked about being faithful to their wives and using condoms with (additional) sexual partners. "On women I am not saying, I don't do, but I have protected sex" (MSW with unsuppressed VL, 39 yrs). For some, condoms doubled up as a contraceptive. This held true for both younger and older men: "I used a condom… I told her that I was using a condom because I was afraid of getting her pregnant" (MSW with suppressed VL, 19 yrs-2).

> So, I told my wife to say we have these children and even if we can have more of them we cannot buy a car with that but we will have problems of taking care of them, so we agreed to be using condoms in our family (MSW with unsuppressed VL, 46 yrs)

While men's sexual behavior could vary, their concern of not infecting the partner showed responsibility towards their female partner(s) irrespective of age and VL status. The impact of ART on one's sexual performance was another consideration for younger and middle-aged MSW.

3.1.5.9. Synopsis of ART facilitators and barriers for men at relationship level

The following table summarizes social factors regarding men's experience of ART.

Table 15 MSW's facilitators and barriers for ART uptake and retention at relationship level

Facilitators	Barriers
Being accompanied by a relative to test	Not being told about HIV infection as a child born with HIV
Moral and practical support by family and relatives and/or through guardian	Reliance of minors on family for treatment access.
Disclosure to trustworthy relatives and friends	Non-disclosure out of mistrust, fear, or anticipating stigma (unclear if this is a barrier)
Positive reactions by family and friends to HIV disclosure	Negative reactions by those who know one's status (losing job after disclosure, being stigmatized, being deserted by partner)
Friends as source for receiving and providing advice	Socializing with friends and missing time for taking ARVs or appointment at facility

Social gatherings and drinking spots as source of HIV and ART information	Receiving wrong information/advice about ART
Testing with friends (peer pressure)	Fear of transmission leading to social withdrawal
Taking pills with seropositive partner	ART affecting sexual performance negatively

3.1.6. Facility-based ART delivery – enabler or barrier for men?

In this sub-chapter I will examine men's experience of facility-based ART services from testing and initiating ART, interacting with health personnel, collecting pills and being monitored on ART to their view of the services and recommendations for future education and service delivery.

3.1.6.1. MSW's preference for privacy

Men on ART received their ARVs from UFC/Queen Elizabeth Central Hospital, a public facility managed by the Lighthouse Trust. Some men were able to compare UFC to other HIV or ART facilities or to the former ART unit within Queen Elizabeth Central Hospital. "Here, it looks like it's a private clinic hospital" (MSW with unsuppressed VL, 47 yrs). Men in all respondent groups including male stakeholders preferred private services as they regarded the services as quicker – "You do not stay on the line for a long time. It is so simple" (MSW in community 39 yrs), and as less conspicuous and less congested – "you were not seen by a mass of people that side. I was just going to the private clinic as if I was going for normal illnesses and not necessarily going to take ARVs" (MSW with unsuppressed VL, 44 yrs). Yet visiting a private clinic required a certain affluence: "Aah, many of those people who have enough money go to private clinics or hospitals but most people go to Limbe Health Centre to seek health care". (MSW in community, 48 yrs-2). Despite more privacy and faster services, some stakeholders and men with unsuppressed VLs pointed out the disadvantages of private facilities as they would often just treat symptoms and not test for HIV and then refer the client to a public hospital when s/he was seriously sick. Also, counselling was felt to be a deficit at the private facility: "Men would love this place better than the private place…Here you receive the required counselling whilst at the private clinic, you do not receive counselling" (MSW with unsuppressed VL, 44 yrs).

The location and the state of the facility played a role for MSW. In a semi-urban area where the local facility had neither water nor electricity, the public facility was viewed as inadequate: "imagine we fail to wash our hands when we go to the toilet as you know in life you are supposed to wash hands after visiting the toilet" (MSW in community, 51 yrs). UFC, by contrast, was housed in a spacious building. "When I came here seeing the new environment, big hospital, beautiful place I said in my heart, oh this is a good deal" (MSW with unsuppressed VL, 37 yrs). For a contrast of facilities, see *figure 13*.

Health center for rural area: mostly closed, poorly maintained waiting area

Umodzi Family Centre in Blantyre: open at weekends, spacious, well maintained

Figure 13 Contrast of health facilities rural/urban, Blantyre District.
Photo credits: Berner-Rodoreda. Research assistant granted permission to use left photo.

Opinions on the location diverged: While some men irrespective of VL status or age appreciated the setting – fenced in and "situated at its own premises where no one would tell that this person is receiving treatment on HIV and AIDS" (MSW with suppressed VL, 30 yrs), some youths considered the site too public.

> It was built near the market, so when you are entering, they just suspect or mark you to say this person is going to get ARVs there... because it gives pressure to many youths not to feel comfortable when coming to this hospital. (MSW with unsuppressed VL, 21 yrs)

A preference for privacy also expressed itself in MSW's HIV testing choices. Stakeholders viewed VCT for men at facilities largely as a failure since too few men would make use of health services (3.1.3); provider-initiated testing, testing through ANC or VAPN combined with family testing days and after-hours testing were seen as more conducive for targeting men. UFC increased its community outreach programs for testing in 2019 and found a lot of interest in self-testing. "The demand for HIV testing kits was very high… comparatively, it was huge" (male stakeholder, health-based-1). Many male community respondents favored self-testing to going to a facility as self-testing would be faster, autonomous, convenient, private, and not necessitate a facility visit. Especially young MSW found self-testing appealing as it would also be less embarrassing and cut out an unpleasant interrogation by health personnel:

> I would choose self-testing because I will do it within my room and then I will know of my status and there will be no questions that we are asked at the VCT for example: "Do you have a girlfriend? Do you sleep with her?" There will be no shyness that comes due to the asking of these uncomfortable questions when I go for VCT. (MSW in community, 24 yrs)

The fact that one could keep the result to oneself was viewed as an asset by some and a liability by others. Stakeholders were mostly in favor of self-testing for men for the same reasons of confidentiality, freedom, privacy and convenience; some viewed positive peer pressure for self-testing working particularly well for younger men: "if everyone is getting it [self-test kit], I'll get it" (male stakeholder, NGO-based-3). Male community respondents opposed to self-testing thought men would cheat themselves pretending that they had not done the test correctly or would not act on the results. One stakeholder feared that the counselling aspect was missing and that self-testing may lead to psychological or even suicidal

problems. The few MSW on ART who expressed an opinion on the mode of testing preferred self-testing, yet none of them had tried it; only one male community respondent spoke about using a self-test (Berner-Rodoreda et al., 2021b). For men on ART testing for HIV had been mostly a last resort; many were tested at facilities when they felt sick and were therefore diagnosed through PICT. VCT was largely seen as non-appropriate for MSW:

> Like in my case, I came here because I was sick. This applies to most men out there. They would come to the hospital only and if they are sick or something not just anyhow, that's impossible, and let alone coming here for VCT – that's not easy. (MSW with unsuppressed VL, 45 yrs)

Inspiring more men to know their HIV-status and initiate ART when testing HIV-positive was thus viewed as needing a wider range of interventions beyond facility-based services.

3.1.6.2. Men's experience of ART facilities

Across respondent groups health facilities, waiting times, service provision, congestion, opening hours, and the manner clients were treated were seen to play an important role for men. "So, going to an ART site has actually been one of the issues that as a country we are grappling with to find ways of how best maybe to make it friendly to men" (male stakeholder, academia-based-2).

Men in the community complained of the restrictive opening times of their local health center clashing with their farm work so that they could not attend the clinic and would have to go to a clinic further away.

> Now as you can see, it is farming season such that most people are at their fields from the morning and they will probably be coming back in the afternoon. Those working at the HIV testing site do not observe time as they might only open the clinic for 40 minutes and after that they close and go back. This means that they have missed the people who were working on the farm. (MSW in community, 27 yrs-2)

For UFC in Blantyre, the official opening times in 2019 were 7:30am to 7pm Monday to Friday and 7:30am to 12 pm on Saturday. Signs outside the facility advertised the old closing time of 4pm, yet posters inside the building alerted to extended opening hours. Some staff were at the facility before 7am. Staff meetings were scheduled several times a week from 7:45am to compare the work to targets, exchange important developments and updates. At times further staff meetings would take place in the early afternoon. During staff meetings a reduced service was offered to clients. Extended opening times and non-closure during lunch-time were appreciated by men, particularly above 30 years.

Many MSW on ART – particularly with unsuppressed VLs – spoke appreciatively of UFC as "good", "professional", "best clinic ever", "supportive", "helpful" and "fast". Men also enjoyed "good access to doctors" (MSW with suppressed VL, 45 yrs) and being able to combine the facility visit with work. "You come in good time, you also get assisted in good time like in my case I am always done by 8:00 am and go straight to work" (MSW with unsuppressed VL,

53 yrs), yet some men irrespective of age and VL status described long waiting periods and the dilemma of combining the clinic visit with work.

> What happens is that doctors tend to have their own meetings that take about 40 minutes. Being HIV-positive just happened to us, so we still need to be treated in time because we are also required to go to work and if one starts working at a new place, it poses a threat to them to be coming here as they spend more time here and can therefore get fired. This really hurts. As for two occasions, I had just given them back my clinical file without receiving treatment as it took longer to receive treatment. In the work places, they sometimes just give us an hour to come here but being here, you just see the time passing by without receiving treatment. (MSW with unsuppressed VL, 29 yrs-2)

Collecting ART was depicted by men to take between 30 minutes and two hours. UFC had implemented a separate line (fast track) for those with suppressed VLs.

> R: There is a dedicated line that moves fast, specifically made for fast track patients only like me who are dedicated in the ART program, so it speaks for itself. We go on the first window; we don't go inside even if we go inside, they will send us back that we don't need to go inside to wait in the queue.
>
> I: So how long do you stay here?
>
> R: Sometimes it takes two hours.
>
> I: Is that the fast track because two hours looks to be more hours to me?
>
> R: No, it is not. This is because sometimes other people don't understand what is going on. So, when we just go straight to start accessing treatment, they may feel otherwise. So, to avoid that we just go on the line to wait for the doctor to point us, and we get assistance instantly. (MSW with suppressed VL, 39 yrs)

Considerations for others would prompt some men not to use their prerogative of the "fast track" and showed that social awareness was regarded in higher esteem than competitiveness by some MSW. The waiting lines were, however, generally described as confusing by male clients who resented having to queue again when they were told to move to the other line.

> We are people that are engaged in so many other things so when they chase you in that line to say that you are not meant to be in this line, but you are meant to be in the other line it wastes your time. (MSW with suppressed VL, 26 yrs-1)

Own observations showed that it could take an hour for a man to complete all stations in the facility starting from reception and vitals to seeing nurses and/or a doctor especially if any additional counselling such as nutritional counselling or counselling for STIs were involved as well. While speaking highly of UFC, some stakeholders perceived the HIV infrastructure in general as "negative for men" (male stakeholder, health-based-3) – having to queue, little privacy in facilities with insufficient space, being tied to one facility and needing a transfer to obtain ART from elsewhere. One stakeholder summarized the barriers for men in visiting ART clinics:

> So, most men would opt to go for work than come to the facility and waste their time. That's another thing. So, I think those are mainly the problems; they think their privacy is being compromised and they also think that making money, they are losing out on making money when they come for the re-fills at facilities. (female stakeholder, health-based-8)

Young and older MSW viewed themselves as "busier" than women, with no time for collecting ART: "the man being the breadwinner, he's always busy searching for the needs of the family and also, they feel shy to be in places where women dominate" (MSW with

unsuppressed VL, 19 yrs-1). The gender perception of women as housewives, having ample time and men working and being rushed permeated all respondent groups. Few MSW held a different view and felt that men and women should be treated the same with no preference shown to men. “Aaah, it is just the same problem of waiting… as we cannot say that men should be the ones to be treated faster as women also have to go to work. (MSW with suppressed VL, 48 yrs).

Masculinity considerations and not wanting to mix with women were additional concerns: “They [men] do not accept nor find it appealing to be coming for ART with the women” (MSW with unsuppressed VL, 44 yrs). The facility was seen as women-focused by some MSW: “Services are good but at times there are special programs mainly for women only which sidelines men” (MSW with unsuppressed VL, 53 yrs). While 41% of all UFC clients were male, MSW’s views on the gender composition of clients could differ depending on the time they customarily made use of the services. For men who came in the mornings, women dominated: “Three quarters of who I see in this clinic are women” (MSW with unsuppressed VL, 44 yrs). This perception was confirmed when observing the waiting areas not just of UFC but also other clinics in and around Blantyre in the mornings: the majority were women and few youths were present. However, at UFC even in the mornings the ratio between men and women could vary from men making up as little as 20% to almost 50% of the clients. Men who came later in the day painted a different picture of clinic attendance: “Number 1 is older men, number 2 women and number 3 younger men” (MSW with unsuppressed VL, 31 yrs-1). According to own observations the presence of youth was more pronounced in the afternoons. Men’s greater attendance in the evenings seemed partly due to busy work lives, partly to not wanting to be seen by many people at the facility, see 3.1.6.4.

Stakeholders were the only respondent group that used the adjective “male-friendly” when describing UFC or other facilities offering a Saturday morning service where men could be tested for a number of illnesses and treated separately from women. “They don’t queue with the rest of the women, we do see them in a separate room, they are consulted there and they are offered all these services, yah” (male stakeholder, NGO-based-2). Male health personnel would provide the services: “basically it is run by males so that men should be comfortable discussing their private issues” (female stakeholder, health-based-8). Stakeholders talked about men as the more sensitive of the gender groups and therefore needing special treatment.

> We have got a society that looks at men as super-heroes in the society. As such, issues of secrecy, issues of confidentiality, issues of trust, that I think they need to trust somebody who is giving them the treatment, otherwise they won’t come the next time. They need to be given, that’s what I mean by special treatment. (male stakeholder, church-based-2)

3.1.6.3. "I joined the teen club which opened my mind"

Some younger men commented that the facility as such was not attractive for them. "Hospital setting to me is always boring, and I don't like it" (MSW with suppressed VL, 26 yrs-1). Even the films running in the waiting area were not perceived as interesting. "In my opinion women enjoy watching television a lot… I just know that there is nothing that entertains men here" (MSW with unsuppressed VL, 19 yrs-1). While young men did not find the general facility services appealing, the special services offered to children and youth from the age of 10 to 19 were much appreciated. The so-called teens' clubs which in 2019 took place on three Saturdays per month were, however, not known to all clients; some young men described how health personnel had to alert them to it.

> It took one of the mentors who had seen that my granny was having a hard time bringing me to the clinic, and he had asked my granny to let me join the teens' club. That is how I had started teens' club as initially I was coming to the bigger clinic whilst I was not supposed to be going there. (MSW with unsuppressed VL, 18 yrs)

Young men appreciated the social and educational aspects – meeting and socializing with other young people and gaining a deeper understanding of HIV and ART issues.

> So many social activities take place at teens' clubs: speeches from hospital personnel advising on precautionary measures for HIV, those that are on treatment are encouraged to take medication and to take a balanced diet. All and above interacting with friends. (MSW with unsuppressed VL, 19 yrs-1)

Young MSW also valued practical support in terms of transport allowance and free meals (snacks when coming and leaving and lunch): "they give us food and they also give us transportation" (MSW with unsuppressed VL, 18 yrs). The teens' club further provided youth with life-skills – "I joined the teen club which opened my mind on how I can disclose to my friend" (MSW with unsuppressed VL, 21 yrs). It was also seen as a youth-friendly environment for collecting ART.

> I was blank and had no understanding about ARVs but starting teens' club in 2011 when I was 10 years old, I was taught on ARVs. I also liked teens' club because it is faster there to receive my medication and meet doctors unlike coming to the general ART clinic. Doctors are usually free at teens' club… It was good for me to start this club. (MSW with unsuppressed VL, 18 yrs)

Greater freedom to speak with doctors or health personnel and more time for discussion on themes such as the prevention of STIs, family planning, learning about the modes of infection and their own infection and how to disclose to someone or how to keep one's status a secret, e.g. at boarding school, were important for young men in coming to terms with their own infection: "there we had learnt that it was not only through sleeping with someone that you could contract HIV but rather there were many ways" (MSW with unsuppressed VL, 18 yrs). One man was looking forward to graduate from the program as this would mean time away with more intensive training.

> It is good because where they go, they encourage each other in how to take medications. How we can take medication when we are with someone who doesn't know that we are on

> treatment. We are at boarding school, they teach them ways how they can take medication. (MSW, suppressed VL, 18 yrs)

Young men preferred these Saturday clubs to coming to the facility during the week and having to queue with older people. Yet those above the age of 19 or those who had their collection days scheduled at a different day to the teens club did not like the fact that they had to queue with older clients.

> Honestly, it's not a good service for young people; young people feel free in their youth friendly environment setting. In this case we [youth] are like being subjected to older people's settings, so it always seems as if one is lost in the group you don't belong to. In my opinion this is not good, the only thing that keeps me going in my case is because this is the hospital, we all come for treatment. (MSW with unsuppressed VL, 26 yrs)

3.1.6.4. Not wanting to be talked about, seen or heard

Many men wanted to be inconspicuous at health facilities (Berner-Rodoreda et al., 2021b). In order not to be recognized, some men travelled to faraway clinics – and ran into their neighbors (ibid).

> There's a clinic in [name of location] but I am used to coming here and also for privacy. I don't want to be seen by people from where I am staying especially my neighbors, but sometimes we still meet neighbors here and then you tend to wonder, "that so, neighbor is here as well. (MSW with suppressed VL, 39 yrs) quoted in (ibid)

Especially younger men were presumed to visit clinics where nobody would know them to maintain their reputation in the community and the chance of finding a partner. "The youth here would love to collect from a different place, not here… because of their friends, the insults I was talking about" (MSW in community, 48 yrs-1). Being seen at the clinic and possibly talked about by friends and in the community was a major concern expressed by younger and older men with suppressed and unsuppressed VLs (Berner-Rodoreda et al., 2021b). "People do not keep each other's secret as much as we both have come here as others will still talk after leaving this place to say that so and so has the virus" (MSW with suppressed VL, 26 yrs-1) quoted in (Berner-Rodoreda et al., 2021b). A health worker shared informally that some men would wait in the carpark to collect ARVs in order not to be seen by others. Some younger MSW viewed the collection of ARVs as women's tasks as the man had to earn an income:

> Most men do not like coming for ART at the clinics like this one to receive medication, reason being it is the duty of the wife to come and collect the drugs for the husband, the man being the breadwinner. (MSW with unsuppressed VL-1, 19 yrs)

Young MSW feared to be seen by their peers and to be gossiped about.

> What scares me is that most of the times I am thinking that when I go to collect drugs, I am not going to meet my friends from home there… When I meet them there, what will they think I am doing there? They will start thinking and talking too much about me. (MSW with suppressed VL, 18 yrs)

In addition to anticipating meeting acquaintances at the facility, some men had little confidence in young health staff to keep confidentiality (Berner-Rodoreda et al., 2021b); some younger men feared older men's opinions and felt uncomfortable mixing with female clients

who might gossip about them (ibid). The fear of others and of being stigmatized as a man when seen at an ART clinic permeated through all groups of men, but was particularly strong among younger men. In order not to meet many people, some MSW timed their facility visit early in the morning or late in the evening (ibid), as this stakeholder commented: "When we introduced the late shift, we have seen that there are more men trickling in because of either ego or whatever. They don't want to be seen that they are coming to HIV/AIDS clinic" (male stakeholder, health-based, 5). This strategy was also employed by a stakeholder who linked it to the way men would like to be perceived by others.

> But, because I can access medical care from better facilities, so but even in those better facilities, I went at night. And they said: why did you come at night - is it an emergency? Are you sure you are an emergency that you should come now? I said, it is not an emergency, it is just that I feel more pain now. But it was a strategy because at night there were very few people in the facility, and I said: ah, no, no, no, whatever feedback, you are much better when there are fewer people and they cannot see the sadness in you and so on. So, I think, even myself, you find that at the core of a man is the feeling that you should be seen to be healthy, you should be seen to be stronger all the time and anything to the contrary makes you feel defeated. (male stakeholder, NGO-based-1)

Men attending clinics in the evening were regarded as internalizing HIV-related stigma.

> I think the reason for coming in the evening is hiding, they don't want other people to know that they are on treatment. If you are suffering from malaria, don't you come openly? They go to the hospital openly saying I am suffering from malaria. But this HIV, everyone just thinks that they committed a crime, they trampled on thorns, that is what makes people to be coming here in the evening and if you would have been opening at 4 am, you would have seen people coming in larger numbers. (MSW with unsuppressed VL, 46 yrs) quoted in (Berner-Rodoreda et al., 2021b)

While many men were deeply concerned about what others may think about them and their health, some men, mainly those above 30, had no difficulties even meeting and greeting those from their own community at the health facility thus showing little concern for other people's assumptions:

> The reason why more men don't come, from my point of view is, denial and they are not open, because of ego. Like here most men come in the evening, they let women come and take in the morning, then they will be coming in the evening. But in my case, when I know my date is due, I come either in the morning or in the afternoon. I even greet the women. I have been meeting a lot of women from my side… I sometime wait for them and pick them in my car going back home. (MSW with unsuppressed VL, 39 yrs)

A further concern by MSW on ART irrespective of VL-status was the rattling of the antiretroviral pills when one had to carry one's ART supplies as this could lead to identification as a PLHIV by others (Berner-Rodoreda et al., 2021b). One man used his laptop bag to muffle the sound of the ARVs (ibid). Others spoke of their unease of travelling with ARVs (ibid).

> I would say the way the ARVs bottles are designed is not good, they make some noise, the bottle makes a little bit of noise when you carry them, for example when one boards a bus, they [the bottles] still make me feel uncomfortable with that noise, that even some people in the bus would tell that you are carrying ARVs which is not good because no one wants to be noticed that that one is on ART more especially us men. (MSW with suppressed VL, 39 yrs)

While some MSW showed little concern for the opinions of others, most male ART clients interviewed wanted to avoid being seen at the facility or presumed to be on ART.

3.1.6.5. "Here, doctors treat people well"

Men on ART described experiences with health staff primarily at UFC; some also included prior experiences at other facilities. Irrespective of age and VLS, men on ART viewed health staff (at UFC) as polite, friendly, welcoming, non-judgmental, jovial, helpful and approachable:

> You feel the joy and happiness and when you get to the reception, you really know that you are welcome and they encourage you. When you go to the area where they weigh you, they tell you that they are seeing changes and you are motivated to continue with the treatment. (MSW with unsuppressed VL, 38 yrs-1)

A few men, irrespective of VL status and age reported negative experiences of being shouted at, not given the opportunity to explain their situation or disbelieved by health personnel when they were only late for the re-fill yet had been adherent or were left with pills because of a regimen change – "they never gave us the opportunity to explain our problems and challenges. Other health personnel explain to us kindly whist the others take us as little children" (MSW with suppressed VL, 46 yrs). Some men felt treated disrespectfully.

> But I told them that I did not run out of the drugs, I had some, only that I missed the collecting dates. So, the issue seemed, as if I am not serious and I remember that issue in my mind till now. So, I think if you are telling someone something, you don't shout, but you speak politely that this is what you would have done. I really told the truth that here I only missed the dates of collecting but I had drugs remaining and I have just finished today and I am here to get another dosage. (MSW with unsuppressed VL, 46 yrs)

Both older and younger men wanted to be taken seriously and treated with respect. Some felt that they were not properly assisted when they had an additional ailment such as undiagnosed diabetes or persisting side-effects and decided to seek help elsewhere or to consult a different health staff at the same facility, while others were full of praise and felt treated well: "The doctors here are friendly such that you are able to voice out how you are feeling other than other doctors in some hospitals, who you can barely open up to because of their unfriendliness" (MSW with suppressed VL, 19 yrs-1).

Yet positive staff experiences by far outweighed the negative experiences, and men of different ages and VL status commented on beneficial advice by health personnel helping them understand why one could not get rid of HIV easily through a blood transfusion or restoring their hope when they thought they would die. "You go with a broken heart but the counselling you get encourages you a lot because they show you how the virus operates, if you are not taking medication and other things" (MSW with unsuppressed VL, 38 yrs-1). "I think the counselling that we receive here plays a big role of encouragement" (MSW with suppressed VL, 46 yrs). One young man talked about having found a "mother" at the clinic who helped him with his depression.

> I would say this person understood my situation and that I was going through things like depression... She realized that I was thinking a lot and then she posed a straight question to me… "what do you always think, young man?" If anyone asked me the same question in the past, I would brush it off and say, "I do not think a lot." But I think her approach and positivity she received me with made me to open up as it was unlike how other staff I had met in the hospital used to receive me... I would say, mostly when I walked in here, I used to feel out of place. Staff members behave like they are tired of me and pay less attention. Until I met this "mother" who to my opinion helped me a lot to perceive things differently. (MSW with unsuppressed VL, 26 yrs)

Counselling was often an encouragement to adhere, and men retained what they had been told: ""It is very possible for a person to be found with HIV, follow the advice given at the hospital and be okay without any problems." I remember she [the nurse] said that" (MSW with suppressed VL, 29 yrs). Health staff spoke of counselling on side-effects, living with HIV, adherence, and alcohol intake. Good rapport played an important role for both, MSW on ART and stakeholders, some of whom emphasized the importance of relating with the client: "the person that has been diagnosed HIV-positive becomes my very good friend" (male stakeholder, health-based-2). Others self-critically reflected that harsh words may turn men away from health services. "Men – if you disappoint them today, they won't come the next day" (male stakeholder, church-based-2).

> Sometimes you find that a patient might have probably missed a day to their appointment. The day they come they will be shouted at at the reception. They go to the nurse, they will be shouted at; they go to a clinician they will be shouted. Even if it were me, I would say I thought these guys are friendly. Of course, it is my life, I need to take care of my life. The way I am treated, I don't see this to be the way it should be. So that can push the clients away more especially when it comes to men. I am sure of course that will be the ego part will come in to say: okay, you can't do that to me. I am a man. (male stakeholder, health-based-5)

Men on ART and stakeholders underscored that men needed to be treated with care and respect.

3.1.6.6. Viral load communication and reception by MSW

The understanding of VL varied among MSW on ART (see 3.1.4.8.) with some MSW neither understanding the term nor the reason why ARV regimens were changed, yet stakeholders depicted men as not asking for clarification for fear of appearing ignorant.

> Because we know much as health care providers but we think everybody knows. And at times we would want to start explaining but you are explaining these things in technical terms. Men would not want to say that "I don't understand. I don't know what you mean." They will just be watching you and say: "okay, okay, okay" and off they go. So, you explain these things so they understand the importance of them to have the viral load suppressed. (female stakeholder, academia-based-1)

Stakeholders therefore viewed their obligation in providing information on VLS to male clients in a more comprehensible manner. Yet the reception by men showed that for some, the message was confusing and disheartening to the extent of discontinuing ART:

> R: I went for viral load and they wrote that life was 16%.
>
> I: Viral load was 16%?

R: Yes. Of course, that was when I got very disappointed that I even thought of stopping the treatment because I was not experiencing any pain in my body but they were saying my life percent was at 16%. I mean from 100 to 16%. So, this discouraged me… That was the time I stopped taking medication for one year. (MSW with unsuppressed VL, 38 yrs-1)

Stakeholders struggled to explain a suppressed VL so that it would not be misunderstood. A metaphor commonly utilized was that of the enemy (the virus) sleeping.

> We just say there is an enemy which you fight with when you take the meds. So inside you there is a soldier which fights with the enemies so once you take the ARVs, the soldiers become so powerful, so, yah. So, in the end, the enemy sleeps. (male stakeholder, health-based-6)

This metaphor explained to clients why they needed to keep on taking ART, even when the virus was suppressed as "the enemy" could wake up again. This metaphor was also used against the background of the general difficulties of speaking about a suppressed or undetectable VL in Chichewa where it could mean "cure" (male stakeholder, health-based-3). Other stakeholders described how they changed the documentation of a suppressed VL in order to reduce confusion in clients so that a client seeing the documentation would not stop taking ART and think they are healed.

> Previously, the viral load, the documentation was sometimes, they would say "zero". And once you document and tell the client it is zero, they were like jumping up to say: "The HIV is gone." So, we really need so much as health care workers, we thought: "oh, the documentation shouldn't be 0." (female stakeholder, health-based-4)

The difficulty of the stakeholders can be appreciated in clients' reception of VL results which for some meant that their excellent adherence had led to an HIV-negative test result.

> That is when they congratulated me for taking medication and they told me that most of the viruses had died. Now I am okay and I should continue taking medication for them to keep on dying but also, I went for circumcision and I asked the doctor. He tested me if I had some stuff and they found them and they were surprised why I had them. When they tested me, they told me that I don't have the virus and then I was thinking how could this be possible to be HIV negative and when I came back I realized that this happens to a lot of people when they are adhering to the prescriptions. (MSW with suppressed VL, 18 yrs)

Male clients' reactions ranged from some middle aged to older men taking a treatment holiday being told that the VL is undetectable: "I became normal again, my viral load was good that I even stopped taking the medication for nine months" (MSW with unsuppressed VL, 47 yrs) to believing in being healed one day if one continued to adhere well (see also 3.1.4.3/4.).

> It is also very possible that on another day when the viral load is conducted on the same person to find that the viruses have completely disappeared. This only happens when one puts a lot of effort in the tablet taking. So, this gave me an encouragement to say I should just put in more effort and I will be healed. (MSW with suppressed VL, 29 yrs)

Other MSW described feeling good about being praised and motivated by health staff to continue. A high VL on the other hand was mostly understood by MSW as a clarion call to be more consistent in taking ART. In addition, counsellors would check their sexual and social behavior as another reason for a high VL. One stakeholder presented a mock counselling situation:

> "So, your viral load, after the result has come out, it shows that your viral load is high. So, there might be several problems which would make your viral load not be suppressed. So,

would you please share with us. First things first: Do you take your ARVs at the right time and the right dose?"

So, the client would say: "But I take ART every day. But if you talk of the right time, hmm, I'm not consistent. You know, I take it at any time I remember."

If he says, I take it at the right time, right dose, then you skip to the other tactic to say: "Okay, do you have a sexual partner?"

"Yes, I have a sexual partner."

"Okay, so, how do you guys do about it?"

"Yeah, mostly I don't use condoms."

"Okay, if you are not taking at the right time, what you need to do, you need to set an alarm which would be reminding you. If you are doing it unprotectedly, then you need to discuss with your spouse or we can just give you a letter to come with your spouse, then you can discuss about this." (male stakeholder, health-based-6)

The example demonstrates the probing skills of health personnel to find out the root cause of a high VL, and also highlights how a high VL was viewed not only as the result of being inconsistent in pill-taking but also as the result of unprotected sex. Others would add alcohol use and even tobacco consumption:

> We still give adherence counselling to them to say that you have to have one sexual partner and also on the same there are other things that are also restricted not to be engaged in. We talk of drinking beer, we talk of smoking, the one who is taking ARVs has not to go with this drinking and smoking… When we talk of smoking in the health set-up, we say it's a hazard because if you are smoking, you destroy other parts in your body. So, with that, you are also HIV- positive, the virus which destroys your body immunity so with this mixture, it will make your health not go far, instead you deteriorate. (male stakeholder, NGO-based-4)

This information conveyed in counselling sessions was reflected in MSW's own rationalization of a high VL. While the majority spoke of inconsistent pill-taking, some mentioned other reasons for a high VL: "To my side, it might be because I have taken alcohol. I also happen to have sex with other people which might increase my viral load and yet others even go as far as smoking" (MSW with unsuppressed VL, 31 yrs-1). "The thing that I think I was prone to, was sleeping with a woman without protection… if you were just sleeping with your wife without using condoms, they tell you to stop sleeping with your wife or without condoms" (MSW with unsuppressed VL, 38 yrs-1). A man who depicted engaging in unprotected sex after recovering from TB and feeling fine was counselled by health personnel that that this was the reason for his high VL. Others would also stress a balanced diet. "I think it [the high viral load] is because of insufficient food" (MSW with unsuppressed VL, 24 yrs-2). MSW thus equated a high viral load with insufficient food intake, getting sick, having unprotected sex or many sexual partners, drinking alcohol, needing to improve on adherence or taking ARVs that are incompatible with one's body. The internalized proliferation of reasons for a high VL had a bearing on some men's sexual behavior as shown in 3.1.5.8. and ran the risk of obscuring inconsistent pill-taking as the rationale for a high VL for some MSW.

The conundrum of a few men, aged 35 years and above of having a high VL but maintaining consistent pill-taking was, however, puzzling to clients and stakeholders alike.

R: I am also very surprised that the viral load has gone up because there is no single day that I missed taking my pills.

I: You have never missed any tablet?

R: No, I never missed taking my pills because I have already explained that when I am going to work in the morning, I always carry two bottles of my drugs in my bag. (MSW with unsuppressed VL, 46 yrs)

I am also trying to figure that one out, yah. I have noted that as well but I haven't yet reached a conclusion… Should I be trusting what the clients are saying or I should enquire more?... They can be maybe at a place where they are exhausted with the medications, that they have been on medications for a long time. So, they don't want to do the counselling all over again and how it is important to take their medication and how it is going to improve their life because they already know it. So, they just want to say what you want to hear and then they get done with you and life goes on. (female stakeholder, health-based-7)

Stakeholders encouraged clients to suppress their VL and to be consistent in taking ART, yet they seemed to also mix in advice to discourage men from behavior they regarded as risky. While the personal health benefits of an undetectable VL seemed communicated and clear to MSW, the benefit of an undetectable VL in terms of being non-infectious did not appear to be communicated to MSW on ART and may be related to stakeholders' own doubts or concerns about this message as will be explored in 3.1.6.7.

3.1.6.7. Stakeholder Views on U=U (Undetectable = Untransmittable)

14 out of 16 stakeholders in Blantyre showed unfamiliarity with the slogan U=U (Berner-Rodoreda et al., 2020b). This included all health-based stakeholders. The two male stakeholders who knew the slogan were an academic and an NGO representative.

Stakeholders' reactions were mixed when the slogan was explained with many expressing both merits and concerns. On the positive side, stakeholders viewed the message as incentivizing men to be adherent so that they would not transmit the virus to their partner. "If you stay on a medication for a long time, observe your times… then your viral load is going to be suppressed, then you cannot pass [it] on to your wife or your girlfriend" (male stakeholder, church-based-1). Others saw benefits of U=U and an undetectable VL in terms of good health or not experiencing opportunistic infections, preventing secondary infections, being able to forgo condoms especially in serodiscordant relationships, and U=U acting as an incentive for men to test and take up ART and in epidemic control. The most frequently named concerns by medical and non-medical stakeholders referred to an increase in risk behavior in men who would "quickly revert to their old ways – promiscuous, multiple concurrent partners and so on and so forth" (male stakeholder, NGO-based-1) and the misunderstanding of "undetectable" as "healed" with the danger of discontinuing ART (Berner-Rodoreda et al., 2020b). Additional dangers were seen in men contracting STIs or getting re-infected. Some stakeholders believed that onward transmission could still occur. "Of course, once the viral load is low, the chance is very low that they can transmit. But they still need to be using the condoms" (male stakeholder, health-based-5). Two female stakeholders talked of some "ill-

minded men" who would want to pass the virus onto others and might stop taking ART, if they knew of the benefit of non-infectiousness.

Stakeholders viewed U=U as having most appeal to sexually active men. While many saw young men as benefitting most as they may have problems accessing condoms at boarding school and would want to experiment sexually while maintaining their health and protecting their future partner, others argued that young men were mostly concerned about themselves rather than others. They would engage in risky behavior which necessitated the use of condoms. Discordant couples and mobile men such as truck-drivers, fishermen or soldiers were also viewed as benefitting from U=U as they would engage in sex when displaced and could protect their sexual partner(s). The tension between the benefits of non-infectiousness and the risk of STIs remained unresolved.

> I think the message needs to be accompanied very well, especially for the youth, because they may end up thinking that now that their viral load is undetectable, then they can engage in sexual behaviors which are risky. This may perpetuate transmission of HIV, not only HIV but even sexual transmitted infections and others so there is a need to craft the message well. (male stakeholder, NGO-based-2)

The difficulty in how to convey an undetectable VL in order for the message not to be misunderstood was an important consideration for stakeholders, yet the trust in the message, i.e. that a person with a suppressed VL would not transmit the virus did not seem to be fully endorsed by all stakeholder groups beyond academics. Among health personnel, NGO and church-based implementers it remained unclear to what extent this information reached male clients.

3.1.6.8. The burden of ART monitoring visits

Monitoring visits for clients at UFC included checking vitals, collecting ARVs as well as annual VL tests or additional VL tests because of an unsuppressed viral load. Health staff at UFC depicted facility procedures for VL testing in interviews and informal conversations as follows: When clients start ART, they have to come for monthly appointments. After six months on ART, a VL test is conducted. If the client has stabilized on ART, he/she receives a three months' supply of ARVs. VL results will be communicated at the next appointment: if the VL is suppressed (<1,000 copies/ml blood), the client receives a six months' supply of ARVs. If the VL is unsuppressed (>1,000 copies/ml blood), the client has to undergo three sessions of intensive adherence counselling and receives a three months' supply of ARVs after which another VL test is taken. Clients who had to spend extended periods elsewhere and ran out of ARV supplies, could ask for a one month's emergency supply from another facility.

Men in the community mentioned distance to the health facility as a major consideration. Independent of age, semi-urban or rural location, a majority preferred the local health center. "I would choose [name of facility] because it does not require transport money.

I would be able to go and receive ARVs and also be able to work on my personal stuff when I am back as it is nearer" (MSW in (rural) community, 27 yrs). Two urban community men would select a hospital in Blantyre close to work or sports activities. Convenience and saving time were primary considerations for men in the communities in choosing a health facility and outweighed stigma considerations.

For men on ART transport costs varied from 250 MKW (= 0.28 €) to 6,000 MKW (= 6.78 €). Some men took longer distances into account as they preferred UFC because of the proximity to their workplace or visiting family nearby. Many described having to take more than one bus, sometimes also a motorcycle taxi to get to the facility. Men suppressing their VL talked of the benefit of receiving longer supplies and having to visit the facility less frequently – every 3 or even every 6 months – and therefore having time to save up transport money; yet some still had to walk up to 3 hours as they could not afford transport costs. "When I don't have transport, I come here on foot at least not to miss my appointment" (MSW with suppressed VL, 43 yrs). Transport issues cut through age groups and VL-status. While some younger men thought that "most older men are employed and would be better in terms of transport" (MSW with unsuppressed VL, 19 yrs-1), many older men also struggled to get to the facility: "there are times when I don't have money, so I walk and it takes me two hours to get here at the clinic" (MSW with unsuppressed VL, 53 yrs). Some borrowed money for transport.

Working far away from the facility was a concern for adherence and retention (see also 3.1.4.4.). Men with unsuppressed VLs often mentioned a work displacement as the reason for interrupting ART for a few days or even some months by not having sufficient ARV supplies with them. "I had travelled to Mozambique and the dates which I was supposed to come had found me in Mozambique still doing business… It was therefore difficult for me to access medication" (MSW with unsuppressed VL, 29 yrs-2). Longer treatment interruptions could also result in being switched to 2nd line treatment as the same MSW reported: "I had continued taking the same ARVs and that's the time those ARVs had started acting up. I started feeling like my stomach was protruding and after explaining, they then changed my ARVs" (MSW with unsuppressed VL, 29 yrs-2).

Sending the wife to collect one's ARVs only worked intermittently as a strategy to mitigate transport problems and clashes with work commitments. "When I am so busy I send my wife to collect on my behalf but the problem is that I can't send her twice because they need to weigh me on the scale" (MSW with suppressed VL, 46 yrs).

Retention challenges were also perceived in the mobility of men who may not inform the facility of their dislocation or in men defaulting because of a funeral or work assignments and being ashamed to return. "They are afraid to come back… it brought fears to say, I

travelled to the field then, but I have taken many days to miss the appointments so I cannot go there. I might be shouted at" (male stakeholder, health-based, 6). The same stakeholder assumed that men could re-start at a more convenient clinic – "some might be getting the ART to their closest areas" (male stakeholder, health-based-6). Yet few men seemed to make use of the one month's emergency supplies when they were working elsewhere, either because they were unaware of this possibility or because they were abroad and could not access facilities. The possibility to default because of stigma and not wanting to be recognized in a new location as a PLHIV was also put forward as a reason for men not to access other facilities:

> If we talk of a person who is working here in Blantyre and now has been transferred to go to Lilongwe… And that particular client, if his mind is not stable, he will not be able to go to any facility where he has gone for medication, instead he will just say, who knows me here? I am just a stranger, they don't know that I am HIV-positive, they don't know that I am taking drugs, whatsoever. So, with that mind will make this particular client to be a defaulter. (male stakeholder, NGO-based-4)

Distance to the clinic, poverty or lack of money, conflicting work commitments and the fear of stigma were issues for many MSW on ART which could lead to treatment interruptions and a loss to follow up. UFC addressed a number of these challenges through flexible refill-dates, being able to send the wife for ART collection, longer supplies and the Back to Care Unit which contacted clients after 14 days of a missed appointment to bring them back to UFC to explore why they had not kept the appointment and to provide adherence counselling.

In terms of ARV supplies, the majority of men interviewed with a suppressed VL were happy to receive three to six months supplies, yet some complained about supplies for a shorter period.

> Another thing that I hate is the fact that I have to come here every month… Normally, I am given ARVs for 4 months. But when my viral load is increasing they don't give me ARVs for four months. They start giving me one month's dosage, like if this is November, they will tell me to come next month. (MSW with suppressed VL, 29 yrs)

Being downgraded to a month supply because of a high VL could also result from co-morbidities.

> Mostly they give me three bottles for three months; even now I have been given three bottles, but there was a time when I was found with sugar. I went to step one then, I was receiving one bottle a month, that meant I had to come to the hospital every month. I remember I complained to doctors to at least give me medication for three months to minimize the visits. To me it was costly and tiresome that every month I had to be here. (MSW with suppressed VL, 46 yrs)

ARV supplies were depicted as increasing or falling back to a one month's supply. For some, the reason for collecting ARVs every month was due to being switched to a new regimen as the VL had been increasing on the old regimen. Men's experience thus showed that there was not a linear progression from a high viral load when commencing ART to a sustainably suppressed VL as illustrated in *figure 14*.

Figure 14 Commonly perceived process and time-frame for VLS

Rather, viral load could undulate between suppressed and unsuppressed. Interviews with MSW on ART indicated that problems with VLS were independent of the length of time on ART - the majority of interviewed MSW on ART depicted being on ART for more than seven years.

Men expressed relief when they received longer supplies of ARVs not only in terms of saving money and time for transport but also in having more time for working on far-away farms or for other breadwinning activities "It is not like I have a serious job, no, but like a husband I need to provide for the family and fetch for food for people to eat" (MSW with unsuppressed VL, 38 yrs-2). For young men at school it reduced the stress of having to generate excuses:

> This helped me so much because it has made me to be able to prepare in advance like if the date is a school day I have to find an excuse to come out of school at a good time, while that two months was somehow inconvenient because I had to give excuses time and again so they were asking me, why, so I was just saying, you know what, I have asthma so I go to the hospital for treatment. So, there was only one teacher who was giving me permission to leave, but when they added another month to make three, and my mom went there and said no, he will not be going out regularly. That means I will be able to spend all my time at school without getting any excuse. (MSW with unsuppressed VL, 21 yrs)

Stakeholders acknowledged the burden of frequent facility visits - "I think, people get tired of going for refilling" (female stakeholder, academia-based-1) and underscored the benefit of multi-months drug dispensing for adherence and client convenience:

> We encourage them by giving them six months' supply because they are not sick, so one of the reasons why they would have a high viral load and poor adherence is the frequency of coming to the clinic and usually these men are working away from their homes maybe even in other districts, and most of these are doing manual work so they are likely, if we go to the clinic: "I am not sick so why should I not make money here?" (female stakeholder, health-based-4)

The same stakeholder recounted flexibility even with measuring VL and sending ARVs abroad:

> I remember, having had like this scenario of a man who was in South Africa and was due for his viral load. So, because at that point in time, of course, it was that time when he was supposed to come but the employer said you are not going at this point in time. So, he suggested like okay: "So, can I have my viral load checked right here and send you the results?" So, I said: "yes," of which he did. And indeed, it was undetectable. Yeah, so that meant that then I had to give more drugs for him to send through the wife. (female stakeholder, heath-based-4)

Stakeholder viewed further advantages of MMDD in decongesting the facilities thus shortening waiting times. One stakeholder felt that more radical changes were needed to make ART monitoring and retention male-friendly: facilitating ART collection at all facilities, a point I will come back to in 3.1.6.8:

> We need still to think of different ways of delivering treatment, especially for men. Giving you an example: men are driving trucks, they are driving them to Mozambique, to South

> Africa and then, every time we want them to go to a clinic, I know there is multi-drug dispensing seeing that that is happening now. But the needs of men related to the work, the kind of businesses they are running, it's not compatible with: you come back to this clinic. (male stakeholder NGO, 3)

VLS thus should be seen as process not as a state that is once attained and automatically maintained. Several factors could lead to a high VL such as travelling or being away from home for extended and unexpected periods, be they work or family-related (3.1.4.4.), the wish for better sexual performance and therefore forgoing ART temporarily (3.1.5.8.), depression (3.1.4.5.) and being inconsistent with the exact timing of taking ART (3.1.4.4.). The fear to be stigmatized or not to find a partner seemed to be more pronounced in younger men (3.1.5.4.). Reactions to a new regimen or resistance, undiagnosed co-morbidities or the burden of taking a pill-cocktail for various diseases could also lead to a higher VL, whereas counselling and good adherence, longer ART supplies, and reducing the visits to the clinic were seen as helping adherence and VLS. While UFC had high VLS rates overall (see *table 7*), for younger men, the challenges to adhere, frequent trips to the facility and perceived stigma seemed to be greater barriers than for men with social standing.

3.1.6.9. Recommendations for alternative models of reaching men and delivering ART

Men's experience of health facilities shaped their ideas for improvement of future counselling and service delivery. I will examine men's ideas on education and counselling first.

HIV and ART education, counselling and encouragement played an important role for men of all sub-groups. Since men were difficult to reach solely through facilities, many suggested to educate men "where they are"– through community gatherings involving local leaders and health workers, as suggested by men on ART and men in the communities or at drinking spots and workplaces as suggested by men with suppressed VLs and stakeholders.

> We need to make sure that we target men. We want to target men, talk to them. When they come to the hospital, that's too late. We need to be targeting men in their usual business places, whether work places, business places, in the rural areas – wherever men gather. (female stakeholder, academia-based-1)

> When we meet, when we are at drinking and working places. It is very hard to be telling people these things in their homes but at drinking places is ideal (MSW with suppressed VL, 46 yrs)

Many men on ART, irrespective of VL status, also talked about their own responsibility to become engaged in peer-counselling. "I would intensify on communication and also teaching and counselling others on ART and HIV testing. The people who know these things including us living positively are the people to be responsible for doing this" (MSW with suppressed VL, 38 yrs). Some suggested using media and SMS messages to encourage men to utilize HIV and ART services.

It was predominantly men with unsuppressed VLs who thought a "change of mindset" was necessary for men to overcome their "shyness", their worries and fears, accepting their

status and situation and showing commitment. Men in the community and men on ART felt that men would need encouragement to make use of testing and ART services and should be counselled of the importance and benefits of ART for their lives; “a chance to continue life as normal for example going to school and participate in developmental activities when they take medication as they acquire the strength to do things like everyone else” (MSW with suppressed VL, 19 yrs-1). Information on ART should also include CD4 and VL testing as well as information on alcohol and ART. Male ART clients and male community respondents stressed the need to convey the benefits of ART and adherence and the consequences for not taking ART, with male community respondents postulating to paint a stark picture of the outcome of not taking ART as a wake-up call for men. “You must tell them point blank that if you stop taking treatment you are going to truly die, if you are not going to die but your health will not be good at all” (MSW in community, 32 yrs).

Views on the importance of counselling and education ranged from “a need to still intensify on counselling and civic education on ART till people start responding” (MSW with suppressed VL, 38 yrs) to seeing men responsible for their own decisions, “it is not your problem, if that person is not listening” (MSW with unsuppressed VL, 24 yrs-1).

The vision for improved ART delivery in the form of integrated health services, a hidden or fenced in location with a private entry and exit, privacy of services and friendly, welcoming and empathetic staff was shared by all respondent groups. A community man’s response to designing a new treatment model for men was to depict men as easy to please before listing key requirements.

> Don’t you know that a man doesn’t need much, just get him ram or chibukhu (Malawian beers)… First, there should be adequate equipment for blood testing, secondly there should (be) clean water, thirdly the place should look attractive for instance should have beautiful flowers and fourth the place should be well fenced so that people don’t recognize those who are there. Such places attract more people. The building should also have enough rooms as well as doctors to avoid queuing. Most people wouldn’t want to be noticed on the lines... Some people are talkative when they see anyone, they know on the lines; they may end up spreading the news and most people would shun going to such places. (MSW in community, 44 yrs-1)

Having a nice operational building seemed more important to men in the community than to men on ART in Blantyre as some rural health facilities lacked basics (see 3.1.6.1.). Sunday opening times were regarded more convenient for men: “those health workers should be coming at weekends especially Sundays because this is the day most of the men are at home” (MSW in community, 28 yrs).

In addition to suggestions for more privacy such as providing enough room, having hidden entrances and exits, men in the community and predominantly men with unsuppressed VLs expressed the wish for support in terms of food, refreshments, household items and/or (transport) money. “This will act as an incentive to a lot of people because they

will know that when they go to the hospital, they will come home with something like soap or milk" (MSW in community, 48 yrs-2). A young man suggested compensating men with money for losing out on their work while being at the facility.

> "Instead of keeping yourself busy, you have chosen to come here to take care of your life, therefore here is the K10,000". You will seriously be surprised of how many men would show up. kikkkki (laughing). Men will be surely coming saying that "eeeeh, let's go and take care of our lives." (MSW with unsuppressed VL, 18 yrs)

MSW on ART of different ages and VL status and a man in the community suggested to enhance follow-up by the facility through phone-calls and home visits, especially with implementing six months supplies. "Anything can happen along the way. As a service center, there is a need to have a database of us and to be checking on us once in a while; this encourages patients to adhere to taking medication" (MSW with suppressed VL, 30 yrs).

The vision of all clinics offering ART and being able to collect ART from any clinic seemed particularly important to men in the community and men with unsuppressed VLs. A stakeholder proposed a national ART data base to enable men to collect ART from a clinic close to their workplace rather than having to come back to the clinic where they were initiated on ART.

Younger and middle-aged men on ART suggested separating men and women in the facility. The only man above 40 who talked about gender separation did so on behalf of the youth. One man advocated male-only clinics. "Most men would want to access such services from a place which is women-free" (MSW with suppressed VL, 29 yrs). Some young men favored separating young and old or offering separate services for youth. "I suggest that youth should have their own special department to access services, they should not be mixed with older people" (MSW with unsuppressed VL, 26 yrs).

While many stakeholders felt that MMDD would be advantageous for men, and while many men appreciated less frequent clinic visits to save on transport costs and pursue work (3.1.6.8.), men in the community and predominantly men with unsuppressed VLs hoped for the introduction of long-lasting antiretroviral agents, either as pills to be taken less frequently or injections as this would ease their adherence and retention. This view was also shared by a man with a suppressed VL who painted the vision that "in future we may have a vaccine that we will use once a year or maybe once in a life time and stop this way of taking drugs on a daily basis" (MSW with suppressed VL, 43 yrs).

Another innovation mentioned by all respondent groups, particularly men on ART, was to introduce entertainment to attract more men for HIV and ART services – either into existing facilities and clubs or to create new set-ups for men to socialize. Ideas ranged from incremental changes like introducing board games such as the Malawian game "bawo", offering a pool-table, showing sports on TV to more substantial changes of offering food and

refreshments, even drinks, betting services, dances or music or using sport fields to attract clients at a location or club, which would also offer HIV and ART services. The main aim would be to make men feel comfortable in an environment they prefer:

> The facility would have things that men like, like football, so they would have like a TV that would be screening football and maybe golf for those that like golf, maybe like a pool-table, uhm, like a minibar, not that we will be encouraging drinking but just a minibar because that's what they would be doing if we are not monitoring them, yah. Just a nice structure, really. (female stakeholder, health-based-7)

> Many like to be in places like the bottle stores, this is where more men are found regularly. We cannot say, let's open a bottle at the health facility, no. But if we can have things like pool tables where most men can be found, because many men enjoy playing that game that is also why they are mostly found in bottle stores. Just a decent place like having pool tables. Some drinks and a bray stand where men can be enjoying eating meat there, but not a noisy place, it should have summer huts or like small covered shades where people should be enjoying drinks and other food stuffs… they forget all other things because of that environment, and you attach your VCT site or ART center to that thing, then you can easily capture more men. (MSW with unsuppressed VL, 37 yrs)

Offering ART at work or business places was suggested by a number of men on ART with suppressed VLs and stakeholders, "so that everyone who is working here at X (his workplace) knows that on such, such a day we will have an ART clinic" (male stakeholder, academia-based-2). Others mentioned that ART should be available at places which are convenient for men such as shops, colleges, schools, sport facilities or that mobile ART services should reach those places, "for example, assign ambulances to be visiting clubs, bars and social gatherings and conduct ART services. This is happening, but it's more targeting women than men, they should target all genders" (MSW with suppressed VL, 36 yrs). Some also suggested adapting mobile clinics for ART delivery in communities yet in order to remove stigma, testing and treatment for other illnesses should be incorporated.

> We can even do community ART clinics. Of course, it's a bit challenging because of the same stigma and discrimination where you go into the community and say, now we have come, there's a special clinic, but we can probably offer it as a package like mobile clinics, and then during the mobile clinics, those that are taking ART, they can also be offered ART along with other drugs for various conditions, yah. (male stakeholder, NGO-based-2)

Novel ideas for ART delivery were predominantly suggested by men in the community and stakeholders. Some men in the community proposed to use "special agents" for delivering ART.

> Maybe if they had agents to give them the ARV drugs so they can just reach them out in their locations in secret but not publicly like how airtel agents do. It could be difficult if people realize what is happening. But these could actually visit them at their homes or even at night so they should not be seen. So, having an agent would be the best way of reaching people especially in the outskirts. (MSW in community, 27 yrs-1)

Agents could be older men who enjoy the trust of younger men as proposed by a 26-year-old man in the community. Men would also like home services to include VL testing as reported by a stakeholder:

> So, they would say: "ah, I don't want to be getting my viral load at the facility but I would like you to come to my house and just take the sample, that's okay, I am okay. Give me the

> treatment. I'm okay. I don't want to visit the facility". (male stakeholder, health-based-3)

Another stakeholder preferred to have a self-test kit for VL so it could be used anywhere and privately. "So, I would love to have that viral load test kit, you just have to get it whenever you need it" (male stakeholder, church-based-2).

Not being identified as a person living with HIV, having ART delivered and VL taken at a convenient place and time without being seen by others played an important role for men. Further ideas were to offer ART through peer groups or community ART groups (CARGS) where one member would collect ART for others; clubs for youth and clubs for men were also mentioned as places where youth and men feel comfortable to share experiences and could receive ART. Some stakeholders suggested a dispenser or automatic teller-model where men would have a card with their ART details.

> Men like going to a club watching football. And there is a dispenser around that one. No-one could know that I am walking in specifically just to get my drug, it's simply a club that men go to when in fact I'm getting my supply. That to me is something else than walking to a hospital. It's like I'm sick, I need to be healed, I need to be told, I need to be lectured about that, so something like different. Not necessarily like a pharmacy, something that it's easy to access but still maintains what the system requires to identify you, to know you, to be able to know where these drugs are going and something like that, yah. (male stakeholder, NGO-based-3)

While the above stakeholder had seen this model piloted in South Africa, another stakeholder who had never heard about the model came up with a similar idea born out of the experience that men do not like to talk to health personnel:

> Perhaps, if we could have a set-up whereby …the men should not have any contact with any provider, if ever we could have that model like the way we get water from a dispenser. If we could just have a machine that can interact with the men, ask them what the problems are, count their pills, and give out the medications without anyone knowing that they came. Maybe that could be ideal which is a dream… I'm not sure but if we could have mechanisms where we bypass or we minimize male clients' access to health care workers and other people as well, other clients, that will work best. (female stakeholder, health-based-8)

For stakeholders, offering male-friendly services meant targeting services at men with longer opening times, Saturday clinics, fast and integrated services offered by male staff and entertainment. For men on ART and in the communities, entertainment and socialization, the possibility to receive treatment at home or in the community, an adequate and hidden facility with ample and friendly staff, integrated services and longer opening hours, incentives and a separation of men and women were more frequently named – thus the overarching concern was not to be seen and not to be wasting one's time and money by waiting in a health set-up with nothing interesting to offer to men. A stakeholder summarized it as "they want an area where it is not like perceived like an HIV clinic" (male stakeholder, health-based-3).

3.1.6.10. Synopsis of Facilitators and Barriers for men's ART engagement at facility level

Table 16 MSW's facilitators and barriers of ART uptake and retention at health facility level

Facilitators	Barriers
Offering various forms of testing: mobile testing, testing after hours, couple testing, PICT, self-testing	Facility-based VCT and ART services
Attractive and well-equipped facility	Poor state of health facilities (electricity, water)
Private facility or privacy and non-exposed location	Exposed site of facility; not wanting to be seen at facility or identified as PLHIV (rattling pills)
Longer opening hours	Restrictive opening times
Preference for longer acting agents (pills/injection)	Transport and frequent visits clashing with work commitments
ART at all clinics in country; free choice of where to collect ART; national data base of all facilities	Having to come back to one facility when working far away
Male-friendly clinics; for younger men: separation of men and women	Women-dominated clinics, no youth friendly clinics, "boring" set-up
Friendly, flexible staff	Non-empathetic staff
Fast service	Long waiting periods and congestion
Education and Counselling in and outside of facilities – communication of benefits of VLS	Facility education does not reach enough men
Service Delivery in community and door to door or locations where men feel comfortable - through novel delivery options (ATM, VL self-test)	being bound to one facility even when abroad
Entertainment and/or sports at facility	
Incentives for men	

3.2. The Eswatini PrEP Case Study

This mixed methods study on PrEP and MSW was nested within the overall PrEP demonstration project in Eswatini. In the quantitative sub-sections (3.2.1. and 3.2.2.) I will describe statistical data for clients undergoing the risk assessment and for PrEP initiators at the six public health clinics of the demonstration project and will present analytical statistics for the risk of HIV and the probability of initiating PrEP for the entire sample and for men as a sub-group. In 3.2.3 – 3.2.6 I will describe and analyze qualitative findings according to the four levels of the socio-ecological model (SEM) see *figure 15*, with the cross-cutting and intersecting issues of masculinity, stigma and the life-course. Differences within and between sub-groups of respondents will be highlighted in the sub-chapters and the analysis in terms of facilitators and barriers for taking PrEP summarized as a synopsis for each SEM level.

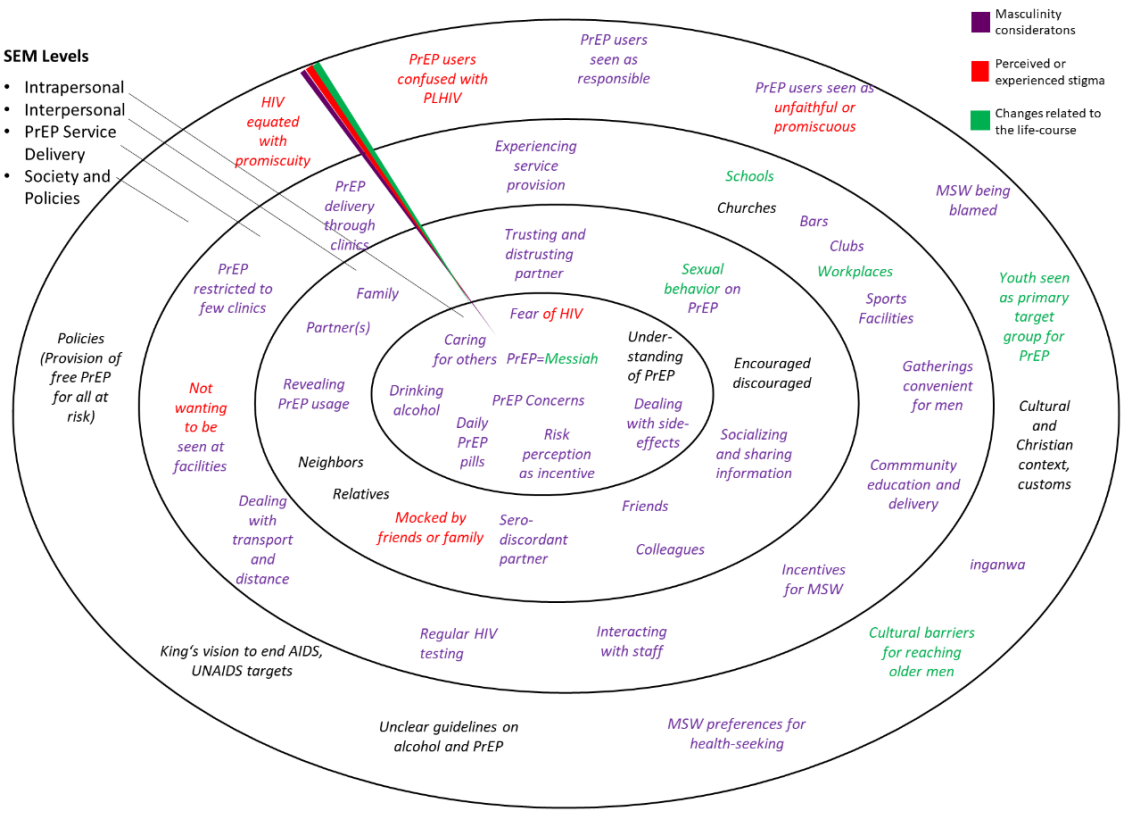

Figure 15 Socio-ecological model - men and PrEP study with cross-cutting themes

Personal motivations and concerns, relationships and reference groups, facility-based factors, community views and norms and government policies had a bearing on MSW's decisions on initiating and continuing PrEP as I will describe in 3.2.3 to 3.2.6..

3.2.1. Descriptive Statistics - risk and PrEP engagement

PrEP was introduced in Eswatini as an additional HIV prevention method for the general population at risk in 2017. The willingness to engage with PrEP thus presumed considering oneself at risk of an HIV infection. Quantitative data from the demonstration project showed the following characteristics of PrEP clients who underwent risk assessments and took up PrEP, see *table 17*.

Table 17 Characteristics of PrEP clients in six primary care clinics in Eswatini between August 2017 and January 2019[ǂ] (Berner-Rodoreda, 2020)

	Total	**Men**	**Women**	**Total**	**Men**	**Women**
Age, mean (SD[§])	**29.0 (10.4)**	31.5 (11.4)	28.1 (9.8)	**30.1 (9.1)**	32.0 (10.6)	29.2 (8.4)
	Number of clients (%) undergoing risk assessment			**Number of at risk clients (%) initiating PrEP**		
	2154	504	1650	**517**	144	373
At risk	**1531 (71.08)**	392 (77.8)	1139 (69.0)			
Missing, n (%)	***32 (1.5)***	*9 (1.8)*	*23 (1.4)*			
Age group n (%)						
16-25 years	**860 (39.9)**	146 (29.0)	714 (43.3)	**167 (32.3)**	38 (26.4)	129 (34.6)
26-35 years	**867 (40.3)**	225 (44.6)	642 (38.9)	**223 (43.1)**	63 (43.8)	160 (42.9)
36-45 years	**282 (13.1)**	80 (15.9)	202 (12.2)	**91 (17.6)**	27 (18.8)	64 (17.2)
>45 years	**115 (5.3)**	50 (9.9)	65 (3.9)	**36 (7.0)**	16 (11.1)	20 (5.4)
Missing, n (%)	***30 (1.4)***	*3 (0.6)*	*27 (1.6)*			

	Total	Men	Women	Total	Men	Women
	Number of clients (%) undergoing risk assessment			Number of at risk clients (%) initiating PrEP		
Education, n (%)						
No formal schooling	**69 (3.2)**	25 (5.0)	44 (2.7)	**28 (5.4)**	12 (8.3)	16 (4.3)
Some or completed primary school	**394 (18.3)**	98 (19.4)	296 (17.9)	**135 (26.1)**	42 (29.2)	93 (24.9)
Some or completed secondary school	**1194 (55.4)**	232 (46.0)	962 (58.3)	**311 (60.02)**	74 (51.4)	237 (63.5)
Some or completed tertiary education	**109 (5.1)**	42 (8.3)	67 (4.1)	**35 (6.8)**	15 (10.4)	20 (5.4)
Missing, n (%)	***388 (18.0)***	*107 (21.2)*	*281 (17.0)*	***8 (1.5)***	*1 (0.7)*	7 (1.9)
Relationship status, n (%)						
Multiple partners	**135 (6.3)**	115 (22.8)	20 (1.2)	**68 (13.2)**	59 (41.0)	9 (2.4)
One partner, living together	**687 (31.9)**	104 (20.6)	583 (35.3)	**205 (39.7)**	45 (31.2)	160 (42.9)
One partner, not living together	**918 (42.6)**	155 (30.8)	763 (46.2)	**239 (46.2)**	37 (25.7)	202 (54.2)
Single, no relationship	**63 (2.9)**	26 (5.2)	37 (2.2)	**5 (1.0)**	3 (2.1)	2 (0.5)
Missing, n (%)	***351 (16.3)***	*104 (20.6)*	*247 (15.0)*			
Member of target population[#], n (%)	**1183 (54.9)**	148 (29.4)	1035 (62.7)	356 (68.9)	72 (50.0)	284 (76.1)
Unprotected sex						
No	**413 (19.2)**	102 (20.2)	311 (18.9)	84 (16.2)	26 (18.1)	58 (15.5)
Yes	**1357 (63.0)**	286 (56.8)	1071 (64.9)	428 (82.8)	116 (80.6)	312 (83.6)
Missing or blank	**384 (17.8)**	116 (23.0)	268 (16.2)	5 (1.0)	2 (1.4)	3 (0.8)
Partner HIV-positive or unknown HIV-status						
No	**782 (36.3)**	141 (28.0)	641 (38.9)	107 (20.7)	26 (18.1)	81 (15.5)
Yes	**988 (45.9)**	247 (49.0)	741 (44.9)	405 (78.3)	116 (80.6)	289 (77.5)
Missing or blank	**384 (17.8)**	116 (23.0)	268 (16.2)	5 (1.0)	2 (1.4)	3 (0.8)
Having (had) STIs						
No	**1548 (71.9)**	280 (55.6)	1268 (76.9)	420 (81.2)	102 (70.8)	318 (85.3)
Yes	**221 (10.3)**	107 (21.2)	114 (6.9)	91 (17.6)	40 (27.8)	51 (13.7)
Missing or blank	**385 (17.9)**	117 (23.2)	268 (16.2)	6 (1.2)	2 (1.4)	4 (1.1)
Use of PEP						
No	**1757 (81.6)**	383 (76.0)	1374 (83.3)	505 (97.7)	140 (97.2)	365 (97.9)
Yes	**11 (0.5)**	2 (0.4)	9 (0.6)	6 (1.2)	1 (0.7)	5 (1.3)
Missing or blank	**386 (17.9)**	119 (23.6)	267 (16.2)	6 (1.2)	3 (2.1)	3 (0.8)
Sex under influence of drugs or alcohol						
No	**1640 (76.1)**	298 (59.1)	1342 (81.3)	454 (87.8)	102 (70.8)	352 (94.4)
Yes	**128 (5.9)**	88 (17.5)	40 (2.4)	57 (11.0)	39 (27.1)	18 (4.8)
Missing or blank	**386 (17.9)**	118 (23.4)	268 (16.2)	6 (1.2)	3 (2.1)	3 (0.8)

ǂ Percentages shown have been calculated excluding those with a missing value for that variable.

§ Standard Deviation

Target populations consisted of: women between 16 and 25 years of age, those in a relationship with an HIV-positive partner, sex workers, men having sex with men, those with a current sexually transmitted infection, pregnant women, and lactating women.

The final data set included 2,154 clients who underwent a risk assessment at one of the six public health clinics between August 2017 and January 2019, of which 23.4% were male. Men constituted 27.9% of those initiating PrEP (n=517) thus showing women as the main beneficiaries of PrEP. The mean age of clients initiating PrEP: 30.1 (± 9.1) years was slightly higher than those screened for risk 29.0 (±10.4) years. Male clients screened for risk were on average >3 years older than female clients, i.e. 31.5 (± 11.4) years compared to 28.1 (±9.8) years. For PrEP initiators, the same pattern emerged with the mean age of male clients at 32.0 years (±10.6) compared to 29.2 (±8.4) years for female clients.

73.6 % of men compared to 82.2% of women screened for risk and 70.2% of men compared to 77.5% of women initiating PrEP were below 35 years. 80.6% of men (and 88.4% of women) initiating PrEP had been educated up to primary or secondary level with the majority in both gender groups having completed secondary school. “Male PrEP initiators predominantly had multiple partners (41%) and/or lived together with a partner (31.2%)” (Berner-Rodoreda et al., 2020c); “having unprotected sex”, “not knowing their partner’s HIV-status” or “having an HIV-positive partner” were dominant risk situations for male and female PrEP initiators (see *table 17*); a majority of female PrEP initiators, by contrast, did not cohabitate with their partner (54.2%) and hardly mentioned multiple partners (2.4%) which could be due to social desirability factors. Not surprisingly, a much higher percentage of women than men screened for risk (62.7 versus 29.4) and initiating PrEP (76.1 versus 50.0) belonged to a target population as this population consisted of more female sub-groups, see legend for *table 17*. A higher percentage of women screened for risk (64.9) and initiated on PrEP (83.6) mentioned “unprotected sex” than their male counterparts (56.8) and (80.6). Conversely, among those screened for risk, “STIs” and “sex under the influence of alcohol and drugs” were named by a higher percentage of men than women (a difference of 14 and 15% respectively) with PrEP initiators showing even more pronounced gender differences (Berner-Rodoreda et al., 2020c). The use of PEP was a minor risk situation for both men and women judged by the low percentage (below or about 1%) with a slightly higher percentage of women screened for risk and initiating PrEP mentioning PEP (0.6 and 1.3) versus male clients (0.4 and 0.7).

3.2.1.1. Rationale for initiating PrEP

The most important reasons to start PrEP, mentioned more than 30 times by male PrEP initiators related to being afraid of HIV (n=71), having multiple partners (n=39) having a partner of unknown status (n=33) or an HIV-positive partner (n=32) with the fear of HIV as the overarching reason for PrEP uptake. Reasons mentioned 10 times and more were: not wanting to use condoms (n=14) or the partner having multiple partners (n=10), i.e. showing that in the

perception of men unfaithfulness by the partner was also a reason for feeling vulnerable to an HIV infection.

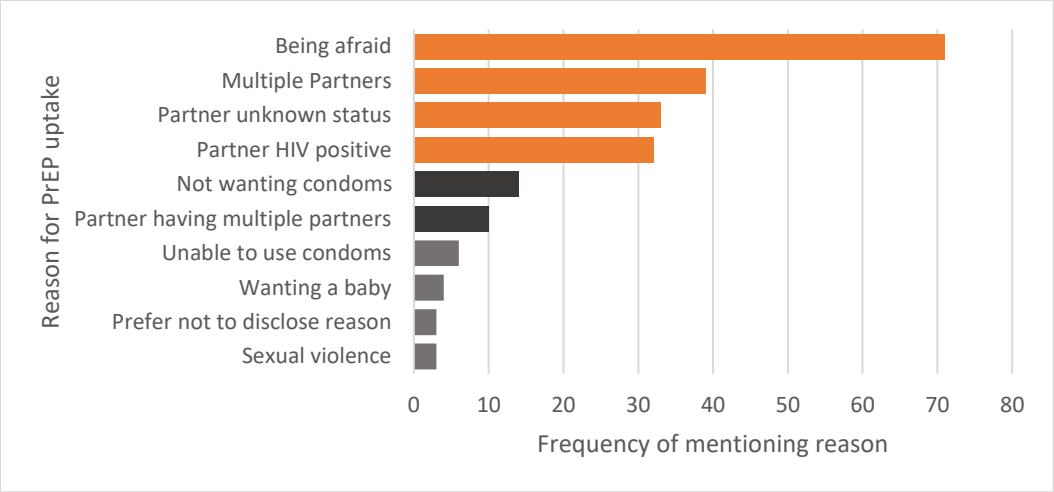

Figure 16 Reasons for men's uptake among those initiated (n= 135) – multiple reasons could be mentioned. Adapted from (Berner-Rodoreda et al., 2020c)

Being unable to use condoms, wanting a baby, fear of sexual violence were minor reasons mentioned by men, yet the fact the sexual violence was mentioned at all by some men shows that this was not just an issue for women but also for men, see *figure 16*.

3.2.1.2. Reasons for male PrEP initiators to visit clinics

Reasons for clinic visits among men initiating PrEP (n=144) included PrEP initiation, VCT, consulting the outpatient department (OPD), suspecting a sexually transmitted infection (STI), accompanying the partner for ANC, collecting one's PrEP pills or other reasons. The following three reasons were paramount for MSW: suffering from an ailment (OPD, n=52), wanting to test for HIV (VCT, n=45) and consulting the clinic specifically for PrEP (n=35). VCT was the most important reason in rural areas, followed by OPD and PrEP; OPD was the most important reason in semi-urban areas followed by PrEP and STIs, the latter seemingly playing a minor role in rural areas. Antenatal services and collecting PrEP pills were minor reasons and only mentioned in rural areas, see *table 18*.

Table 18 Reasons for men on PrEP to visit a health facility, Eswatini (multiple reasons could be mentioned)

	Facility	no. of men	PrEP	VCT	OPD	STI	ANC	refill	other
Rural	Ndzingeni	39	8	20	11	0	0	0	0
	Horo	24	10	6	6	2	0	1	0
	Ntfonyeni	20	3	6	10	2	0	1	0
	Ndvwabangeni	20	3	8	7	1	2	0	1
	Subtotal rural	***103***	***24***	***40***	***34***	***5***	***2***	***2***	***1***
Semi-Urban	Hhukwini	9	2	2	4	0	0	0	1
	Siphocosini	32	9	3	14	9	0	0	0
	Subtotal semi-urban	***41***	***11***	***5***	***18***	***9***	***0***	***0***	***1***
	Total	**144**	**35**	**4**	**52**	**14**	**2**	**2**	**2**

3.2.1.3. Rationale for declining PrEP

For men who underwent the risk assessment and were willing to provide a rationale for their decision to decline PrEP (n=89), having to think about it (n=53) was the paramount reason for non-initiation. Not seeing oneself at risk (n=23) and having to take pills daily (n=12) were further important reasons for men. Consulting the partner, side-effects, the fear of being judged by others, time for follow-up visits, using other prevention methods and having to undergo an HIV-test seemed to play a minor role for men, see *figure 17*.

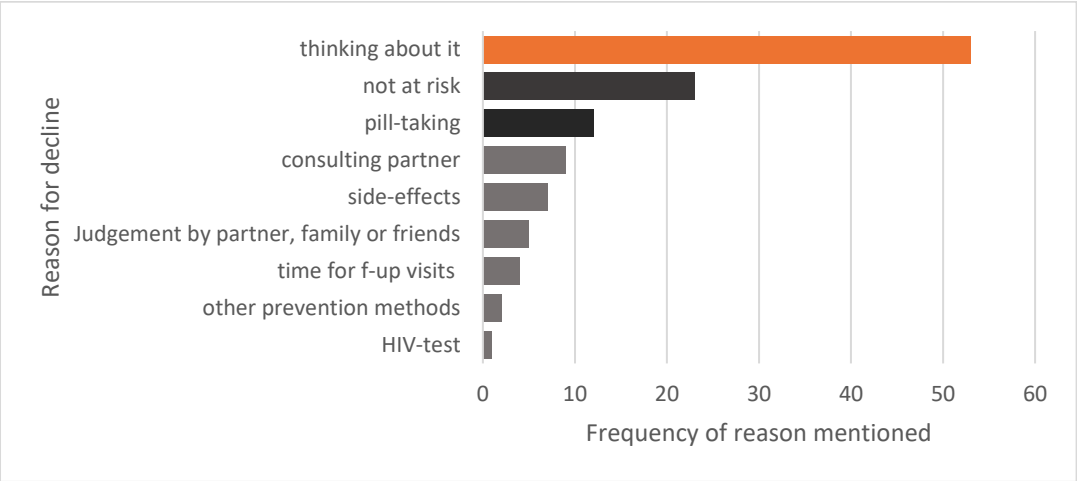

Figure 17 Reasons for declining PrEP among men at risk (n=89)
Note: Clients could provide multiple answers.

3.2.1.4. PrEP retention

For the duration of the demonstration project, a long-term commitment to PrEP was rare for men. Overall retention of male clients in the sample showed a steep loss of 50% in the first 30 days and about 70% over 180 days, see *figure 18*.

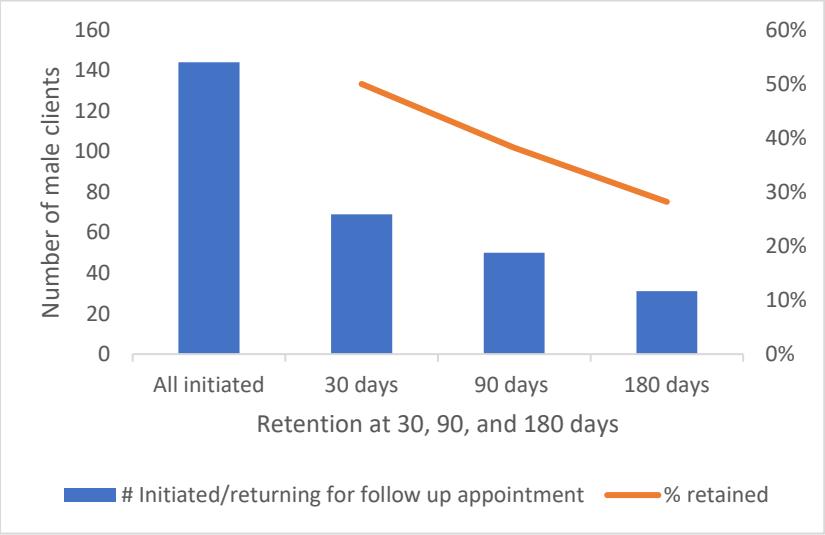

Figure 18 Male Retention at 30 days, 90 days and 180 days. Adapted from (Berner-Rodoreda, Geldsetzer, et al., 2020).
Note: the denominators are: 138 for retention up to 30 days; 131 for retention up to 90 days and 110 for retention up to 180 days.

3.2.2. Analytic Statistics

Modified Poisson regressions were performed for those approached about PrEP with the outcome “at risk” and for the sub-sample of clients at risk with the outcome “initiated on PrEP”.

3.2.2.1 Outcome: at risk

In univariable regressions for the entire sample, the variables sex, age, education, relationship status and PrEP as reason for the clinic visit were significantly associated with being at risk of HIV, see *table 19*. Male sex, age above 45, and PrEP as a reason for the clinic visit were positively associated with being at risk, the latter showing a high relative risk for HIV exposure (RR: 1.43 (1.30-1-58)). Having received some primary (RR: 0.91 (0.88-1.00)) or secondary education (RR:0.85 (0.74-0.99)) was negatively associated with the risk of an HIV infection compared to those with no schooling. Compared to the reference group of having multiple partners, negative risk association was most pronounced in singles (RR: 0.30 (0.25-0.36)) followed by those living together with their partner (RR: 0.74 (0.66-0.83)) and those not living with a partner (RR: 0.76 (0.70-0.83)).

For the subset of men only, the age group 26-35 was positively associated with being at risk (RR: 1.07 (1.02-1.13)) as was being a member of the target population (RR: 1.31 (1.16-1.47)) and PrEP as the reason for the clinic visit (RR:1.33 (1.19-1.48)), the latter two variables showing a stronger positive association than age for being at risk of HIV, see *table 19*.

In multivariable regressions for the entire data set, all age groups, belonging to a target population and PrEP as reason for the clinic visit were positively associated with being at risk of HIV. Relationship status remained negatively associated with risk for an HIV infection in multivariable regressions compared to the reference group of having multiple partners. Point estimates were slightly lower than in univariable regression results.

For the sub-set of men, the positive association of the age-group 26-35 years with the risk of HIV exposure was enhanced through multivariable regressions (RR: 1.10 (1.06-1.14)) as was being a member of a target population (RR: 1.35 (1.18-1.54)). PrEP as reason for clinic visit, by contrast, showed a slightly weaker but still a strong positive association with the risk of HIV exposure in multivariable regressions (RR: 1.27 (1.15-1-39)) compared to univariable regressions thus showing mitigating effects of covariates, see *table 19*.

Table 19 Uni- and multivariable modified Poisson regressions for clients in 6 nurse-led clinics in Eswatini with the outcome "at risk for HIV" between August 2017 and January 2019

	RR (95% CI) **Clients at risk** (n=2122)	P-value	RR (95% CI) **Men at risk** (n=495)	P-value
	UNIVARIABLE			
Sex				
Female	*Reference Group*			
Male	1.13 (1.05-1.22)	0.002	Omitted	
Age				
16-25	*Reference group*			
26-35	1.05 (0.96-1.14)	0.258	1.07 (1.02-1.13)	0.006
36-45	1.03 (0.94-1.13)	0.539	1.03 (0.90-1.18)	0.623
>45	1.12 (1.06-1.19)	0.000	1.08 (0.97-1.20)	0.170
Education				
No schooling	Reference group			
Primary (some/completed)	0.91 (0.88-1.00)	0.050	0.90 (0.70-1.15)	0.391
Secondary (some/completed)	0.85 (0.74-0.99)	0.033	0.97 (0.75-1.25)	0.801
Tertiary (some/completed)	0.90 (0.73-1.12)	0.357	0.83 (0.55-1.26)	0.379
Relationship				
Multiple partners	*Reference group*			
Partner, living together	0.74 (0.66-0.83)	<0.001	0.82 (0.71-0.95)	0.008
Partner, not living together	0.76 (0.70-0.83)	<0.001	0.75 (0.68-0.82)	<0.001
Single	0.30 (0.25-0.36)	<0.001	0.28 (0.19-0.42)	<0.001
Target Population	1.09 (0.97-1.23)	0.155	1.31 (1.16-1.47)	<0.001
PrEP-reason for clinic visit	1.43 (1.30-1-58)	<0.001	1.33 (1.19-1.48)	<0.001
	MULTIVARIABLE			
Sex				
Female	*Reference group*			
Male	1.08 (0.98-1.20)	0.117	Omitted	
Age				
16-25	*Reference group*			
26-35	1.10 (1.03-1.19)	0.008	1.10 (1.06-1.14)	<0.001
36-45	1.11 (1.01-1.23)	0.026	1.05 (0.94-1.17)	0.429
>45	1.15 (1.06-1.25)	0.001	1.13 (0.92-1.40)	0.248
Education				
No schooling	*Reference group*			
Primary (some/completed)	0.99 (0.89-1.10)	0.820	1.02 (0.80-1.30)	0.843
Secondary (some/completed)	0.93 (0.80-1.08)	0.335	1.14 (0.87-1.49)	0.351
Tertiary (some/completed)	0.97 (0.80-1.17)	0.740	0.95 (0.65-1.38)	0.780
Relationship				
Multiple partners	*Reference group*			
Partner, living together	0.75 (0.66-0.86)	<0.001	0.80 (0.70-0.91)	0.001
Partner, not living together	0.80 (0.73-0.89)	<0.001	0.79 (0.72-0.86)	<0.001
Single	0.31 (0.26-0.37)	<0.001	0.29 (0.20-0.41)	<0.001
Target Population	1.22 (1.07-1.39)	0.003	1.35 (1.18-1.54)	<0.001
PrEP-reason for clinic visit	1.33 (1.25-1.43)	<0.001	1.27 (1.15-1-39)	<0.001

3.2.2.2. Outcome: PrEP Initiation

Univariable modified Poisson regressions showed age, education, relationship status, target population and PrEP as a reason for the clinic visit to be significantly associated with taking up

PrEP but not sex, see *table 20*. PrEP as reason for clinic visit (RR: 3.79 (3.44-4.16)), being a member of a target population (RR: 1.81 (1.14-2.87)) and the age group 36-46-year-olds (RR: 1.66 (1.41-1.96)) showed the strongest positive association for taking up PrEP.

For the sub-set of men, only relationship status, being a member of the target population and PrEP as reason for the clinic visit were significantly associated with initiating PrEP. Not living together with a partner (RR: 0.47 (0.26-0.82)) and being single (RR: 0.22 (0.12-0.43)) reduced the relative risk for men to take up PrEP compared to the reference group of men with multiple partners just as it did in the entire data set, yet living together with a partner was not significantly associated with initiating PrEP among the sub-set of men (p= 0.109). As in the overall data set, PrEP as reason for clinic visit and being a member of the target population were strongly positively associated with taking up PrEP among men only (RR: 2.84 (2.41-3.33)) and (RR: 2.41 (1.51-3.82)) respectively.

Multivariable regressions for the entire data set showed age, relationship, target population and PrEP as reason for clinic visit but not sex or education significantly associated with PrEP initiation. PrEP as reason for clinic visit (RR:3.22 (2.97-3.48)), target population (RR:1.39 (1.16-1.67)) and the age groups 26-35 (RR:1.30 (1.02-1.67)) and 26-45 (RR:1.47 (1.23-1.75)) were positively associated with PrEP initiation but this effect was slightly smaller than in univariable regressions. The negative association of relationship status with PrEP initiation compared to having multiple partners was not as pronounced in multivariable regressions thus showing that covariates had a slight positive effect on the outcome of PrEP initiation.

For the male sub-set, only the variables relationship, target population and PrEP as reason for clinic visits were significantly associated with PrEP initiation in multivariable regressions. As for the whole data set, the comparisons of multivariable and univariable regressions for the male-only sub-set showed a slightly negative effect of covariates on the strong positive association of PrEP as reason for clinic visit and being a member of a target population for PrEP uptake. Multivariable regressions showed a slightly increased relative risk of initiating PrEP in men who did not cohabitate with their partner (RR: 0.51 (0.30-0.87)) and in single men (RR: 0.25 (0.12-0.49)) compared to univariable regressions (RR: 0.47 (0.26-0.82)) and (RR: 0.22 (0.12-0.43)) respectively, see *table 20*.

Table 20 Uni- and multivariable modified Poisson regressions among clients for the outcome initiation on PrEP in 6 nurse-led clinics in Eswatini between August 2017 and January 2019.

	RR (95% CI) **Clients initiated** (n= 1531)	P	RR (95% CI) **Men initiated** (n= 392)	P
		UNIVARIABLE		
Sex				
Female	*Reference Group*			
Male	1.26 (0.98-1.62)	0.068	Omitted	
Age				
16-25	*Reference group*			
26-35	1.32 (1.01-1.73)	0.039	1.08 (0.78-1.48)	0.651
36-45	1.66 (1.41-1.96)	<0.001	1.30 (0.91-1.85)	0.150
>45	1.61 (1.36-1.91)	<0.001	1.23 (0.90-1.67)	0.187
Education				
No schooling	Reference group			
Primary (some/completed)	0.84 (0.57-1.26)	0.405	0.89 (0.56-1.41)	0.628
Secondary (some/completed)	0.64 (0.43-0.96)	0.029	0.66 (0.40-1.10)	0.114
Tertiary (some/completed)	0.79 (0.48-1.31)	0.362	0.74 (0.43-1.29)	0.289
Relationship				
Multiple partners	*Reference group*			
Partner, living together	0.59 (0.48-0.73)	<0.001	0.84 (0.68-1.04)	0.109
Partner, not living together	0.52 (0.44-0.61)	<0.001	0.47 (0.26-0.82)	0.009
Single	0.16 (0.08-0.32)	<0.001	0.22 (0.12-0.43)	<0.001
Target Population	1.81 (1.14-2.87)	0.011	2.41 (1.51-3.82)	<0.001
PrEP-reason for clinic visit	3.79 (3.44-4.16)	<0.001	2.84 (2.41-3.33)	<0.001
		MULTIVARIABLE		
Sex				
Female	*Reference group*			
Male	1.11 (0.83 - 1.48)	0.469	Omitted	
Age				
16-25	*Reference group*			
26-35	1.30 (1.02-1.67)	0.034	0.94 (0.84-1.05)	0.282
36-45	1.47 (1.23-1.75)	<0.001	1.02 (0.82-1.26)	0.891
>45	1.24 (0.94-1.62)	0.127	0.98 (0.68-1.42)	0.924
Education				
No schooling	*Reference group*			
Primary (some/completed)	1.09 (0.76-1.55)	0.641	1.03 (0.76-1.40)	0.848
Secondary (some/completed)	0.88 (0.60-1.31)	0.544	0.82 (0.57-1.17)	0.272
Tertiary (some/completed)	0.92 (0.59-1.41)	0.692	0.85 (0.59-1.24)	0.402
Relationship				
Multiple partners	*Reference group*			
Partner, living together	0.60 (0.42-0.86)	0.005	0.69 (0.51-0.92)	0.011
Partner, not living together	0.63 (0.45-0.88)	0.007	0.51 (0.30-0.87)	0.013
Single	0.20 (0.10-0.42)	<0.001	0.25 (0.12-0.49)	<0.001
Target Population	1.39 (1.16-1.67)	<0.001	1.48 (1.22-1.80)	<0.001
PrEP-reason for clinic visit	3.22 (2.97-3.48)	<0.001	2.49 (2.01-3.07)	<0.001

3.2.3. "Starting PrEP today means I will be protected"

In this sub-chapter I will present findings on MSW's individual experience with and understanding of PrEP ranging from their risk perception and reasons for uptake or decline (3.2.3.1) to the experience of HIV-testing (3.2.3.2), MSW's hopes for and assessment of PrEP vis-à-vis other prevention methods (3.2.3.3), initial concerns and fears of taking PrEP (3.2.3.4), the experience of taking PrEP in terms of side-effects and daily pill-taking (3.2.3.5, 3.2.3.6), views on alcohol consumption in relation to PrEP (3.2.3.7) and men's general understanding of PrEP (3.2.3.8). In 3.2.3.9., I will summarize the PrEP facilitators and barriers for MSW at the intrapersonal level.

3.2.3.1. MSW's rationale for uptake and decline

MSW described their fear of HIV as a powerful motive to initiate PrEP. Taking up PrEP was informed by the desire to avoid HIV-related stigma, the personal experience of family and friends dying of AIDS and own exposure to risk situations. MSW did not want to be become stigmatized: "the stigma that comes with being HIV-positive, even family members may use it against me especially when we argue" (MSW starting PrEP, 21 yrs). Irrespective of age, having one or multiple partners, MSW also mentioned personally experiencing HIV as a deadly infection in one's family or among one's friends as the following quotes show: "I have lost many people. Now we are left with the kids – and the parents are gone" (MSW continuing PrEP, 40 yrs). "Most of us are dying of HIV; I was like: "give [me] the pill"" (MSW continuing PrEP, 26 yrs). HIV was therefore to be prevented at all costs and PrEP seen as an effective way of doing so. While fear is not commonly associated with masculinity, for some MSW, the fear of HIV stemmed from having engaged in risk-taking behavior as will be shown below.

Risk situations and reasons for uptake noted quantitatively in *figure 16,* such as not knowing the partner's HIV status, engaging with multiple partners or non-use of condoms were also mentioned in IDIs, yet MSWs provided more nuanced descriptions of these situations: young MSW experimenting sexually until they had found the right partner – "you have to check several others; be it a slender or big woman. This kind of decision takes time" (MSW starting PrEP, 21 yrs); work-related travel with opportunities for sexual relations – "sometimes they send me to buy machinery parts and I meet a girl while I don't have condoms" (MSW starting PrEP, 34 yrs); being tempted by others to have sexual relations beyond their steady partner – "they'd be teasing you on the side… And then you may also end up being tempted, you see" (MSW continuing PrEP, 34 yrs) or generally succumbing to peer pressure - "there were so many people who slept with many people and I found myself doing the same thing" (MSW starting PrEP, 34 yrs). Having disposable income after a harvest was mentioned as a further reason for engaging with multiple partners – "then you find someone

who is prostituting themselves for you" (MSW restarting PrEP, 21 yrs). Some MSW enjoyed the thrill of a number of concurrent girlfriends – "It is a matter of amusement. Just like playing golf" (MSW declining PrEP, 37 yrs). Reasons for enhanced risk situations in terms of having multiple partners were thus closely related to masculinity issues – showing virility, experimenting, making use of opportunities as they presented themselves or having the means to buy sexual relations. Living with an HIV-positive partner was another important reason for MSW to feel at risk – "my wife tested positive yet I tested negative so that way we need a way to prevent all of us from being HIV-positive" (MSW continuing PrEP, 39 yrs-1).

Analogous to *figure 16*, MSW in IDIs presented overlapping risk-related reasons for taking up PrEP as expressed by this young man: "As I have said at my age, I am now sexually active and some of the girls I have sex with I don't know their HIV status" (MSW continuing PrEP, 26 yrs) quoted in (Berner-Rodoreda et al., 2020c). Not knowing the partner's status and having multiple partners could thus heighten the risk. Ignorance about the partner's status and doubts about her behavior were further reasons for initiating PrEP – "dating a woman who drinks… She may get so drunk and wouldn't recall where she slept" (MSW continuing PrEP, 30 yrs). The role of distrust in a relationship in connection with PrEP will be further explored in the relationship chapter. The combination of living in a serodiscordant relationship and wanting to have a child was a further motivation for initiating PrEP. "I thought it was best to start PrEP knowing my wife's HIV status… And since my wife and I are trying for a baby, we will not be using a condom, the drugs will be helpful" (MSW starting PrEP, no age given). While MSW mainly felt exposed to HIV through sexual intercourse, some MSW mentioned exposure in caring for others either at home or at traffic accidents and wanting to stay safe.

Not being at risk was the second most important reason quantitatively for declining PrEP, see *figure 17*. Qualitative data also highlighted the subjective nature of risk perception with stakeholders and PrEP providers problematizing the underestimation of risk on the part of clients: "I think individual perception of risk is generally low... if I don't believe that I am at risk of acquiring HIV then I won't bother even enrolling for PrEP, let alone adhering to it" (male stakeholder, no age given-5) quoted in (Berner-Rodoreda et al., 2020c). However, counterevidence to this perception could be found in a MSW who took up PrEP because of past (his ex-wife's positive status) rather than present risk situations: "I am not at risk that much now" (MSW continuing PrEP, 39 yrs-2) quoted in (Berner-Rodoreda et al., 2020c) thus highlighting a strong desire for protection from HIV irrespective of current risks.

The most salient reason for male decliners was the concern about daily pill-taking rather than not seeing oneself at risk. Additional reasons for not taking up PrEP provided in in-depth interviews will be explored in sections 3.2.3.4, 3.2.3.6. and 3.2.3.7.. Risk perception was therefore important for MSW but not the only consideration for starting or declining PrEP.

3.2.3.2. "I am so happy that I am not positive"

A negative HIV test is a pre-condition for starting PrEP. Across respondent groups testing was seen as a major obstacle for men to access PrEP because of masculinity issues and stigma as will be shown in the society chapter (3.2.6.1./3.2.6.2.). MSW on PrEP generally shared this view and depicted a male avoidance strategy: "normally we think because we haven't tested we are not HIV-positive, and once we test positive we get so frightened." (MSW continuing PrEP, 39 yrs-1), yet MSW approached about PrEP presented a variety of personal motives for testing: testing regularly because of an HIV-positive partner and/or wanting to be at ease about their health, feeling exposed to HIV after a recent sexual encounter, feeling unwell and worried about being infected – the fear of HIV thus also worked as an incentive for HIV-testing. Hearing about PrEP and wanting to access it was a further motivation for MSW to test.

> I heard about PrEP from a newspaper advert that there is a new kid on the block that protects individuals from getting infected with HIV. I was very interested and curious, so I quickly came to this clinic and got tested. (MSW continuing PrEP, no age given-1)

The upside of being afraid of HIV expressed itself in the joy and relief of testing HIV-negative and wanting to maintain the status quo, "I am so happy that I am not positive… I want to remain healthy. I don't want to be infected with HIV" (MSW starting PrEP, 25 yrs). MSW on PrEP as well as men approached about PrEP had overcome the fear of testing and therefore seemed to differ from the way men were generally described.

> Initially, I was scared and I was shaking, but after they had tested me for the first time, I was like, "now, it's better". And when they tested me the second time, I wasn't nervous any longer, my nerves were gone. (MSW discontinuing PrEP, 21 yrs)

The chasm between the general perception of MSW's reluctance to test (3.2.6.1) and the testing behavior of those approached about PrEP is also evident in *figure 17*, which demonstrates that only one out of 89 MSW mentioned HIV-testing as a reason for declining PrEP; decliners depicted testing regularly for HIV in IDIs and highlighted other reasons for declining, such as pill-taking (Berner-Rodoreda et al., 2020c).

3.2.3.3. PrEP = the Messiah for MSW?

MSW's visions and incentives for staying negative irrespective of age included having a family or becoming old without irreversible infections or premature death: "to do my things and live and build my home, live with my family and have children" (MSW starting PrEP, 33 yrs); "I would love to have a negative child" (MSW continuing PrEP, 49 yrs); "I'll live a long life especially if I continue to stay protected" (MSW continuing PrEP, 29 yrs); "I am protected from this disease cos it is one of the diseases I am afraid of…I don't want to be sick… and I want to protect my family" (MSW continuing PrEP, 40 yrs). MSW's visions for their lives were inextricably entwined with caring not only for their own lives but also maintaining an HIV-negative status for looking after and providing for their family; this implied that masculinity

considerations included the notion of responsibility. MSW saw the realization of their vision dependent on an HIV-negative status.

Seeing oneself at risk and testing negative for HIV was a powerful motive for starting PrEP, yet MSW also viewed PrEP as an opportunity for more comprehensive protection and more peace of mind as the following quotes show: “I’m circumcised but I still needed something different because of issues such as a condom bursting” (MSW starting PrEP, 21 yrs); “I’ll have to... worry less” (MSW continuing PrEP, 25 yrs). These quotes show young MSW “playing it safe” with some MSW such as the 21-year old quoted above combining up to three prevention methods (PrEP, circumcision and condoms) to eliminate any possibility of seroconversion. The hope for better sexual performance was a further motive for MSW to initiate PrEP: “sometimes I do get a good erection and then it happens that as we are having sex, the erection weakens and then, it is done, so maybe this will work for me” (MSW continuing PrEP, 33 yrs). Expressing hopes for greater safety, peace of mind and improved sexual performance were thus further incentives for MSW to start PrEP.

Attitudes towards and experience with condoms were discussed widely in group discussions and in-depth interviews in Eswatini as the most popularly used alternative prevention method to PrEP. Some men in an FGD highlighted their effectiveness with a local leader stressing their importance for men’s virility even at a more advanced age: “we are bulls – you go here and there (laughs), so condoms really help you a lot” (man in FGD, 63 yrs). Conversely, some men in IDIs talked about their difficulties of using condoms.

> Not all of us are using condoms and especially me, when I try using it, my penis just loses erections because it doesn’t want to be covered by a condom… well, I don’t know, maybe it’s because I am not circumcised… I am not really sure about that, but truth is, I lose erections when I use a condom (laughing). (MSW starting PrEP, 41 yrs) quoted in (Berner-Rodoreda et al., 2020c)

Not only middle-aged, older and married MSW described problems with condoms but across age groups, men depicted forgetting condoms, being inconsistent, condoms bursting, unable to feel anything, or generally disliking them. Dislike of and inconsistent use of condoms emerged as important reasons for MSW to take up PrEP.

Some PrEP providers, stakeholders and local leaders but particularly female PrEP providers felt that “most men hate using condoms” (female PrEP provider, 58 yrs) and described men as being glad to use a new prevention method. They perceived PrEP as beneficial for men who experienced difficulties with other methods. PrEP ”induced hope for overcoming condom-induced erection problems” (Berner-Rodoreda et al., 2020c) or for more libido, something other methods could not fulfill: “I have heard that these pills for HIV they get you erections. And they make you sexually active” (MSW starting PrEP, 33 yrs). A combination of reasons, not least sexual considerations, therefore led to PrEP taking on a redeeming role for MSW:

> Others are also happy because they highlighted that they can't use the other preventive measures like circumcision and condoms, so PrEP is their *Messiah.* (male PrEP provider, 33 yrs-2) interview excerpt quoted in (Berner-Rodoreda et al., 2020c)

3.2.3.4. Concerns regarding PrEP

A few MSW on PrEP irrespective of age or the source or circumstances of hearing about PrEP stated no concerns about taking PrEP – "I didn't have any hesitation because I had already made up my mind" (MSW starting PrEP, 25 yrs); "nothing worried me" (MSW starting PrEP, 33 yrs); "I am not afraid of anything" (MSW continuing PrEP, 56 yrs). Yet, across respondent groups there was concern about PrEP not preventing STIs or pregnancies thus calling for the use of additional contraceptive methods such as a condom: "the thought still lingers that condoms are still important since PrEP does not prevent STIs" (MSW continuing PrEP, 26 yrs). "If PrEP was also a contraceptive pill, then I wouldn't use a condom" (MSW starting PrEP, 21 yrs). For male and female PrEP providers and stakeholders a further concern was the possibility of PrEP leading to resistance with irregular intake.

> If they don't take that pill as often as they should, what if they get HIV and they aren't taking the drug regularly – they are messing with the first line drugs. Somewhere along the line they develop HIV, but they don't know that, and they continue to take the same drugs and then they develop resistance. (male PrEP provider, 33 yrs-1)

The most salient concern for PrEP providers and stakeholders was the view of PrEP as a replacement for other prevention methods rather than an add-on prevention tool.

> You don't want people to have the mindset that all you need is PrEP. It's a package. It talks to what you do. All other interventions need to be on board. Male circumcision, condoms need to be on board. It's not a magic bullet that people have the mindset that once I take a tablet, other aspects fall off. We learned that from male circumcision... It's everything else plus PrEP. (female stakeholder, 39 yrs)

Related to this was the concern voiced primarily by female PrEP providers and stakeholders of risk compensation in terms of MSW increasing the number of sexual partners and not using other protection apart from PrEP.

> I just think that people will just take advantage of taking PrEP and they will just sleep around because they will say they are protected from everything yet PrEP will protect them from HIV… I also think that condom usage will reduce because people will say they are protected. (female PrEP provider, 25 yrs-1)

The concern was shared by some clients as depicted by a PrEP provider: "One patient asked if this is meant for people to have sex anyhow as if government is urging people to sleep around" (male PrEP provider, 46 yrs). In the relationship chapter, I will examine MSWs' accounts of their sexual behavior.

For MSW approached about PrEP, men in FGDs and local leaders, sexual or fertility problems or other long-term side-effects were further concerns regarding PrEP: "I usually ask myself that after 10 years down the line, will I not get infections in my body?" (MSW discontinuing PrEP, 28 yrs). Additional considerations were related to having to take pills daily and before one is sick (3.2.3.6.), possible effects on the liver by combining alcohol

consumption and PrEP (3.2.3.7.), the particularities for taking PrEP and beliefs in its efficacy (3.2.3.8.).

Effects on fertility and sexual performance were of particular importance for younger and older men: “Maybe the pill will kill some of my sexual feelings and even maybe give me erectile dysfunctions leading to poor sexual performance” (MSW starting PrEP, 20 yrs) quoted in (Berner-Rodoreda et al., 2020c). Some were worried about gaining too much weight, “I may be too big so much I cannot perform in bed anymore” (MSW continuing PrEP, 39 yrs) – thus expressing the concern of potentially losing their virility. Virility and sexual performance could thus act as both – an incentive for taking up PrEP and a concern.

While some MSW expressed no concerns about PrEP and while many concerns were shared across respondent groups, MSW on PrEP and in the communities had particular fears of PrEP possibly reducing their sexuality and fertility thus affecting their masculinity, whereas PrEP providers and stakeholders expressed concern over PrEP amplifying sexual relationships. In the next section, I will move from concerns about side-effects to the experience of side-effects.

3.2.3.5. Experiencing side-effects

Side-effects were a widespread phenomenon which many male respondents who continued and discontinued PrEP talked about in IDIs. Based on the PrEP pills used in the Eswatini demonstration project[12], MSW mentioned the following side-effects: dizziness, headaches, nausea, flu-like symptoms, sleepiness, stomach pains, more appetite and weight gain. A 49-year old MSW additionally raised the adverse effect of a low sex-drive yet expressed uncertainty about ascribing it to PrEP or his age. MSW described the various side-effects mostly as temporary. “[The] pills have not given me any problems just a minor headache when I started drinking them but that quickly went away a few days later”, (MSW continuing PrEP, no age given-1). Some MSW experienced no side-effects at all as depicted by an older man with a wife on ART who stressed the benefit of PrEP:

> I am like a person whom I have put myself on reins as you know when a horse is on reins it doesn’t look any other side apart from where it’s going. So, with me, I am focusing on my medication to where I am going and if there are any side-effects from the pills on me I should have known by now. (MSW continuing PrEP, 65 yrs)

Emphasizing singlemindedness, not mentioning any side-effects or seeing them as a minor episode can be viewed as MSW showing strength and coping well with adverse effects. For some MSW, however, side-effects, such as feeling nauseous, dizzy, sleepy or having flu-like symptoms constituted a major reason for discontinuing PrEP (Berner-Rodoreda et al., 2020c) thus showing that MSW did not want to suffer or appear to be ill and therefore did not tolerate

[12] tenofovir disoproxil fumarate (TDF) and lamivudine (3TC)

debilitating side-effects for long as this man recounted of his one-month experience of PrEP:

> Just immediately after taking them I would shiver and this would go on even during the day and I would have to wear a jacket even if it was hot… I ended up being sick and could not do anything… During the night I would sweat a lot and I would not even put on the blankets to cover myself… The body would always be sore and it would be like I have been beaten up by someone and my body is just really painful… I thought it was just flu and then I went to the clinic and got treated and injected but it still did not stop. And then I noticed that it was the pills because each time I drunk them I would feel even worse. I would have a high temperature and get sick... It would continue and be like this until I stopped and I am fine today. (MSW discontinuing PrEP, 36 yrs)

A male provider tested PrEP himself and decided against it on the basis of experiencing pain, "severe abdominal discomfort, I mean severe. It was about four hours. I decided then to take a break. I took it for one day. Then I said, this is not for me" (male PrEP provider, 28 yrs). While male PrEP providers expressed understanding for clients experiencing side-effects, the response by female PrEP providers was mixed. Some thought that side-effects were minor and would disappear quickly or that clients would base their information on side-effects on hearsay. "Another thing is that they mislead each other and you find that it is not a side-effect" (female PrEP provider, 29 yrs-2). Some felt that side-effects were exaggerated or used as a pre-text for discontinuing PrEP. "Others say the pill makes them tired. The problem with patients is that some of the things are psychological… They feel like since they have started the pill things like tiredness could be the cause of it" (female PrEP provider, 26 yrs-1). Other female providers by contrast felt that serious side-effects could become a deterrent for taking PrEP and ruin the reputation for this prevention method:

> Like ARVs, it does happen that a person experiences side-effects that are really bad like hallucinations. I ask myself that what if there was a day when a person had the same effects just like the hallucinations when on PrEP? What will happen because people will say, PrEP makes people go crazy. (female PrEP provider, 24 yrs-1)

MSW generally talked about short-lived side-effects with many MSW experiencing no adverse effects at all. Those who viewed side-effects as an insurmountable hurdle or as intolerable either did not initiate PrEP or discontinued PrEP and opted for alternative prevention methods.

3.2.3.6. "I don't forget it because I know what it is for"

The requirement to take PrEP daily was viewed by PrEP service providers as a barrier for MSW to take up and continue oral PrEP.

> But as soon as you say it's a pill that you take every day, just 50% just walk out. People just stop right there. You can watch their eyes glaze over. They start complaining – a pill every day. Most people are discouraged. (male PrEP provider, 28 yrs) quoted in (Berner-Rodoreda et al., 2020c, p. 9)

> By the time we explain to them the pill, some, they start having that fear of the unknown of the pills but some they take them; some they take the first month, then after the first month we just lose them in the system. (male PrEP provider, 41 yrs) quoted in (Berner-Rodoreda et al., 2020c, p. 9)

It was mainly male and female PrEP providers, stakeholders and decliners who highlighted the difficulties of taking PrEP daily: a general aversion to taking pills, especially if one was not sick.

> The problem is that taking pills is tiring. For example, once you go to the hospital for a flu and given medication for it, you will take that medication to cure the flu but taking medication to before you are sick, what are you trying to cure?... If you only took the pill for two days only and only have to take another when you get a new partner, that would have been better. (MSW declining PrEP, 37 yrs)

Some PrEP providers and stakeholders described the pills as big and hard to swallow; one female PrEP provider also spoke of pill burden as a problem – issues not raised by MSW in interviews. The forgetfulness of clients was a further concern for PrEP providers. While some MSW on PrEP or directly approached about PrEP also viewed it as a burden to take pills daily, they mainly highlighted challenges of time-keeping, collision with work schedules, travelling, socializing and drinking as interfering with pill-taking rather than a general aversion to taking pill or the size of the pills. MSW recounted remembering to take PrEP by setting an alarm, taking the pill at mealtime, agreeing on a joint time with their partner, linking it to a TV program, being reminded by friends or family, travelling with one's pills and simply remembering by themselves for their own benefit of being protected in their sexual relations. "I don't want any HIV near me so that is why I don't even miss the 8pm time of drinking my pills and well… I also love sex" (MSW continuing PrEP, no age given-1). Wider societal benefits were an additional incentive for taking daily PrEP pills. "It is that "zero" knowledge I keep at heart which places emphasis that we have to achieve zero HIV for Swaziland, so I want to be the first one, then I remember my time 8pm for the dose" (MSW continuing PrEP, 26 yrs).

While MSW on PrEP took the pills voluntarily and had the option to stop, if it became too burdensome, the dominant view expressed by MSW on PrEP was to take them for life or long-term as they had a "side-woman", did not know the HIV-status of their sexual partners, did not trust anyone or desired to stay protected. The only counter-reasons provided for not seeing PrEP as a long-term or life-time prevention method were the onset of illnesses, allergies or severe side-effects. This was the only context in which a male client viewed pill-burden as a possible challenge: "while on PrEP, I may have TB, diabetes, and I may not be able to take them all." (MSW continuing PrEP, 39 yrs-1). Another consideration to stop was a disturbance to one's sexual performance – "maybe if my "tool" isn't working, I can consider stopping" (MSW continuing PrEP, no age given-1). For some men, hardly anything would dissuade them from continuing with PrEP. "If there are severe side-effects that will affect my life, I will go to a hospital and ask for another regimen of PrEP pills, and if that fails, I don't know. I may stop then" (MSW starting PrEP, 41 yrs). The desire to stay HIV-negative and to enjoy a carefree sexual life overruled initial concerns of having to take pills daily as this young man expressed.

> Knowing that I have to take PrEP for three months and continue doing so on a regular basis, that had me think twice about it but because it is for my own protection then it's a small price to pay. (MSW starting PrEP, 21 yrs)

3.2.3.7. Consuming alcohol – a facilitator or barrier for MSW to take up PrEP?

The consumption of alcohol had many dimensions; while alcohol played an important role socially, whether or not to consume alcohol was also a personal and life-style decision. Across respondent groups, alcohol intake was seen as increasing MSW's risk of HIV. MSW approached about PrEP, PrEP stakeholders and PrEP providers viewed PrEP as more effective and protective of men who drank alcohol, as they were likely to forget to use a condom whereas a pill could be taken beforehand. One MSW on PrEP recounted his drinking habits and reason to take PrEP. "I sometimes go to [name of location] in a bar called [name of bar] and we get drunk and lose our minds. And because of what we drink I thought that PrEP would be good for me" (MSW re-starting PrEP, 21 yrs). PrEP was thus seen as protecting in situations where other prevention methods may fail because of the alcohol intake.

Since alcohol consumption was generally disapproved of in ART programs, some MSW were uncertain if the same applied to PrEP: "Some of us even drink regularly… Will there be any problems if I decided to take the pill for a life-time?" (MSW declining PrEP, 34 yrs). PrEP providers and MSW raised the issue of possible liver damage. "Now we are saying they can use PrEP and alcohol… I really have a problem when it comes to the liver of this person, what happens to the liver?" (female PrEP provider, 31 yrs-2). The state of his liver led a MSW to take a break from PrEP:

> I first need to check my liver before I am re-enrolled. Cos what's stressing more than anything else is that I drink too much alcohol like the brandy, whisky type… and I understand all these vodka alcoholic drinks go straight to the liver just the same way these PrEP pills do, so I am a bit worried in terms of the damage of my liver that might occur in the long run. (MSW discontinuing PrEP, 40 yrs)

While alcohol was largely seen as part of men's risk portfolio and thus regarded as a facilitator in taking up PrEP, it could also become a health hazard if it caused additional liver problems. The social aspect of drinking alcohol and its implications for PrEP will be explored in 3.2.4.3.. Different guidelines for alcohol intake in an HIV-prevention compared to a treatment setting could be confusing to clients, as the reaction of PrEP clients above showed and called for clearer guidelines, see 3.2.6.5..

3.2.3.8. Understanding of PrEP

PrEP was perceived across all respondent groups - men engaged with PrEP, stakeholders, service providers, among some decision-makers and local leaders - as a pill for HIV-negative people to prevent infection with HIV. There were a few exceptions among local leaders and "decision-makers" (2.2.4.) who mistook PrEP for ART. "It [PrEP] is good for sick people" (male decision maker, 65 yrs). Age did not seem to be of importance as the confusion also happened in younger local leaders.

I: Who you do think should take the pill and who can benefit from it?

R: I don't really know. Maybe it is the person who when they test they find that they are HIV. (male local leader, 35 yrs-1)

MSW on PrEP were aware that PrEP did not prevent against STIs and pregnancies, but it would protect the negative person in a discordant relationship.

R: But PrEP will protect in cases where you want to have a baby with a wife who is HIV-positive, not that you be free to sleep around, *kubabela.*
I: (Laughs). And what is this *kubabela?*
R: Having partners in every homestead around simultaneously. (MSW starting PrEP, no age given)

The quote also shows that MSW on PrEP were aware of PrEP offering more opportunities for sexual relationships, yet not all MSW on PrEP felt that this was desirable. Thus, masculinity ideals of showing virility were not endorsed by all men.

Some young MSW on PrEP and older local leaders overemphasized the effectiveness of PrEP: "I was very happy that I will never get the virus" (MSW continuing PrEP, 27 yrs). "If PrEP works in the way that it is been explained to people and if used in the correct manner, I think it can be 100% preventative" (male local leader, 66 yrs). Whether MSW's overconfidence in PrEP was due to not being informed in detail about PrEP or whether they heard what they wanted to hear is difficult to interpret. Many MSW on PrEP believed a residual risk needed to be taken care of. "When you are wearing a bulletproof you cannot say I won't get hurt. What I mean is once you get the pills you still have to use condoms to get dual protection" (MSW accepting PrEP, 34 yrs).

There was some uncertainty on the details of how PrEP works and for how long one had to take it. "What I mean is if I take the pill for seven days will it work even after I stop?" (MSW accepting PrEP, 25 yrs). Some also wanted to know more about PrEP's efficacy. "You are HIV negative and you sleep with an HIV-positive person with the trust that you are taking PrEP. How effective will the pill be on that kind of situation?" (man in FGD, 28 yrs). Some thought PrEP is event-driven as this PrEP provider described.

A patient came back and I think they had been explained properly but they forgot along the way and said that they would only take it each time they went to see their partner and once they come back they would stop. You see, that is not good. If they are not going to the partner, they stop taking it and if they know that tomorrow they will go to their partner, they start taking it today… so you see that person is not covered. (female PrEP provider, 35 yrs-2)

While many MSW on PrEP, local leaders and men in FGDs were well informed about PrEP and aware of its limitations in terms of not preventing STIs and pregnancies, for a minority of MSW some aspects of PrEP remained hazy with a danger to either overemphasize PrEP effectiveness, being unclear about how often to take PrEP, its effectiveness or tending to confuse PrEP and ART.

Those living with an HIV-positive partner seemed to largely lack information on the benefits of ART in terms of treatment as prevention and felt that PrEP was needed to protect them against an HIV infection. Out of the nine men on PrEP interviewed who mentioned living

in a serodiscordant relationship only one spoke about being protected through a partner on ART. Some mentioned additional sexual relationships and thus benefited from taking PrEP, for those living monogamously with a partner on ART, taking PrEP increased their sense of "safety". As a PrEP provider pointed out, the risk situation for the HIV-negative man would be negligible: "why don't we consider the viral load of the partner when we initiate? If it is suppressed what is the need for him to take PrEP?" (female PrEP provider, 26 yrs-1). This issue seemed unresolved with MSW seemingly unaware that they were protected through an ART-compliant partner.

3.2.3.9. Synopsis of Facilitators and Barriers

Emerging from MSW's hopes, concerns, risk perceptions, reasons for taking up or declining PrEP and experiences of PrEP the following facilitators and barriers emerged at the individual level, see *table 21*.

Table 21 MSW's facilitators and barriers for PrEP uptake and retention at individual level

Facilitators	Barriers
Personal risk perception and fear of HIV	Not seeing oneself at risk
Habit of testing for HIV regularly	Taking pills when not sick
Desire and determination to stay negative to realize the vision for one's life	Side-effects, if persistent
Seeing PrEP as the 'Messiah' – preferring pills over other prevention methods	Daily pill-taking as a burden Pill size? Concern of stakeholders/PrEP providers
Possibility to stop PrEP when problems occur	Non-protection against STIs (other than HIV) and pregnancies
Able to combine alcohol and PrEP	Alcohol consumption: liver problems
Hope for improved sexual performance	Fear of reduced libido or fertility
Knowledge and understanding of PrEP as prevention method	Partial knowledge of PrEP and confusion of PrEP and ART

3.2.4. The social dimension of PrEP

MSW's experience of taking PrEP was not just a private matter of selecting one particular HIV prevention method over another; it was also informed by one's social relationships – first and foremost the relationship with the partner(s). Being a new intervention in Eswatini, only a handful of men mentioned that they were inspired by having a partner, friend or brother taking PrEP. Irrespective of knowing someone on PrEP, MSW's reference groups played a role in their decision to take up or decline PrEP and to share information about PrEP. While PrEP could lead to tensions in MSW's relationship(s), it also enabled men in serodiscordant relationships to have peace of mind and to experience more fulfilling sexual relationships as I will show in this chapter.

Trust and distrust emerged as a salient and overarching theme (3.2.4.1.). Related to this were social facilitators and barriers to testing (3.2.4.2.), talking about HIV, sexuality and

PrEP and receiving positive or negative reactions (3.2.4.3. – 3.4.2.5). Men's sexual behavior on PrEP will be examined on the background of a concern of risk compensation, the possibility that through PrEP MSW would extend and intensify risky sexual relations (3.2.4.6). I will finish this chapter by providing a synopsis of the social facilitators and barriers for men on PrEP (3.2.4.7.).

3.2.4.1 "No matter how hard a couple can promise each other that they'll stick to each other, there's always that "but" and "what-if""

This statement by a female PrEP provider epitomizes the issue of distrust in relationships as a powerful motive for taking up PrEP. This view was shared among MSW initiating PrEP, PrEP providers, stakeholders and local leaders.

> I don't trust myself, I don't trust my girlfriend, and I just don't trust anyone. We're humans and make mistakes, so I think once I am initiated on PrEP, I'll take it every day so I can be protected for the rest of my life. (MSW starting PrEP, 20 yrs) quoted in (Berner-Rodoreda et al., 2020c)

Grounds for men to distrust their partner(s) lay in only being informed orally or not at all of the partner(s)' test result: "I used to tell her to go test and bring back her results so that I could also see them because I wouldn't trust her word" (MSW starting PrEP, 34 yrs) or in a reluctance of the partner to test for HIV: "I would like to go back and take PrEP until I am married and she is able to trust me and I can trust her because she has not been tested" (MSW discontinuing PrEP, 28 yrs). While a young MSW described breaking up the relationship on the basis of the girlfriend's unwillingness to test, other MSW displayed seeming powerlessness over the refusal of the girlfriend to test as the example of the following two young men show. Their girlfriend's reluctance to test reinforced notions of distrust:

> She is the type that is unwilling to go for HIV testing either alone or with me. Every time I bring up the idea of testing, she postpones and so this has gotten me dead-worried and concerned on why she is doing this. So, this weird act of hers has got me not trusting her that much. So, upon hearing about this pill, I was somehow relieved that at least even if my girlfriend is up to some kind of promiscuous practices, I will still be safe from contracting HIV. (MSW starting PrEP, 20 yrs) quoted in (Berner-Rodoreda et al., 2020c)

A kombi-driver shared in a group session that his girlfriend cheated on him thus showing vulnerability rather than male dominance:

> I've tried considering testing with my girlfriend of more than two years in the relationship, and we have been staying together. One time after deliberating on this issue of getting tested together, we finally agreed and went for the test and guess what? She came out positive and I was negative… And she admitted that she had been cheating on me almost for the entire relationship cos she has been thinking that since I am a kombi driver I have multiple sexual partners. But that was not true, she was just taken by assumption. (man in FGD, 21 yrs)

In both of the above examples, the female partner seemed the more independent with the FGD example showing men being stereotyped. MSW mistrusted their partner for not testing but were also on the receiving end of distrust, an experience also depicted by a 27-year old MSW on PrEP: "She said, I did well to take the pills because she does not trust me" (MSW

continuing PrEP, 27 yrs).

Further reasons for distrust were the partner's refusal to have sexual intercourse: "that makes me think she might be cheating somewhere, so that then gives me reason that I should cheat, too" (MSW starting PrEP, 41 yrs). Separation through work or living arrangements also contributed to distrust: "you cannot trust a woman, especially one who stays at their parental home since a lot can happen in the few days where she's not around" (MSW starting PrEP, 21 yrs). The independence of women's behavior – making up their own mind whether to test or have intercourse – as well as living apart were viewed as reasons for distrust. Conversely, trusting the partner was equated with fidelity which would not warrant taking PrEP as shown in the following quotes. "I am… also not sleeping outside of my marriage. If I get it [HIV], it will be from her and if she gets it, it will be from me" (MSW discontinuing PrEP, 36 yrs). "We never use any kind of protection in the hope that we are both faithful to each other. And if I were to take the pill then how would I explain that to her?" (MSW declining PrEP, 34 yrs) quoted in (Berner-Rodoreda et al., 2020c, p. 12). PrEP uptake was depicted by the men quoted above as counteracting the commitment made to the partner. This perception was also held by some PrEP providers who talked about their own reasons for not taking PrEP, "no, I'm just faithful" (male PrEP provider, 41 yrs) or "we trust each other" (female PrEP provider, 36 yrs-1). These statements show that for some, irrespective of gender, PrEP was automatically associated with being unfaithful. Initiating PrEP among married couples was therefore tantamount to expressing distrust as "no one knows how faithful the partner is" (female PrEP provider, 35 yrs-1). The feeling of distrust seemed enhanced for those not living together (mainly men in their 20s in the qualitative sample).

Conversely, for decision makers (i.e. HIV-positive men living with HIV-negative partners), PrEP was seen as a sign of love on the part of their HIV-negative partner who could have left them. Those not taking PrEP themselves (local leaders, PrEP providers, decision makers and stakeholders) also viewed PrEP as a tool for serodiscordant couples to "move on with life" (male PrEP provider, 34 yrs-2) or finding a serodiscordant partner they could share their life with and thus as a means to overcome stigma as well enjoying a safe long-term relationship. "He [a male client] said he had a partner who was someone he wanted to marry but she was positive, and he said he heard about PrEP and felt like it was an answer from God" (male PrEP provider, 28 yrs).

Trust was seen as a barrier to initiating PrEP, while distrust and living in a serodiscordant relationship were compelling interpersonal reasons for starting PrEP. Once on PrEP, the pills could dispel the unease of feeling exposed to HIV in a partnership. PrEP was therefore "a way of overcoming distrust in the relationship" (Berner-Rodoreda et al., 2020c) as the following quote shows.

> You find that sometimes maybe... sometimes we have some doubts when we're engaging in sexual intercourse. Sometimes she doesn't trust me, saying stuff like "how can I be assured that I am your only partner who you're sleeping with and stuff", so now that we are both taking PrEP, that doubt no longer appears. (MSW continuing PrEP, 25 yrs) quoted in (Berner-Rodoreda et al., 2020c)

3.2.4.2. The social dimension of testing

Testing was mainly portrayed by MSW as their own independent decision (3.2.3.2), but partners also played a role in prompting MSW to undergo HIV-testing. A man in the community felt that love would make couples test together. "If a man truly loves his partner, he would definitely opt going with her for HIV testing" (man in FGD, 39 yrs). MSW were made to test because a partner "requested" testing on a monthly basis (MSW declining PrEP, 27 yrs) or because they were living in a serodiscordant relationship and needed to check their status: "I have HIV tests every three months because my wife is already HIV-positive" (MSW accepting PrEP, no age given) thus showing men acting on the strength of the relationship. Few MSW mentioned the family as a motivation to test in having HIV-positive parents or following the mother's advice.

A generally perceived reluctance of MSW to test (3.2.6.1.) was also described as leading to testing by proxy, i.e. regarding it sufficient for the wife to get tested. "So, when the wife comes back with negative results then the husband thinks she also checked for him as well" (male local leader, 35 yrs-2). Yet this behavior was not borne out by MSW approached about PrEP.

Having undergone testing gave some men the courage to enquire about the partner's HIV-status. "I do ask them, if they do test for HIV, or if they are healthy or not… You wouldn't dare talk about it if you do not know your status" (MSW continuing PrEP, 30 yrs). Yet not all men displayed this courage. A young man who discontinued PrEP recounted how his partner questioned him about his status but he was scared to ask for hers showing that it was not always the men who took control in relationships.

MSW who had tested also described a desire for the partner to test thus showing another facet of testing as social dimension which MSW extended to their partners:

> R: Every time I get a visit from a partner I make sure I show them my HIV status results which I normally put under my mattress. Today I took the test, I will continue doing so every month.
> I: What are you hoping to achieve by showing a partner your HIV test results?
> R: To encourage her to take the test, too. (MSW starting PrEP, 21 yrs)

Reticence to test was thus described by MSW to reside in their female partners rather than themselves. The desire for others to test was also expressed by local leaders, some living with HIV, who recommended testing to neighbors and community members with or without health problems. An HIV-positive man who facilitated PrEP uptake for his wife, described how he encouraged boys in the community to test for HIV. Some regarded advising male friends as

fraught with danger "for males, when you say, let us go and get tested it is like you have started a huge fight" (male local leader, 35 yrs-2); it "could put the friendship in jeopardy" (MSW declining PrEP, 37 yrs). Men in FGDs expressed doubts about couple testing which they felt could lead to a break-up and would therefore deter rather than inspire them to get tested.

> Like you keep wondering what will happen when you both get tested and the results come out saying you, the man, is positive. The thoughts that flood your mind about that make you decide otherwise about doing couple testing. This is because you don't know how will your girlfriend react towards that – you might as well lose her because of being found to be positive and this will pain me for my whole life cos what if this girl was the one I wanted to spend the rest of my life with. So, I [would] rather not test at all to at least keep my beautiful girlfriend with me. (man in FGD, 21 yrs)

A recommendation to test for HIV was a sensitive issue in friendships and budding relationships that entailed the risk of losing the friend or partner and therefore had to be carefully considered. The social dimension of testing in the PrEP program was mainly linked to the partner – either in distrusting her HIV-status and encouraging her to test or being encouraged by her to test. The family did not seem to play a central role. Reaching out to others in the community and encouraging them to test beyond the partner or friend was mainly depicted by local leaders and HIV-positive men.

3.2.4.3. Socializing, drinking and talking about health and HIV

Friendships and socializing formed a source of health information for men in Eswatini. Some MSW enjoyed sharing their health knowledge with "family, the community, my age mates" (MSW continuing PrEP, 39 yrs-1). Some MSW were accompanied to the clinic by a friend who they trusted and shared private information with: "he [the accompanying friend] said that he was uneasy, but I told him that I was making a good choice because of my behavior" (MSW continuing PREP, 30 yrs). Not imposing one's view on the other seemed an important element for MSW. "We can discuss STIs, a person can mention the symptoms, then we suggest a diagnosis but everything is up to an individual" (MSW declining PrEP, 37 yrs). A young man shared that they talk about condom use among friends, which none of them liked using. Conversely, several younger men said it was difficult to talk about health and HIV; friends preferred to "talk more about football" (MSW continuing PrEP, 26 yrs). This view of men's reluctance to engage in health topics was reflected in the narratives of local leaders. "When you talk about health, you will see them [men] going to the toilet and not coming back" (male local leader, 63 yrs-2). Some local leaders therefore used creative strategies to involve men in health talks beyond community meetings.

> I sometimes buy people alcohol which does not bring development yet I am doing it intentionally because I can say that at the stage that I am in, I have been helped by the people that drink traditional beer. I close that spot and tell people that today they are drinking for free and while sitting with them, we talk and laugh… As young people… even with these issues, we need to talk to them. (male local leader, 35 yrs-2).

Alcohol could thus play a facilitating role in engaging men in health issues. But it also encompassed the danger of simply forgetting to take PrEP when drinking with friends as pointed out by a PrEP provider. “If they have been told that they have to take the pill in the evening and they are out with their friends, how will they remember?” (female PrEP provider, 22 yrs). MSW who were offered PrEP had similar reservations. “I am an alcoholic and I club a lot. This might lead me to forgetting drinking the pill at the stipulated time I would have chosen for myself” (MSW declining PrEP, 30 yrs-1). Combining PrEP pill-taking with socializing and drinking with friends was therefore seen by some as a recipe for failure and echoed by those who were taking ARVs: “men are found in bars drinking alcohol… I can go and sit in the bar now, and it will be difficult to leave my friends in time to go and take my pills” (male decision maker, 30 yrs). Socializing and drinking were thus also seen as barriers for pill-taking as perceived stigma may prevent men from taking the pills in front of their friends.

Opinions were split among MSW on PrEP as to whether sexuality and HIV issues were discussed within partnerships and families. A young MSW starting PrEP estimated that 40% of couples would not discuss HIV with their partner. Talking about HIV could be interpreted as a sign of distrust. “Once you start talking about such, people assume that is a suspicion on your part” (MSW declining PrEP, 37 yrs).

Within the family it was not customary for parents to talk to their children about sexual matters: “culture is killing us because we cannot talk to our children” (male local leader, 63 yrs-2), yet some local leaders stepped out of societal norms out of the concern to protect their children.

> I have my family and I want it to be a safe one so I would sit with my children and talk to them because the HIV issue is something that we talk about with our families. I personally talk to my family. I have boys and I advise them that they must circumcise because it is another way to protect yourself. (male local leader, 63 yrs-1)

Young men below 26 years of age discussed health issues with their mothers, some couples also spoke openly about HIV. Contravening societal norms and talking to children about sexuality and HIV prevention in a quest to keep them safe was also underscored in the context of PrEP (see 3.2.4.4).

3.2.4.4. “I explained to my wife at home that these pills are to protect me”

Despite the danger of bringing distrust into the relationship by talking about PrEP, men directly engaged with PrEP shared or intended to share their experience of taking PrEP with their partners, friends, colleagues, family members and others in the community. The partner was the most sought-after dialogue partner when it came to PrEP, especially for MSW continuing to take PrEP. Some felt that it is easy to talk about PrEP when one is “used to talking about bedroom issues” (MSW continuing PrEP, 39 yrs-1) and has a close relationship: “Since PrEP is a prevention tool, talking about it will be easy unlike HIV where telling people might be harder

if you are already infected" (MSW starting PrEP, 21 yrs). This view was also shared by male and female PrEP providers with a male provider seeing an advantage for discordant couples to "confide in each other" (male PrEP provider, 34 yrs-2), yet some female PrEP providers viewed the underlying suspicion of infidelity as a reason for not speaking to the partner about PrEP usage.

In order not to provide grounds for distrust, MSW employed different strategies in informing their partner: talking about the high level of infection in the country, explaining that HIV is not only transmitted sexually, that one was advised by the nurse to take PrEP; mentioning sick relatives or the need for protection when confronted with an accident; highlighting that one has not given ground for suspicion, emphasizing one's love and inviting the partner to also take up PrEP.

> I told her how much I love and appreciate her; I told her that I had gone for HIV testing and tested negative (I showed her my test result slip), and the nurse advised me to take PrEP if I want to stay negative for long. I highlighted that since I didn't know her HIV status, she could also consider taking PrEP. (MSW discontinuing PrEP, 40 yrs)

The importance that men attached to talking about PrEP with their partner was further underscored by men declining PrEP for not knowing how to inform their partner without appearing unfaithful (see 3.2.4.1.).

Yet, some MSW spoke about men's difficulty to talk about PrEP, the fear that the wife's family may become involved or that they would be viewed suspiciously by the partner who believed that PrEP leads to "great sexual arousal" (MSW continuing PrEP, 30 yrs). A minority decided not to speak about PrEP and depicted this as a male prerogative in taking autonomous decisions.

> I did not discuss the pills with my partner because there is no need to do so; a man doesn't need permission from his wife. She saw my pills but did not ask or say anything about them... what I have in my body is a shield that protects me from HIV so they can discuss it themselves; I won't do so because I am covered. PrEP is in me. I don't waste time discussing that with anyone. (MSW continuing PrEP, no age given-1)

In addition to the partner, many MSW on PrEP also informed friends, colleagues or others in the community in a quest to mitigate their risks. "I will also tell my friends about this "shield" and show them the flyers… I will also tell my soccer team to come test and get the pill if they are still HIV negative" (MSW starting PrEP, 34 yrs). At times, a colleague or friend was informed "in lieu" of a partner who was absent – an indication of MSW's desire to share the news. "If I was living with my partner I would tell her. Since she is not here, I will tell my colleagues about it" (MSW starting PrEP, 34 yrs). Informing friends and colleagues about PrEP was not only done by those who were actively taking PrEP but also by MSW discontinuing or declining PrEP. Some MSW, irrespective of age or taking PrEP themselves, were instrumental in facilitating PrEP for friends and unspecified others: "she would tell me about her boyfriend, and I told her that there is PrEP. She must go and take it. And then she told me that she is

taking it" (MSW discontinuing PrEP, 28 yrs). "I just tell people that they must go to the clinic to get such a pill and as we speak some of them are already drinking the pills" (MSW continuing PrEP, 65 yrs).

MSW also educated their family members (mother, father, siblings or children) about PrEP: MSW with children or siblings with a view to protect them; younger MSW with the intention of reassuring parents that they were not HIV-positive.

> I know that my first born has started having sex. I can be happy if I could find him using PrEP even though that could pave a way for him to have many partners but if he is protected from the virus, that's fine with me. (MSW starting PrEP, 41 yrs)
>
> I explained to her [my mother] after a couple of days that the pills she saw are not for the virus because I could see she was not at ease. But the pills are so that I cannot get the virus. (MSW re-starting PrEP, 21 yrs)

While the majority of male respondents with direct experience of PrEP talked about sharing their PrEP experience with others, some were undecided: "I don't know if I will end up telling them [friends] I use the pills or not because I know they will ask" (MSW continuing PrEP, no age given-1). A big age gap to younger neighbors or an anticipated negative response from friends including the fear to be ridiculed or the fear to be mistaken for a PLHIV were reasons not to share one's PrEP experience with others.

> So, you do not disclose that there is something like this, you could only just talk in general that there is something like this beside the condom. Just throw it in the air and everyone could just talk about it. (MSW discontinuing PrEP, 41 yrs)
>
> I: Why don't you tell them [friends]?
> R: Thinking of it, it is the same problem I just mentioned that when PrEP was introduced to us they said PrEP is similar to ARVs. So, telling any one of them would be risking them telling other people and making fun of me. (MSW continuing PrEP, 29 yrs)

Some male PrEP providers shared the same concern - that people on PrEP may be mistaken for taking ART. Masculinity issues of autonomy, not needing to share information as well as anticipating stigma led some MSW not to talk about PrEP, yet the majority of male respondents, independent of age or the number of sexual partners, felt a need to inform others – first and foremost, their sexual partner, but also friends, colleagues, unspecified others and family members. This even held true for men who declined PrEP and showed the importance of men's social interactions with others on issues that held importance for them. It also showed their desire to reduce the risks for people they cared about.

3.2.4.5. "I think my wife will be happy" – reactions, support and discouragement

Many MSW depicted or assumed a positive reaction by their female partners as the partner may feel indirectly protected or assured, "maybe I'd say she took it as an advantage in that she might have thought, "this person sometimes leaves, and I don't know where he is and what he gets up to"" (MSW continuing PrEP, 34 yrs). But MSW were also aware that the female partner may not endorse their life-style. "She will know, I won't bring the virus home from

outside. I don't know what else she will think in terms of me having many partners" (MSW starting PrEP, 41 yrs). Intimate partners' reactions ranged from being happy and supportive, not reacting at all to being upset or suspicious. One man did not expect the harsh reaction by his partner and changed his story in the process, presenting the pills as belonging to his friend rather than himself (MSW continuing PrEP, 30 yrs). A partner's attitude could, however, also change and lead to her own initiation of PrEP:

R: She was first upset to be honest, because the way she thought of it was that I want to be... uh... I want to... to be able to have more sexual partners… but with time, she was convinced that it is the best idea since the generation we're living in is... you cannot trust anyone these days.
I: Oh okay. So, were you the one that actually convinced her and told her how PrEP works and you convinced her that you were not going to cheat on her?
R: (Giggles) Yes, I was. And she was willing to sell it also…
I: Oh okay, so she's taking PrEP as well?
R: Yes, she's taking PrEP as well. (MSW continuing 25 yrs)

For MSW on PrEP it remained unclear whether a partner on PrEP was perceived as supportive or as a challenge with differing reactions by MSW on PrEP. While the 25-year old man quoted above seemed happy about his partner taking PrEP, a middle-aged man was furious when he discovered that his wife took the pills: "her taking pills was a direct meaning that she is protecting herself from me or that she is cheating" (MSW starting PrEP, 41 yrs). He only gradually gained a different understanding by talking to the church minister and then accorded the same rights of taking PrEP to his wife and informed his children about it. Many MSW expected a partner on PrEP to share this information and to not take PrEP clandestinely thus establishing themselves as head of the household while also upholding truthfulness in their relationships and underscoring the importance of talking about PrEP with the partner(s). For discontinuers, views varied from theoretically welcoming the idea of the partner taking PrEP – "I may never know what she gets herself into when we're not together but if she takes PrEP, I know that we're both safe" (MSW discontinuing PrEP, 40 yrs) – to stating that the partner never initiated PrEP due to his lack of support highlighting his position as head of household and perhaps his ambiguity towards a partner on PrEP.

MSW on PrEP experienced moral support mainly through the wife or partner who reminded them of the pills or their appointments and encouraged them to stay on PrEP – "she would also encourage me to take PrEP because we could not always use the condom" (MSW discontinuing PrEP, 28 yrs). A partner on ART made it convenient to take the pills together and to support each other. "In the evening we watch "Generations", then we remember that we have to take our pills" (MSW starting PrEP, 33 yrs). "To be honest we remind each other because there are two of us. If I forget, my wife will ask me if I have taken them" (MSW continuing PrEP, 56 yrs). Some viewed joint pill-taking as sharing the burden of prevention:

> I like that I share the problem of taking pills with my partner. If I forget them, we are okay because she is virally suppressed, and if she forgets then I am okay because I have PrEP. It's much better this way. (MSW continuing PrEP, no age given-2)

While some family members had even encouraged their relatives to initiate PrEP, "back at home, my step mother or is it my godmother, she warned that I was at substantial risk of getting HIV so I should start getting PrEP" (MSW starting PrEP, 21 years), reactions and support by family members to taking PrEP could vary. Parents and siblings were described as interested and supportive by some, others described a brother or other relatives as skeptical of PrEP. They had to be shown information material about PrEP or needed explanations about PrEP. Some family members viewed daily pill-taking as too burdensome and would try and persuade their family member to give up PrEP by querying why one should take pills voluntarily. "They didn't understand how I could be taking pills daily while I wasn't sick with anything. Some thought I was actually HIV-positive, and my PrEP pills were ART" (MSW discontinuing PrEP, 40 yrs). A young MSW was discouraged by his brother. "He just said, I should stop taking the pills; I'm busy taking pills, am I sick?" (MSW discontinuing PrEP, 21 yrs).

Reactions, support and discouragement through friends and colleagues was experienced as a similar mixed bag. Some friends were interested and provided moral support and PrEP reminders. "Sometimes they even used to call me since they know that I am taking my pills every day at six in the evening, they usually call me and say, "hey there, remember to take your pills (giggles)"" (MSW continuing PrEP, 25 yrs). One MSW on PrEP received permission and time-out from his boss for taking the pills and for hospital appointments when he informed him about PrEP. Other MSWs depicted friends and colleagues' attitudes as less favorable, viewing daily pill-taking as a challenge, preferring condoms over pills or having many questions about PrEP especially regarding the similarities to ART. One PrEP provider was bombarded with arguments by friends who regarded PrEP as a ploy by the pharmaceutical industry. "Now you want to switch the strategy to benefit your pharmaceuticals because now you want those that are HIV negative to seem like they are on ARVs" (male PrEP provider, 36 yrs).

While a supportive attitude dominated, discouragement or a negative attitude towards PrEP by one's reference group was predominantly experienced through family or friends. It expressed itself in being seen as irresponsible – "they (my family) would think I would live recklessly" (MSW discontinuing PrEP, 27 yrs), as becoming confused with PLHIV – "they were so much against PrEP, insisting that taking PrEP is similar to taking ARVs" (MSW continuing PrEP, 29 yrs). Being seen as "mentally challenged" (MSW continuing PrEP, 30 yrs), laughed at or being questioned about taking pills when not sick as the above quotes showed were additional negative reactions feared or experienced. Notions of illness, masculinity and stigma could converge and counteract men's decision to take PrEP. While the 21-year old

discontinuer quoted above depicted giving up PrEP because of forgetting to take the pills, the extent to which his brother's questions influenced this decision remained unclear. The domestic context could be a challenge for some. "Some, they don't even get to introduce the topic at home because they know that if they get to introduce it, there will be negativity from the spouse or the relatives or the in-laws" (male PrEP provider, 34 yrs-1).

Conversely, MSW directly approached about PrEP, including discontinuers, encouraged their friends and colleagues to take PrEP. "They like my testimony, and you find that I am the one who encourages them" (MSW discontinuing PrEP, 28 yrs). "They [my co-workers] take what I am saying and are happy of such pills because they find them easier than the condom meaning they are just like me" (MSW continuing PrEP, 65 yrs). One man even offered to collect the pills for his colleagues:

> I can even get the pills for my colleagues if they are stuck at work because sometimes you find that they clock in at 4am and leave work at 6pm. I can take their papers and come to the clinic to refill for them. It will be easy since I drive to the clinic. (MSW starting PrEP, 34 yrs)

Encouragement therefore went both ways for MSW on PrEP – encouraging others and being encouraged and reminded. Practical support, by contrast, was hardly talked about – only two men mentioned either being supported financially, "even money will not be a problem because my parents can help in that regard" (MSW starting PrEP, 21 yrs) or sending the wife to collect the pills. "She (my wife) came for her refills, her ART pills and then wanted to also get mine… I was at work, then I asked her to pick them up for me" (MSW continuing PrEP, 65 yrs).

Positive reactions and encouragement by partners, friends, colleagues and family outweighed negative reactions and discouragement in MSW's descriptions with some MSW highlighting their independent decision of taking PrEP. "No one encouraged me to take PrEP; I just decided to start the pills myself and no one told me not to take PrEP" (MSW continuing PrEP, no age given-1).

3.2.4.6. PrEP - a tool for "having sex all over the place"?

As we have seen in the chapter on individuals, MSW preferred PrEP to condoms for a variety of reasons, some linked to a general dislike or problems with condom usage (see 3.2.3.3.). With few exceptions, married MSW restricted condom use to extra-marital partners: "I have been using condoms all my life before, only not with my wife but I have been doing so with my secret partners" (MSW continuing PrEP, no age given-1). A new partner or lack of trust was another reason for condom usage: "I use it with those that I do not trust" (MSW continuing PrEP, 27 yrs). Married and older MSW in serodiscordant relationships who did not or could not use condoms gained a feeling of safety.

> She [my new wife] is HIV-positive and drinking ARVs… I heard the nurses saying how the pills are going to help me because I can't use a condom… a condom, eish, no, no (laughing). You

> know yourself (laughing) eating a sweet in a plastic is never done and I can't. AIDS came when already I had a wife and back then I could have wondered why I am using a condom, what for because I was not cheating. (MSW continuing PrEP, 65 yrs)

While the condom for this older man was tantamount to cheating, for younger men it had become more established to use condoms, yet a drawback was seen in disrupting and sometimes ending sexual intercourse before it had started. Young men talked about "things happening so fast" that they did not have enough time to put on the condom (MSW starting PrEP, 24 yrs). The condom was further seen to thwart sexual relations as a stakeholder related about the experience of boys.

> The girl visits him, and the girl says, it's ok for them to have sex, and then maybe they're together in bed and she says, it's ok. So, he says that moment when he has gone to get the condom, I think I feel like when I come back the girl will be like, "I don't want anymore". So, the boys think this is my opportunity and it happens like all the time. When we have about 50 boys, about 10 of them they always say that this is happening to them. (male stakeholder, no age given-3)

In addition to greater convenience, MSW who took up PrEP saw themselves as having more enjoyable sexual intercourse with their partners physically and mentally – "Sex is nice when it's "flesh-to-flesh"" (MSW accepting PrEP, 20 yrs). "She (my girlfriend) is not so stressed with these pills, we can have sex. I can do what I want to her and it's not a problem. We, we work together" (MSW continuing PrEP, no age given-2), thus describing the partner more at ease. The notion of "PrEP as a tool for more intimacy and greater pleasure" (Berner-Rodoreda et al., 2020c, p. 10) was also echoed by individual stakeholders and community leaders – "you will feel the desired feeling during sex as you would have had your pill" (laughing) (male local leader, 29 yrs) quoted in (ibid).

A further advantage of PrEP was that one could plan for it and was safe whatever the circumstances:

> I am happy about it because the other methods of protection like the condom for example it happens that I am away and I do not have the condom in my pocket then you find that I am in a situation and finding it is difficult and [you] end up saying, ahh, we will see what happens yet the pill is always in my blood. (male local leader, 63 yrs-1)

Having PrEP in one's blood and therefore being protected against HIV with or without condoms opened up more opportunities for sexual relations outside of marriage.

> I do sometimes have sex outside the marriage and still use a condom but what I like with me being on PrEP is that I won't miss an opportunity to have sex anytime because I don't carry condoms with me as that would put me in trouble with my wife; I have to explain what condoms are for as we don't use them because we are married. But with the pills in my body all the time it's like I am carrying that condom with me but this time it's invisible and inside my body. (MSW continuing PrEP, no age given-1)

In 3.2.3.4. I noted that health personnel and stakeholders expressed concerns about risk compensation, i.e. increasing risks due to feeling protected through PrEP. "To them [men], PrEP is here to substitute condoms, and they don't fear of STIs as long as they are not using condoms" (female PrEP provider, 52 yrs), yet men's response was mixed. About half of the

interviewees on PrEP mentioned reducing condom use with their partners (Berner-Rodoreda et al., 2020c), particularly men below the age of 30. “Having PrEP by my side, I’ll just throw away the condom” (MSW starting PrEP, 20 yrs). Yet reasons for reducing condom use could vary: for some this was due to wanting to have children. A consideration for the partner’s preference and well-being could also play a role in the decision:

> R: My partner says she does not want it [the condom]. She says it hurts her.
> I: In other words, you will stop using it?
> R: I will use it outside but here I will not use it because she said it was hurting her. (MSW starting PrEP, 33 yrs)

The repercussions of condomless sex potentially leading to pregnancy also had to be considered for society at large and for one’s marriage if it was practiced with other partners.

> When I started using condoms, I was not afraid of HIV but what I was afraid of is impregnating someone because this would get me in trouble at home (laughing) so my worry is… if people are only trained on PrEP and not also on contraception, PrEP may be successful but we may have a high birth rate. (male local leader, 41 yrs)

MSW thus weighed up the risks of forging condoms. About the same number of MSW on PrEP stated that their condom use with their partner(s) had not changed (Berner-Rodoreda et al., 2020c). Some did not specify if they had used a condom before – so condom use may have been low or high to start with. Others had doubts about the efficacy of PrEP and preferred to take precautions, “once you get the pills you still have to use condoms to get dual protection.” (MSW starting PrEP, 34 yrs) quoted in (Berner-Rodoreda et al., 2020c) or wanted to ensure that they were protected against unwanted pregnancies: “If PrEP was also a contraceptive pill, then I wouldn’t use a condom” (MSW starting PrEP, 21 yrs) or against STIS: “PrEP was just going to help me not to get HIV not STIs because I know I would just sleep around” (MSW starting PrEP, 24 yrs). As already published,

> PrEP was seen by some men as creating more opportunities to engage in sexual activities without having to rely on condoms, yet no trends could be established on changes in the number of sexual partners in the qualitative data. Reasons for decreasing partners were the hope “to get settled with one partner” (Male PrEP initiator, 21 yrs) or not fully trusting PrEP’s efficacy, “fear is keeping me in check” (Male PrEP continuer, 30 yrs). Many men stated the same number of sexual partners as before. (Berner-Rodoreda et al., 2020c)

One MSW on PrEP rebutted the idea of clients on PrEP having more sexual encounters by maintaining that: “they are already having sex. They had sex then, they have sex now and they have it in the future. These things are not going to make it worse” (MSW continuing PrEP, no age given-2).

MSW in Eswatini reacted concerned or relieved about the social and sexual implications of PrEP in terms of the quality and quantity of their sexual relationships with women, yet many seemed to practice the same sexual behavior as before. Combining PrEP with condom use or other prevention methods was viewed across respondent groups as a way

to be safe and protected from HIV, STIs, and pregnancy. Others, mainly MSW in their 20s, decreased condom usage after taking up PrEP.

3.2.4.7. Synopsis of PrEP facilitators and barriers for men at relationship level

Table 22 summarizes supportive and obstructive social factors for men's experience of PrEP. Social factors influencing trust and distrust may not always have direct consequences for PrEP use.

Table 22 MSW's facilitators and barriers for PrEP uptake and retention at relationship level

Facilitators	Barriers
Partner-facilitated (serodiscordant relationship, distrusting partner's fidelity or HIV status)	Trusting partner (no need for further protection)
Information sharing among family and friends	Fear of being mistaken for PLHIV, mocked or losing friendship
Informing partner about one's PrEP use and expecting positive reaction	Reluctance to broach subject of sexuality, HIV or PrEP in partnership
Encouragement/reminders from partner, friends and family	Family's, friends' and partner's critical attitude towards PrEP
Taking pills together in serodiscordant relationship	
Encouraging others to take up PrEP	
Greater ease and peace of mind in sexual relationships; overcoming distrust	
Opportunity for more sexual relations	
Social gatherings and drinking spots providing access to health information	Clubbing/socializing and drinking alcohol interfering with pill-taking.

Figure 19 illustrates MSW's individual and relationship-based reasons for uptake and decline and their social experience of PrEP showing that men draw on different and at times contradictory masculinity notions and make context-specific decisions (reducing sexual partners in order to settle down; forgoing condoms for more intimacy or better sexual performance, informing colleagues about PrEP to protect them against an HIV infection).

In their intimate, work and social relationships, MSW could act on facilitation and control, on responsibility and virility. Changes in men's behavior could also happen during their life-course (from being opposed to the wife taking PrEP to tolerating it and informing the children about it). Men's decisions and behavior could thus be context-specific and time-bound. Furthermore, the same behavior, such as reduced condom use could open the way for more sexual partners; it could also be due to respecting the partner's wishes or trying for a child. Men's behavior could thus be linked to virility and to responsibility and a consideration for others, see *figure 19*.

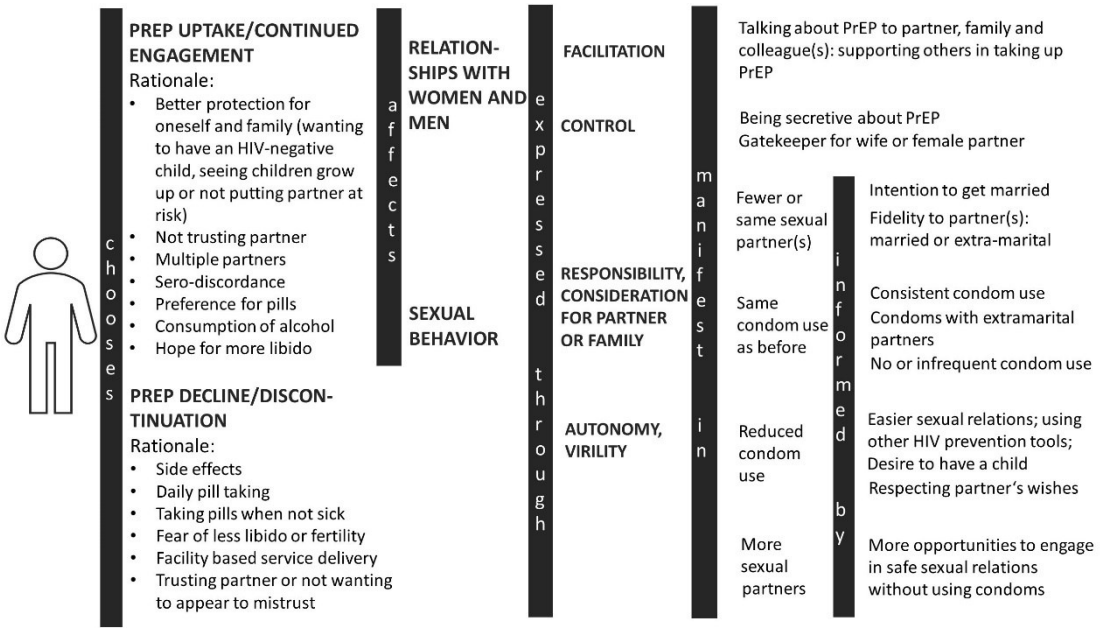

Figure 19 MSW's PrEP related decisions

3.2.5. PrEP service delivery for MSW

In this sub-chapter I will examine MSW's experience of public nurse-led health clinics in the Hhohho region in semi-urban and rural areas from visiting health facilities and being initiated on PrEP (3.2.5.1. – 3.2.5.3.) to collecting pills and being monitored (3.2.5.4.), interacting with health personnel (3.2.5.5.) to their view of the services and recommendations for future PrEP education and service delivery for MSW (3.2.5.6., 3.2.5.7). I will close the chapter by providing a synopsis of facilitators and barriers at the institutional level (3.2.5.8.)

3.2.5.1. The experience of starting PrEP at a health facility – differing insider and outsider views

The majority of MSW who were approached about PrEP including all of the decliners recounted hearing about PrEP at the health facility, some when they were testing for HIV. As mentioned in the chapter on individuals, MSW did not find testing a major obstacle for taking up PrEP. An HIV-test was, however, not all that was required to start PrEP. Additional tests such as a creatinine tests needed to be conducted to determine the state of the kidneys and to rule out hepatitis B. A female PrEP provider mentioned that hepatitis was discovered in two clients and may have gone unnoticed, if they had not come for PrEP, thus seeing PrEP as an additional health benefit.

As mentioned in 3.2.1., a risk assessment was routinely administered in the PrEP demonstration project, see appendices 7 and 8. The risk assessment contained questions about clients' sexual behavior which needed to be discussed with a PrEP provider which some regarded as challenging in the socio-cultural context.

> Culturally, we are not so easy to talk about sex as the western countries. It's like you're coming into my private space so the answer you get from me will not be so close to the truth… Sex is in the private space. And I get that feeling with clients most of the time, they

> won't tell me something although they would be needing the service. (male PrEP provider, 33)

This view was echoed by men on PrEP. An oral risk-assessment prompted reactions such as "another person would be scared of answering just like me right now" (Eswatini, man continuing PrEP, 34 yrs) or "I might lie" (MSW continuing PrEP, 30 yrs), whereas answering intimate questions in writing and in their own time was more appealing and felt less obtrusive. Some PrEP providers, however, felt it took too long to let clients fill out the forms by themselves.

> The difficulty of the self-risk assessment is that when you give it to some people they will take more than 15 minutes trying to fill it because they are not educated when the questions are just five. It is that and sometimes you find that there is no time. Then you have to do the risk assessment so that you are fast. (male PrEP provider, 34 yrs-2)

While MSW initiated on PrEP did not complain about the procedure commenting that "I did not find it to be a lot of questions" (MSW starting PrEP, 33 yrs) or "it is not something that you have to read until you get tired, the questions are brief. I find it to be ok" (MSW discontinuing PrEP, 28 yrs), PrEP providers and stakeholders estimated the length of time for PrEP initiation between 15 and 90 minutes, and some regarded the process as too time-consuming. "When somebody says, can you initiate this person on PrEP, you're just sitting there thinking about that loooong tool. And you're thinking, can we have that be optional?" (male PrEP provider, 28 yrs). Some also thought the long initiation period would be off-putting for men.

> I: The whole process takes about an hour and a half.
> R: It takes?
> I: An hour and a half.
> R: (Laughs) Ok. For men you are not likely to see higher uptake based on the process… Men want a quick thing, I don't know but I don't see men rushing to it based on the long process to be there. (male stakeholder, no age given-4) quoted in (Berner-Rodoreda et al., 2020c)

The concern about paper work and an extended clinic visit was also shared by local leaders: "in the end you will no longer want to go to the hospital because of the lengthy processes" (male local leader, 41 yrs).

Initiating clients on PrEP by sending them from pillar to post – from listening to a general health and PrEP talk or watching a video about PrEP in the waiting area to VCT, lab tests, possibly a consultation about STIs to PrEP counselling and initiation – was viewed by PrEP providers as discouraging for clients and a possible source for losing them in the process. MSW appreciated being seen by one provider as introduced in some health facilities. "It is good that they already have people dealing with PrEP in particular instead of having to move around the hospital seeking help" (MSW starting PrEP, 21 yrs).

Table 17 showed that 36% of men found to be at risk of an HIV infection through the risk assessment took up PrEP. In the interviews, decliners mentioned issues regarding PrEP usage or the impact it may have on their relationship as the main reason for not initiating, not

the procedure itself. PrEP providers also spoke of clients who declined because they had to think about it or because they were in a rush. One provider felt that men "are not quick in starting something" (female PrEP provider, 31 yrs-2). This is in line with quantitative data (see *figure 17*).

While many PrEP providers and stakeholders viewed the lengthy PrEP initiation process critically in terms of losing clients, men who had undergone the process neither complained of the risk assessment nor of lengthy procedures for initiating PrEP. Outsider views by PrEP providers, men in FGDs, stakeholders and local leaders thus tended to differ from insider views, and the interest and will of male clients to take up PrEP seems to have been underestimated by those providing the services.

3.2.5.2. Not wanting to be talked about, seen or heard

The desire not to be associated with HIV and antiretroviral treatment played a major role for some MSW on PrEP - "if only PrEP had its specific center" (MSW discontinuing PrEP, 30 yrs). Stand-alone buildings that were clearly associated with HIV were particularly loathed.

> the issue is that the VCT is not attached to the clinic it is a building on its own yet here you can see it is just through that door. Thus no one will know where you are going whereas with the clinic that side you are seen by everyone because it is built on its own thus people still have this habit of pointing at others… People still have this thing where they look at you when you go to the VCT as if it is not a place where people are supposed to go. (MSW discontinuing PrEP, 41 yrs)

With PrEP services being offered alongside ART services, a salient concern was the fear to be mistaken for a PLHIV. "Actually, when I come to the clinic for the refill, will I have to queue with those who are coming for their ART refills? If that happens everyone will think, I'm HIV-positive" (MSW starting PrEP, 24 yrs). Being seen at the facility would therefore expose oneself to stigma by association – waiting with PLHIV and therefore being assumed to be HIV-positive. Some MSW expressed a preference for more inconspicuous PrEP services. "Another thing, at our local clinic, it would be great not to face the other clients at all" (MSW continuing PrEP, 30 yrs). PrEP providers were aware of exposing clients to stigma and decided to offer PrEP anywhere but in the ART section.

> What works for us is that there is no room that is specifically for PrEP but every room you can access PrEP even if you are here for another service and then you decide you need PrEP you don't have to leave this room to go to another one to access it. So, I think that is a strategy that works for us… In the clinic every room is ok but people normally say that they do not like ART because if you go there, people give you labels and I think there is stigma. (female PrEP provider, 36 yrs-2)

A further major consideration for MSW on PrEP was the similarity of PrEP pills and ARVs. PrEP providers reported clients' reactions as follows:

> And they also look at the pills that they will take and think about what people will say about them and that they will say they are now taking ARVs and they are just in denial if I can put it like that. (female PrEP provider, 32 yrs-2)

With PrEP pills and ARVs being packaged in similar containers that tended to rattle, MSW on PrEP felt exposed when transporting PrEP pills.

> The container they are in makes noise; when you go with them even in the kombi they make a noise. And then people look at you and think that you are also taking the pills. I do not know why they are they are (not) placed like these panado pills… That is why most people when they leave the clinic they take them out of that container and put them in the container for other pills just to avoid the noise. (MSW discontinuing PrEP, 41 yrs)

The issue of confidentiality was raised by a PrEP stakeholder and men in an FGD in relation to men's preference for private health services and in relation to not trusting a nurse from one's own community, yet seemed to be more applicable to men living with HIV. Confidentiality was not a theme that MSW on PrEP in Eswatini raised in the interviews – they were wary of being seen, talked about by other clients in the facility or being exposed through the rattling of pills; mistrust towards health personnel was not verbalized.

3.2.5.3. Motivators and stressors for PrEP monitoring visits

Clients on PrEP were asked to return after one month, then after two months and henceforth in three monthly intervals to test for HIV. They needed to ascertain that they had not sero-converted and to collect their PrEP supplies. In addition to testing regularly for HIV (3.2.3.2.), wanting to know one's status to see if PrEP had been effective acted as an incentive and motivation to visit the facility every quarter. The fact that it was a voluntary and personal decision to maintain one's health seemed to make a difference to men:

> These pills are mine, so I'll be responsible for doing what is right for my own good and benefit since no one is forcing me into it but I am voluntarily getting into PrEP. Therefore, I'll make sure that I keep time in terms of refills and anything that is related to taking the pills. (MSW starting PrEP, 20 yrs)

Receiving a negative test result confirmed the efficacy of PrEP to MSW irrespective of knowing the serostatus of the partner. "So, when you go back for testing you find yourself clean and find yourself going back whereas you know very well that you got naughty somewhere; it shows that PrEP has helped you" (MSW continuing PrEP, 34 yrs). This also re-assured men in serodiscordant relationships.

> The good experience I have since I started with the pills is that whenever I get tested, they find my blood clean; and for that it shows me that even if I have a wife who is taking ART pills but I am always found HIV negative even when I am not using condoms. So, it dawned on me what nurses were saying, pills prevent HIV is really happening… the pills are working and I am happy with that. (MSW continuing PrEP, 65 yrs) quoted in (Berner-Rodoreda et al., 2020c)

Remaining "clean" was therefore an incentive, yet also juxtaposed HIV-negative individuals with HIV-positive individuals showing MSW's understanding of HIV as a contamination, as not being "clean".

Men's secret love life acted as a further incentive to keep collecting the PrEP pills from the facility.

> Nothing I foresee that will make it hard to do that as I said that I have someone that I want to have sex with who is my secret partner. So, in order to do that I have to come collect them;

> even if I can relocate in terms of work, I can try coming here as I have a car and I think that will make it easy for me. (MSW starting PrEP, 41 yrs)

Opening times were mentioned indirectly as a challenge by offering to collect PrEP for colleagues who may have long working hours or by stating that one could not make it to the clinic due to one's busy work schedule or working far from the facility. Weekend services varied from one facility to another: while one PrEP provider talked about not offering PrEP on a Saturday and sending clients away, another recounted initiating a man on PrEP late one Saturday.

Service provision and queuing could be further stressors for men. A man in an FGD talked generally about long waiting periods as a deterrent for men to visit health facilities.

> So, when I decide to go to the clinic and steal maybe 10 minutes from my boss' time and seek health services, you find that there is a long queue at the clinic mind you I am on duty using my boss' time, so I'll go back without accessing the service I have come for cos of the line. (man in FGD, 26 yrs)

Yet only two MSW on PrEP spoke about having to queue for a long time or having to come back to receive the desired service and even this did not deter them. MSW also did not express procedural concerns about their next appointment: "They showed me which rooms to go to and also that I have to take an HIV test before getting the pills just like today" (MSW starting PrEP, 21 yrs). Some PrEP providers talked about minimizing the waiting period. "We try here that during initiation, we fast-track them then once they are enrolled, they choose their desired PrEP delivery point even when they come for refills, we try by all means that they don't queue" (female PrEP provider, 24 yrs-4).

Few PrEP providers, stakeholders or communal leaders raised the issue of transport in the interviews despite the need for MSW to visit the facility at regular intervals; a few mentioned the non-availability of PrEP in many locations or people living or working far from facilities thus indirectly hinting at obstacles for MSW in taking up or continuing PrEP. Many men on PrEP irrespective of age or residence in rural or semi-urban settings depicted long distances, working far away, being busy, experiencing difficulties in finding or paying for transport as creating a barrier for regular facility visits.

> I: What do you think will make it difficult for you to get your pills from the clinic?
> R: It is money but then if I am now serious I can leave at 5:30 or 6 and I can get here. (MSW starting PrEP, 33 yrs).

Distance, work commitments and transport challenges were mentioned by two out of five MSW who stopped taking PrEP:

> The nature of my job played a very vital role in contributing to that issue of failing to come to collect my pills on time. I just wish maybe the clinic around my neighborhood also has PrEP that could at least ease the stress and burden of travelling long distances for my PrEP refills. (MSW discontinuing PrEP, 40 yrs)

An appointment at the clinic could at times only be realized with saving up enough money and could lead to delays: “the date is now close and then I would have to wait until I have money to get here” (MSW discontinuing PrEP, 28 yrs).

MSW who lived close to a health facility offering PrEP in a rural or semi-urban area or who had access to transport depicted no access problems; some had parents who gave them money for transport, others (in a semi-urban area) owned a car, “my car always passes by the hospitals, so I can always get my pills on my way to [name of location]” (MSW starting PrEP, no age given). The socio-economic and work situation had a bearing on the ease or difficulties in visiting a health facility.

Yet, being late for re-fills was seen and interpreted differently within MSW engaged with PrEP in comparison to PrEP providers: it could become a reason for discontinuing and the basis for re-starting PrEP. While transport issues were a stressor for some MSW on PrEP, others, especially younger MSW, did not view a late presentation for their refill at the facility as a major problem – as a worst case, they would have to re-start PrEP again. “With PrEP it is not like if I miss two days I will die, and even when I get here, I take them for seven days and then I’m am safe again” (MSW discontinuing PrEP, 28 yrs). The fact that one could interrupt PrEP held charm for MSW and for community leaders who had been afraid that one may have to take PrEP continuously; men based their choice whether or not to take PrEP and collect the next PrEP re-fill on their financial and work as well as their current risk situation or on convenience, “whenever one is encountering some problems, they can stop taking it” (MSW starting PrEP, 20 yrs).

> I: So, the reason for the delay is that you were busy?
> R: I can say like that and the transport to get here needs money. And I do not have the reason to come and get them now because when I want to have sex…when I want to have sex is the time when I am done harvesting. (MSW re-starting PrEP, 21 yrs)

In contrast to this situation- and risk-specific attitude towards PrEP usage and retention, some PrEP providers expressed concern about monitoring PrEP clients who stop-started.

> Another thing is the people who start PrEP but never come back to the clinic or those who come back weeks after their appointment having been called only to state that they’ve had enough with PrEP, but then again, the next time they come to the clinic they want to start PrEP again. So yeah, that makes it difficult to monitor it because a client stops and resumes PrEP at any time. (male PrEP provider, 24 yrs)

PrEP was also seen to require more dedication on the part of the client than other prevention tools.

> My take on PrEP is that, fine, there are methods of preventing HIV, but this one is a bit complicated because it needs commitment like someone that is on ART, it needs you to be focused and determined… unlike using a condom where you find yourself in a situation and you have a condom in your pocket and you play it safe there and it is over. It needs you to come back to the clinic for refills, you see and there are clinical procedures. (male PrEP provider, 36 yrs)

While missing re-fill appointments was problematized by some PrEP providers, others acknowledged the difficulty of clients to keep their appointments and offered a more flexible approach for re-fill dates - exactly what this consisted of was not specified.

> Our problem here, our people live in the mountains where they grow dagga [cannabis], so with the refill dates we have a challenge because when they are up there, they do not come for refills but we are flexible as a facility. (female PrEP provider, 35 yrs-1)

PrEP providers and clients viewed flexible refill dates as an enabling factor for continuing PrEP. "I just came and told them about my commitments tomorrow and asked if I could get the pills today instead of tomorrow…They said that there was no problem, if tomorrow I'll be away" (MSW continuing PrEP, 29 yrs).

For MSW on PrEP, positive PrEP views outweighed stressors; MSW continuing PrEP depicted no interruptions in their pill-taking and an intended long-term commitment to PrEP, yet they were not representative of all male PrEP clients, many of whom quickly "voted with their feet" and discontinued PrEP, see *figure 18*. While the number of male discontinuers interviewed was too small to get a comprehensive view of their various motives for stopping PrEP, MSW mentioned side-effects, problems with honoring the re-fill date, stigma, alcohol and having to take pills without being sick as reasons for discontinuing – regular facility visits thus appear to be one obstacle among others.

3.2.5.4. Interacting with facility staff

All men on PrEP had to have prolonged interaction with health staff for the risk assessment, blood tests and for being initiated on PrEP or coming back for re-fills. Many men took their own initiative and asked about PrEP which they had heard about at the facility or elsewhere: they came for advice on PrEP and how to live with an HIV-positive partner or they were curious after seeing the medication - "I saw the bottle and then I asked what it was for and then they told me that it is to prevent HIV, and I was happy" (MSW discontinuing PrEP, 36 yrs). Counselling and providing information about PrEP was seen by PrEP providers as crucial for dispelling clients' fears. One PrEP provider underscored that the client should make an independent decision on PrEP.

> But most importantly it must come from them and not from you. It must be them that volunteer to take it after you have explained to them about it. You must not force the person to take PrEP because they may feel they are not ready. (male PrEP provider, 34 yrs-2)

While MSW taking up PrEP seemed mainly interested in gaining more knowledge on PrEP, decliners who did not know how to broach the subject with their partner expressed a desire for being supported by health personnel in facilitating an open exchange about PrEP. "I can say that I should come with her so we can be educated together. Then I can raise my point to want to take the pill. Maybe we can come together and listen to the health education" (MSW declining PrEP, 34 yrs).

Male clients were thought to be more difficult to deal with than female clients by some female PrEP providers as MSW would query and express concerns:

> Okay females, they don't have problems. If you advise or talk to them about PrEP, they don't have many questions. They just start the program. But men (lowers her voice), they ask many questions. Some man asked these questions and he said "you mean, I should start ARVs? Our main aim is for everyone to take ARVs?" then you get to see what people really think. Even if you can try and explain that yes, PrEP is ARV but that doesn't necessarily mean that you are on ARVs. (female PrEP provider, 31 yrs-2)

Health personnel, especially female providers, mentioned the importance of good rapport and amiable relationships for clients' uptake and retention of PrEP. "It all depends on how friendly you are with the client. Then you can come to an agreement" (female PrEP provider, 33 yrs). "I believe that with clients if you give them medication they will not take it the right way if you have shouted at them yet if you are calm they will take it the right way" (female PrEP provider, 27 yrs-3).

A relationship of trust with a PrEP provider could also express itself in informing the nurse of wanting to stop PrEP rather than simply ceasing to collect PrEP. "I spoke to him (the nurse) because he is the one I had got the pills from… Yes, I left it on my own but I first spoke to the nurse that it was making me sick." (MSW discontinuing PrEP, 36 yrs). Yet the same individual was hesitant to express his wish to the nurse to re-start because of his lingering fear that the adverse effects could resurface. The fear to be rebuked for inconsistency also led to hiding the full truth from health personnel: "I haven't told them that I once delayed by an hour… I don't want to be questioned about it" (MSW continuing PrEP, 30 yrs) thus showing the MSW could also display a certain shyness towards health personnel.

PrEP providers realized the importance of creating an atmosphere where clients could talk about their problems, as they would otherwise seek advice elsewhere: "Also to motivate them that if there is something that they do not understand they should not ask their neighbors but they should come back to the clinic." (female PrEP provider, 36 yrs-1).

While some MSW on PrEP talked about nurses being "very polite and nice" (MSW continuing PrEP, 34 yrs) and "treating me very well" (MSW continuing PrEP, 65 yrs), very few men reported experiences with absent, unhelpful and unfriendly health personnel; one man changed the clinic because of the poor services he received.

> R: When I told them I just needed a refill, they said I still had to wait and see a nurse, but the nurse never came. I spent the whole day just waiting. And eish, they were rude.
> I: So, did you get your refill?
> R: Yes, but a week later.
> I: From the same place?
> R: Yes, and it was still awful. The attitude in this place. They don't want to help you. But I got it. Now I can get the pills again closer to my home, but it meant that I missed a lot of my pills. (MSW continuing PrEP, no age given)

A local leader felt that aloof health staff would dissuade men from utilizing the services:

> At the health service centers, we find ladies who are very hard to talk to. They are educated but they are difficult to approach and talk to, I think this is a serious concern… if it was a male he would have lost patience and left without accessing the service and that is my main area of concern, but of course it's not all of them who have such an attitude. (male local leader, 41 yrs)

While the kindliness of staff varied, even obstacles such as unfriendly staff or having to visit a facility twice to access PrEP did not deter men to demand PrEP at facilities. Empathetic and flexible health staff enabled men to have an open discussion on discontinuation, yet some apprehension about PrEP providers remained.

3.2.5.5. Does PrEP facility service provision work for MSW?

MSW were described by all respondent groups as generally avoiding health facilities. "It's hard for us men to go to the clinic. We are naturally afraid of hospitals." (man in FGD, 31 yrs) quoted in (Berner-Rodoreda et al., 2020c, p. 12). They would only visit the facilities when they were sick or pushed or pulled to do so, "the one that comes is one that has been pulled by the beard by their wife telling them that they will die" (male decision maker, 30 yrs). This view of MSW applied to health services in general.

> Let us say we find the wife with an STI, they [men] will not come if we ask them to come for treatment as well. It is not easy for the men to come to the clinic so we can maybe write them a piece of paper and tell them and when they do come maybe it is because we have been phoning them and phoning them to come and at times they just say that we are annoying them. (female PrEP provider, 27 yrs-3)

Restricting PrEP to health clinics was therefore regarded as counterproductive to MSW's uptake and retention of PrEP particularly by PrEP providers, stakeholders, community leaders, men in FGDs and decision-makers. A PrEP stakeholder commented that "offering it [PrEP] in facilities – is a plan for failure. You can't do the same thing over and over. You can't keep bringing men to facilities - it doesn't work" (male stakeholder, 32 yrs). He added that health facilities were not built with men in mind: "There's not a toilet for men in these public health facilities" (male stakeholder, 32 yrs) quoted in (Berner-Rodoreda et al., 2020c, p. 13) and felt that masculine ideals would have repercussions for men's use of health facilities. "But they (men) want to be seen as strong and to be strong. They can't just access certain services" (male stakeholder, 32 yrs). The view that MSWs cannot be reached in big numbers through health facilities and that more efforts are needed to educate men about PrEP was also put forward by MSW who declined PrEP, some of whom said they were visiting the health facility for the first time or had not consulted one in decades.

> I never come to the clinic myself. The last time I was here was when I was young, and I don't normally catch any flu. I don't know what can be done exactly. For the ones with HIV, they go to the hospital more often and can be taught about PrEP, they are the ones who can then tell their partners or peers about it. (MSW declining PrEP, 37 yrs)

While VCT was generally regarded difficult for men for masculinity and stigma reasons and therefore complicated men's uptake of PrEP, self-testing, i.e. testing privately and in one's

own time with one's own test-kit might have been a male-friendly alternative. Self-testing was, however, not raised by MSW engaged with PrEP and suggested by only one PrEP stakeholder as benefitting MSW as men "don't come to facilities" (male stakeholder, 32 yrs).

Yet despite offering testing and PrEP in health facilities, MSW on PrEP, as we have seen, did not find the use of health facilities a major obstacle, nor asking for PrEP explicitly. "It's just like, even if the pills were HIV pills, it's not embarrassing because it is my life, it's not the next person's, even if they'd laugh or do whatever, it doesn't help them, it helps me" (MSW continuing PrEP, 34 yrs). While this view was mainly portrayed by men above 34 years of age, a younger man on PrEP also talked about not feeling embarrassed, yet the answers did not seem as forthcoming and were prompted.

I: And then can you tell me about how you feel when you come to the facility to ask for your PrEP meds?
R: Mhhh... (silence)... I feel normal, yeah.
I: Oh okay, so there's no sense of embarrassment?
R: Yeah, no.
I: Nothing?
R: Uhuh. (MSW continuing PrEP, 25 yrs)

PrEP providers tried to counteract stigma for PrEP clients by offering it in different departments in the facility (3.2.5.2), yet one PrEP provider saw the stigma of being seen to visit a health facility on a regular basis as a reason for clients to give up PrEP.

> You know some people they feel like going to the clinic and taking pills every time, they will think that you are now taking ART. I think that's where the stigma is. As time goes by, this client who has initiated will end up not taking PrEP. (male PrEP provider, 34 yrs-1)

Other forms of service delivery such as mobile clinics as suggested by a MSW in his late 20s could also lead to stigma in being seen by others. Asked about it, his answer also showed an independent attitude: "It depends on the people, some people are strong headed, we cannot be the same. A person would just have to face me directly and I will not have a problem" (MSW continuing PrEP, 27 yrs).

Anticipated stigma and dominant masculinity notions of being strong, not needing health services, perceiving facilities for women rather than men ran counter to offering PrEP for MSW at health facilities. However, the narratives of MSW on PrEP showed that they had voluntarily taken up PrEP and saw the personal benefits of being protected outweighing the inconvenience of visiting a health facility. Some MSW were unswayed by other people's views and lived their life independently of societal expectations. A few PrEP providers even spoke of the benefit of offering PrEP at health facilities as increasing "male involvement" and "youth involvement in health issues" (male PrEP provider, 41 yrs). However, with less than 30% of PrEP clients being male (3.2.1.), quantitative data did not support the view that PrEP service delivery through health facilities was the best way to reach MSW.

3.2.5.6. Opportunities for improved uptake of PrEP by men

The ideas of interviewees across respondent groups for improving education and counselling about PrEP and service delivery were shaped by the knowledge and/or experience of facility-based PrEP (and ART) as well as community-based prevention and ART services. Participants acknowledged the difficulty to educate men on the services through clinics alone as men's use of clinics was limited as pointed out in previous sections. For men who visited clinics, PrEP providers suggested having more health talks during the day rather than just early in the morning, showing the PrEP video in the waiting area throughout the day and practicing on-going counselling on PrEP. PrEP providers also made efforts to reach men through their female partners. All sub-groups of respondents suggested to go beyond the health clinics in informing people about PrEP; "the information about the pill is only available when you come here to the clinic, so what about those who never set their feet here, how they will get to know about it?" (MSW starting PrEP, 20 yrs). With little PrEP information reaching communities, people outside facilities were regarded as "completely clueless about PrEP" (MSW declining PrEP, 34 yrs).

Suggested approaches for educating men and the general population about PrEP and distributing information material ranged from using the media – particularly radio – to sensitizing men at various community locations: community gatherings at the inner council or chief's place, meetings at the dam or plunge dips for animal herders, educating men at soccer or sports events, conducting home visits, targeting bars or drinking places, bus-ranks, schools, workplaces, shops or churches (Berner-Rodoreda et al., 2020c). Community gatherings were mentioned by all respondent groups. Particularly communal leaders but also men on PrEP and PrEP providers viewed the offering of food and refreshments at the gatherings as a useful strategy to attract men; a PrEP provider described a previous successful health campaign for men: "We were inviting people and cook(ed) meat; sometimes we bought a cow's head and then invited all men so most men were attracted by the meat so by that we were able to provide them with health services" (male PrEP provider, 34 yrs-1). Men in the community and communal leaders also talked about the importance of receiving awards or gifts such as T-shirts or soccer boots as an incentive for men.

While many men on PrEP were in favor of reaching out to the community, they were not always explicit who should do the task – some felt it should be health officers or trained people in the community, others saw the government or health clinics as educators or did not specify who should reach out. PrEP providers viewed outreach as their job in conjunction with rural health motivators and local or international NGOs or equipping pastors and teachers for community outreach; peer education was generally viewed as a promising approach for reaching men.

> If you get the message from a messenger you trust or listen to – chances are that they would take that intervention or advice. Most are top down, we are the experts. But being the experts doesn't mean we have power over people. In a way mass media gets message to people, but now you need messengers from within the community who speak the same language. (male stakeholder, 32 yrs)

MSW on PrEP and stakeholders suggested the use of PrEP champions or PrEP ambassadors to motivate school or university students, a communal leader saw chiefs also in that role. "The point I am making here is that they [chiefs] must be exemplary like they must be the ones going to the clinics, testing for HIV and then educate other men on the importance of getting tested for HIV" (male local leader, 71 yrs).

It was mostly stakeholders and PrEP providers who suggested the type of information that should be conveyed to men and youth: the effectiveness of PrEP and its recommended combination with other prevention and family planning methods, particularly condoms, the possibility of alcohol consumption, the difference to ART and specifying who PrEP is for and for how long it needs to be taken before it is effective. The fact that PrEP is free of charge and that the pills should not be shared with others was also viewed as important information. An MSW starting PrEP felt that PrEP as a tool for serodiscordant couples wanting to have a child without risking a seroconversion of the HIV-negative partner would also be an important message to convey.

Stakeholders proposed additional approaches to reach men: sending SMS messages or using social media for the youth, and having a toll-free number to receive additional information for older men. Suggestions from community men included printing playing cards with PrEP messages to reach youth. Young men who had started PrEP volunteered the idea to brand cars to make PrEP known and to educate parents about PrEP so that they would pass on PrEP information to the youth.

While some MSW on PrEP thought that informing men would help them overcome obstacles of taking up PrEP, "people have to be informed because an informed person cannot be afraid to come to the hospital. They will not be afraid to start PrEP" (MSW starting PrEP, no age given), others were more skeptical about what education about PrEP could achieve in men: "others will accept it while you are together, and then afterwards they say, "these people are crazy. I am not going there [to the hospital]"" (MSW accepting PrEP, 33 yrs). While many respondents stressed the need to involve communities in the teaching about PrEP, there was not a one size fits all-approach. Some stakeholders also spoke of not planning for people but with them, taking their views on board in how the PrEP program should be fleshed out in order to be successful and reach the right people. MSW's own ideas for expanding and advancing PrEP service delivery in order to attract more men ranged from improving existing services at clinics and hospitals to offering services outside of health facilities.

A preference for continuing clinic-based PrEP services was mostly voiced by communal leaders based on the rationale that this would ensure quality for the services provided. “It is important that we get them from the clinic because we do not want to end up giving them to hands that are not educated” (male local leader, 49 yrs). MSW on PrEP felt that clinic services could be improved further in terms of a separation of PrEP and ART services with having a different queue, room or department for PrEP as this would shorten the time spent at the facility and prevent MSW on PrEP from being confused with PLHIV. This point was also raised by stakeholders and PrEP providers who thought that mixing people would lead PrEP clients to experience stigma. Some PrEP providers also favored staff just focusing on PrEP. While some men on PrEP thought monitoring calls from the facility would be helpful in being reminded of taking the pills or of one’s appointment days, some PrEP providers found that phone numbers did not work or people had given a wrong number or the facility did not provide enough airtime for following up clients. Further ideas by PrEP providers were to introduce treatment supporters analogous to ART to remind clients of taking the pills and honoring appointments and a toll-free number for people to get advice or talk about their problems with PrEP:

> Some people feel like they’re not being given the kind of attention they would like to have about their problems and concerns. So, if there would be someone who would be there for them most of the time – where they don't have to come to a facility to access support. (male PrEP provider, 28 yrs)

PrEP providers also favored having their own lab equipment such as a mini-lab, which would speed up the PrEP initiation processes for clients. Male clients did not propose any physical changes to the facility, but wished for fast and more discreet services such as through the dispensary:

> I also think that the pills should also be placed at dispensary so that even if you are just here for treatment of something else you can get them, because you may find that someone will fear that people will say that they are also among the people that are sick if they enter here. Yet, if the nurse is just on the other side with the pills, yes, they can test me but it must not be a long process. Check me and then give me the pills if I am negative so that I can continue to live. It must just be like the condom because the condom you can get it. (MSW discontinuing PrEP, 28 yrs)

The description “male-friendly” was only used by one female stakeholder, yet many of the “ingredients” of male-friendly services were primarily mentioned by local leaders, stakeholders, PrEP providers and men in FGDs. These included male-only clinics or having male personnel: “it could be proper that even in the clinics, we have male health providers to cater for the needs of men, cos it is so discomforting to be attended to by a female health provider when you’re male” (man in FGD, 37 yrs). To offer integrated services was another suggestion:

> Let’s talk to them about other health packages, not just HIV. We want to look at your blood sugar and when you're looking at their blood sugar offer them a HIV test, offer them PrEP, don't just talk to them about HIV only because men will think I'm not coming to do HIV test

> but include other packages and then strong men can come to the facility. (male stakeholder, no age given-3)

Respectful treatment of men and longer opening hours were additionally mentioned. These suggestions were made primarily by local leaders, stakeholders, PrEP providers and men in FGDs.

> We should be flexible because most males want to come on weekends so we should allow that because on weekends we focus on the sick people only, we have recently talked about it. People do come on weekends but you find that there is one nurse then we came with a solution to test the people because we can do that. Let us not deny them the service. it does not matter that the HTS is not here on weekends because as nurses we can do it. (female PrEP service provider, 35 yrs)

MSW on PrEP expressed the desire to reduce the frequent visits and transport costs to collect PrEP either by getting the facility to arrange transport or receiving longer PrEP supplies. Their dominant expectation was to have a pill or injection that could be used event-driven or less frequently "that I take PrEP once a week or a month or maybe a year if government allows that to happen because drinking pills everyday sometime is challenging as you have to remember every day to do so" (MSW continuing PrEP, no age given). Some expressed the wish for the pill to be packaged differently so that it could be easily distinguished from ARVs and not make any noise; some thought it should be like a sprinkle rather than a pill and a variety of PrEP pills could be offered "so just in case one is allergic to one type, they then give them the other type" (MSW starting PrEP, 20 yrs). A PrEP provider pointed out that the PrEP pills changed and that the former were preferable for avoiding stigma.

> There was this pill that was orange and black, I think that we used to give them, I think at that time there were many people who had it who came to get PrEP but now that we are using PrEP that is like ART there are now a few people who take it because they are afraid of the stigma that people will say they are now on ART... I think if that pill could come back it would be okay. (male PrEP provider, 34 yrs-2)

Others MSW saw the need for additional functions of the pill – either contraceptive, preventing other illnesses or giving more energy or libido to the person using it. "I think what could be done is that maybe they could add something to the pill so that the body wants to have sex just like if you are taking traditional medicine" (MSW discontinuing PrEP, 41 yrs).

MSW on PrEP perceived advantages of decentralization in terms of all clinics offering PrEP as saving time and money, "because if I can say, PrEP must provide transport I am not sure they would be able to" (MSW continuing PrEP, 27 yrs). Another argument for offering PrEP in clinics around the country was the workload of healthcare workers leading to extended waiting periods. "When you look in these clinics you see they already have problems. They already have no people to do the jobs. And you will add more. People will run away from this PrEP because these clinics are not enough" (MSW continuing PrEP, no age given).

Yet, across respondent groups, men's use of health facilities was viewed as sub-optimal. "We have to continue begging them to go to the health facilities or we go to them

because these are very difficult people" (female PrEP provider, 35 yrs-1). Men in FGDs appreciated existing HIV mobile services; some stakeholders and MSW on PrEP thought these could be used for PrEP as well. "When it's expanded (to) mobile clinics, say, we are coming to this site talk to people, test them. Maybe it might work because people don't want to go to the clinic to be seen at the clinic" (male stakeholder, no age given, 3). Other ideas raised by men who engaged with PrEP as well as PrEP providers, stakeholders and local leaders were to deliver PrEP at workplaces, bars and shops, "like placing (it) in strategic places where most people frequent like in shops – just like what is done with condoms" (MSW discontinuing 40 yrs). Others favored delivery through schools, local councilors or the chief's place: "bring the drugs close by to the people for example at the *umphakatsi (administrative sub-division)*, ask from the chief for such, and then people would be told to come close by" (MSW continuing PrEP, 26 yrs). Some men preferred PrEP delivery to their homestead - either at regular intervals or on call:

> I am not sure if it can be possible either for the ministry or the clinic to provide a vehicle that will be doing door-to-door PrEP deliveries for us who need to do refills. This can be done maybe every after 30 days or maybe when I call that I need a refill, they come. (MSW discontinuing PrEP, 40 yrs)

The convenience of one's own home was also talked about by stakeholders and communal leaders in contrast to the inconvenience of the PrEP initiation process, "…taking my time and my blood… I'm more likely not to do it. I wouldn't mind if there were to be able to come under my tree" (male stakeholder, no age given-4). A local leader suggested using rural health motivators to offer PrEP door-to-door, another communal leader shared how he helps young men access condoms at his house thereby depicting another delivery form – at a local leader's homestead:

> they [young men] come and say they have their partner over…, they ask for the condoms. Most of them say they are embarrassed to take them from the shops where they are usually placed. Unlike at my place where they come whenever, even at night you just hear a knock at the door (male local leader, 35 yrs-1)

Irrespective of clinic-based or community-based delivery of PrEP, issues of convenience, saving on transport costs and time, inconspicuous services with non-exposure to other people who could perceive one to be HIV-positive or promiscuous played a major role and consideration for MSW and for local leaders and men in FGDs.

3.2.5.7. Synopsis of Facilitators and Barriers at health facility level

The following facilitators and barriers at health facility level emerged from the data in Eswatini, see *table 23*.

Table 23 MSW's facilitators and barriers for PrEP uptake and retention at health facility level

Facilitators	Barriers
Offering alternative forms of testing such as self-testing	Facility-based VCT and PrEP
Seeing effectiveness of PrEP through regular HIV-testing	
Written and anonymous risk assessment	Exposed site of facility
Separate PrEP service	Offering PrEP and ART services together
Friendly, flexible staff	Rude staff
Fast service	Lengthy process (mentioned by outsiders)
Ability to stop and start PrEP	Regular visits conflicting with work
Longer acting agents and pills with additional functions (arousal, contraceptive, preventing other STIs)	Not wanting to be seen at health facility or to be mistaken for PLHIV (rattling pills)
PrEP service provision in all clinics in country	Transport and frequent visits clashing with work commitments
Education in and outside of facilities	Facility education does not reach enough men
Service Delivery in community and door-to-door or locations where men feel comfortable	Poor services
Incentives for MSW	
Longer supplies	

3.2.6. PrEP and societal considerations

Societal beliefs and views on HIV, PrEP, and expected behavior of men as well as government policies and their implementation impacted on MSW and their use of PrEP. In this sub-chapter I will examine community views of HIV and PrEP including stigma, gender and masculinity considerations and the role of and expectations towards Government with regard to PrEP.

3.2.6.1. Community views of HIV and PrEP

While PrEP was offered in rural and semi-urban areas and focus-group discussions took place in urban areas, the different locations showed no marked difference in community perceptions of HIV and PrEP. The view of HIV as closely associated with promiscuity, prostitution and death was raised by local leaders.

> They [people] think all those people who get tested are promiscuous or those who don't take care of their lives. When HIV came in this country it was like you get it by being a loose person or by being a prostitute. And, you know, in this country people were frowning upon prostitutes so it was like you are having sex with prostitutes that is why you are having HIV so that is how it became an embarrassment. (male local leader, 71 yrs)

A negative perception of HIV emerged as a more salient theme than the perception of HIV as a chronic infection, but some representatives of all respondent groups bar male decision makers living with HIV, perceived less stigma than in the past; for some, HIV had seized to be stigmatized. "For me, HIV is similar to every other illness" (MSW declining PrEP, 27 yrs). Some men in FGDs and some female stakeholders talked about HIV losing its scariness because of ART; older men were said to prefer HIV to other diseases, "they usually say, "ey being positive

is better because you can still live a healthy life but it's not the case with diabetes because it causes erectile dysfunction"" (man in FGD, 20 yrs) thus showing that other factors and masculine considerations were weighed against the drawback of being HIV-positive.

In FGDs and among local leaders in the community, younger and older men felt that people in the community would withdraw from an HIV-positive person. "Once you reveal that you are HIV-positive, the way people look at you changes. People suddenly develop an attitude towards you" (man in FGD, 20 yrs). Community stigma would make people visit far away facilities as pointed out by female PrEP providers and stakeholders yet whether people in rural areas were viewed to attach more or less stigma to HIV than people in urban areas was inconclusive in respondent statements. Different communities may have been described or the individuals held different perspectives.

In-group variation highlighting the range of opinion in one respondent group is shown in the statements of local leaders spanning from stigma being seen as a non-issue through working to overcome lingering stigma in the communities to harboring own stigmatizing attitudes:

> For me when I was younger and we would meet up and drink alcohol, you would hear one of them saying that it is time to take their pills while we are all still together. (male local leader, 39 yrs)
>
> Another challenge we have is that HIV came as that virus that you catch by being promiscuous… and it's not easy for people to accept when they go to the clinic and test HIV-positive. (male local leader, 71 yrs)
>
> The HIV negative partner who has upheld good moral behavior… am not saying that the ones who are HIV-positive are promiscuous because there are many ways one can contract HIV…this partner can then move on and find a new partner that he/she will also take to the VCT until they find an HIV negative person to whom they can then get married to because a crocodile does not feed during winter, it only feeds during summer but you cannot bath in a crocodile infested river because you do not know when the crocodile will feed next. (male local leader, 66 yrs)

Age or residence of the local leader seemed to make little difference to their perception of HIV – both of the older local leaders came from urban areas, yet the 66-year-old compared PLHIV to a crocodile and thus a constant danger whereas the oldest local leader was trying to help people overcome internalized notions of guilt and shame and assist them in testing for HIV.

As PrEP had been introduced at selected health clinics in Eswatini from 2017 (see 2.2.1.), not all communities were familiar with PrEP, and community notions of PrEP portrayed by respondents were diverse: some saw PrEP as helpful and those taking it as responsible; it would make life easier for serodiscordant couples, it would protect the HIV-negative and those with many partners but anticipated critical community reactions to PrEP exceeded positive reactions. Overarching concerns were the confusion of PrEP and ART in communities as both were pills to be taken daily – this concern was voiced by men engaged with PrEP, men in FGDs,

PrEP providers and stakeholders and seen as hampering a PrEP roll-out and PrEP uptake. Being mistaken for a PLHIV was a particularly strong concern for MSW taking PrEP: "the people from rural areas do know that I take some pills but their conclusion is that I am living with HIV" (MSW continuing PrEP, 30 yrs) quoted in (Berner-Rodoreda et al., 2020c). Two community interpretations of PrEP were provided; the first would make PrEP futile: if one had to take the pills daily, one may as well wait until one had to take ART; the second highlighted the need of educating people on PrEP because of the tendency to confuse PrEP and ART.

> I think people are saying that it's too much like ART. You may as well just get HIV and take ART for the rest of your life versus taking PrEP for the rest of your life. (MSW continuing PrEP, no age given-2)

> Some people think these are ARVs. Well, in other words they are since they protect against HIV. So, most people think they are HIV related. People think if using them you are on ART. So, I think clear explanations to people would do. (MSW continuing PrEP, 39 yrs-1)

A male stakeholder, by contrast, highlighted the opposite effect: the danger of PrEP practice and usage (the ability to stop and start) spilling over to ART clients (Berner-Rodoreda et al., 2020c); he recounted losing his cousin who stopped taking ART, thus pointing to a marked difference between PrEP and ART – risk-based versus continuous medication. In order to clearly demarcate PrEP from ART, many respondents wished for less frequent PrEP intake as shown in 3.2.5.6..

Some MSW on PrEP, PrEP providers and stakeholders and local leaders depicted PrEP being seen by the communities as a "disgrace": a pill for those who were promiscuous, who did not want to use condoms or had an unfaithful partner. PrEP was also seen as making people promiscuous. MSW who took up PrEP were aware of communities not fully understanding what the PrEP pills were about, holding different and possibly negative perceptions of PrEP or misinterpreting their pill-taking as being on ART.

3.2.6.2. Gender crossing masculinity notions?

Masculinity ideals of being strong and virile coupled with men's health seeking and risky sexual behavior were depicted across respondent groups as exposing men to HIV and therefore in theory making men prime candidates for PrEP.

> You know the men I work with, every time they go out with the car they come back with a female. When you check the car there are no condoms. So, when the nurse told me about the pill I thought about them. (MSW starting PrEP, 34 yrs)

> We just have sex there and there, not protecting ourselves meaning we don't use condoms. We have so many partners especially men just to prove that we are real men calling ourselves *inganwa* [a man with many girlfriends] and also to boost our egos. (male local leader, 71 yrs)

Yet, having multiple partners was not restricted to MSW as some PrEP providers, stakeholders and community leaders pointed out. While more emphasis was laid on men, women could

display similar behavior. “Women cheat most of the time; people don't realize it” (male stakeholder, no age given, 3).

> A partner can ask me to be faithful while he’s not or maybe he is the one who is faithful and I’m not… I’m using myself as an example because we also do these things… accusing a partner of being unfaithful while I have multiple sexual partners myself. (female PrEP provider, 31 yrs-2)

Some therefore felt that what is often perceived as a typical masculinity trait - having multiple sexual partners - may not be a distinctive masculine feature.

While the dominant perception was of men engaging with various sexual partners and as we have seen, some believed that some women displayed similar behavior, there was no clear trend in respondents’ opinions whether PrEP should mainly be offered to men or to women. Men directly engaged with PrEP, PrEP providers, stakeholders and local leaders viewed both men and women as important target groups for PrEP; participants in FGDs felt more strongly that PrEP was for men whereas decision-makers thought that women would benefit more as other prevention strategies would be more difficult for them.

PrEP could intensify an already negative image of men in terms of HIV and sexual behavior by underscoring promiscuity. “Men have this thing whereby when they go and learn [about PrEP] they will be seen as someone that wants to be promiscuous” (male local leader, 49 yrs).

> We have the most blame; if you are talking about abusers it’s the males, if you are talking about people who spread HIV, it’s the males again whereas women also do these things a lot, so you see for example if you keep on accusing a child of doing bad things, the child will end up doing those things even worse so I don’t know how we can get to a level where we can teach men without necessarily blaming them… men are not being empowered, they are only being blamed. (male local leader, 41 yrs)

Labelling men as promiscuous and seeing the PrEP pill as being for those with multiple partners was felt by these local leaders as making it harder for men to benefit from PrEP with a man declining PrEP exactly for this reason and another feeling stereotyped as a MSW (see 3.2.4.1). “Not all of us men are womanizers, but the general assumption is that we are” (man in FGD, 21 yrs).

General masculine ideals such as multiple partners, virility, inconsistent use of condoms all called for an effective HIV prevention method such as PrEP, yet would at the same time define men solely in terms of their sexual behavior. MSW, on the other hand, also talked about being scared of HIV, being responsible and caring for the family as reasons for taking up PrEP (see 3.3.1. and 3.3.2) and were also seen as such by female PrEP providers, some members of the community and men on ART: “Men feel like they have to protect their wives and children even if they have mistresses” (female PrEP provider, 33 yrs). “People’s opinions are different; some think that you only initiate because you are a loose person. Although there are those who feel like initiating on PrEP means that you are responsible” (MSW continuing

PrEP, 30 yrs). While PrEP could enhance a sexualized image of men, other attributes (responsibility, caring for others, supporting the partner/family) counteracted this.

In terms of men's health seeking behavior, decision-makers and some female stakeholders and female PrEP providers emphasized a general fear of HIV by MSW to test: "Men are afraid of HIV. I am not sure if it is the HIV or the thought of taking ARVs but they fear HIV" (female PrEP provider, 29 yrs-2). While we saw in 3.2.3.2 that the fear of HIV could translate into an incentive to test for individual MSW, masculine community perceptions of health and strength were seen to counteract MSW's willingness to test as the reluctance was related to a fear of testing positive for HIV: "males are scared... Some don't want to know their status. They don't want to check" (male local leader, 35 yrs-1). Only with a severely compromised health condition would men be willing to consider VCT:

> Up until the person [man] gets sick, then they realize that it is serious; now they are headed for death, then they go. But it is not at all easy to just go there when they are not sick… to go and get tested, it is not at all easy to do. (male local leader, 49 yrs)

A further obstacle for men to test was seen in lowering their standing in society – "it is the status that I was talking about where you think that now you are reducing who you are" (male local leader, 63 yrs). Masculinity notions of strength and societal reputation combined with stigma were depicted to play a role in men's testing hesitancy, as notions of promiscuity lingered in people's understanding of HIV.

An additional constraint in reaching men and improving or maintaining their health was linked to MSW's infrequent visits to health facilities and a perceived preference for men to consult traditional healers:

> Our culture kills us because it tells us that when we are sick we must seek help from traditional healers. So, the belief that once they are sick they need to sell their cows and go to the traditional healer or that they are being bewitched. So, this notion impacts negatively on us as Swazis because the belief of witchcraft is a lot yet now there is no witchcraft but you just need to go to the hospital. Now only the hospital can help. (male local leader, 39 years)

While local leaders held a critical view of traditional healers, male PrEP providers and stakeholders perceived the need gain deeper insights into MSW's health service preferences.

> We need to understand why men won't want anything that is clinical, what is going on with that... A question around traditional medicines, western medicines and stuff like that would probably help in understanding how to package things. (male stakeholder, no age given-4)

Men directly engaged with PrEP mentioned consulting a traditional healer for fertility or erectile problems: "I have my own concoction which boosts my sex drive that I drink which I got from one traditional healer from around my area" (MSW discontinuing PrEP, 40 yrs). A stakeholder remarked that the service that men received at a healer's was more comprehensive, more discreet and flexible timewise than in the health facility where clients would be rushed through.

> They [MSW] do not mind at all to go to a traditional healer…Healer is open almost 24 hours a day. You can go to him at 9pm, he'll see you. And nobody is going to judge you. You can go

> for sexual problems, a curse, a witchcraft related illness, counselling. Traditional healers are like counsellors. There will be a queue of 30 people waiting to see a doctor, and you can't just talk with the doctor about erectile disfunction, my wife is mad at me, she has no time or interest, I have pre-ejaculation. The healer talks to you like the way I understand it. (male stakeholder, 32 yrs)

Visiting a traditional healer was thus depicted as overcoming a low threshold hurdle and promised to be a holistic treatment experience where one would be taken seriously whereas visiting a clinic meant overcoming a high threshold hurdle, particularly for problems with one's "private parts", with health personnel's gender and age potentially exacerbating the problem of men's health seeking.

> So, men act as if they do not get sick yet they are sick too, as it is now men are dying of prostate cancer. Most men go to the hospital when they are already at a critical stage so this braving through sickness is what affects men…men cannot take care of their health because some of the sicknesses that we have are on the private parts… and there at the hospitals we come across our children and it is embarrassing to have these children handling your private parts. (male local leader, 66 yrs)

Women, by contrast, were described by outsider respondent groups as taking better care of their own health and the health of the children, having role-models, being better informed through their frequent facility visits; the male partner was depicted as supportive but not visiting the clinic himself.

> In my community people who used to visit the clinic was the female. If a child is sick, the mother takes the child to hospital. The father will give the mother money to take the children to the hospital if it happens that the need arises. They don't think of themselves as getting sick. (man in FGD, 34 yrs)

While some pointed out marked differences between men and women and their behavior, others felt that this existed in terms of health-seeking behavior yet less so in terms of sexual relationships and that the blaming of men was counterproductive to educating and motivating men to take PrEP. Instead, one should appeal to male values in terms of responsibility in approaching men about PrEP.

> One of the key things around Swaziland is values and traditions so there should be a way in which you communicate PrEP to men for them to understand from a value perspective. Or if you take such and such you will have more time to look after your family to be a provider, to be the man that you want to be, to be prosperous. That is sort of the positioning towards Swazi men which they value the most. (male stakeholder, no age given-4)

3.2.6.3. HIV and PrEP in the context of culture and Christianity

A further challenge of reaching and educating men about PrEP was seen in the Christian and cultural context of Eswatini. From respondents' descriptions, a nuanced picture emerged with regard to both. While some local leaders occupied church functions and perceived no difficulties in talking about HIV in a church context (even if they had reservations about people of differing serostatus marrying), others highlighted double standards of church goers which rendered prevention difficult.

> It is believed that the people there are righteous and healthy so there is no need to talk about it [HIV], yet it can also be found there… we share partners, so you may not know the status of your partner. (male local leader, 41 yrs)

Churches were regarded as influential for both women and men and a dialogue with them essential for MSW's improved uptake of PrEP. "A lot of people go to church so we need to sensitize. If we don't sensitize them, we won't get buy-in. People must know what is going on, they must be well informed" (male stakeholder, 57 yrs).

Both in the cultural context in general and in a church context, respect towards elders played an important role and made it easier to target young men or people the same age than older men; younger local leaders perceived the difficulty of speaking to older people or teaching them about HIV and prevention as it entailed talking about sexuality, which would be regarded as inappropriate, "the person would definitely not listen to me because I am younger than them" (male local leader, 29 yrs).

> It's difficult to speak to the whole congregation, so as the youth we can speak in detail about such issues… You have to talk about sex, and the elders will take it as disrespect especially in church. (male local leader, 33 yrs)

Local leaders regarded mixing people of different ages and gender as difficult for freely discussing sexual issues in- and outside a church context.

> It is that we have different age classes in the meetings where we have men and women and you find that there is respect and just shyness about talking about these issues openly in front of children. Sometimes it is our own children or mothers-in-law (laughs) so it is being shy more than anything. (male local leader, 61 yrs)

Talking about sexual relations would further imply looseness of morals. "In terms of our culture it is very strict when it comes to that, yet this is what is killing us the most" (male local leader, 49 yrs).

Opinions differed on socio-cultural practices such as polygamy. Some PrEP providers and a local leader considered polygamy as an additional risk factor for all marriage partners:

> …even if we can look at those in wedlock, they are also as problematic as those that are outside of wedlock because there is the culture of polygamy because it is the nature of Swazis to date, so dating and being promiscuous is the same as I look at it in term of transmission of infections is concerned. (male PrEP provider, 36 yrs)

A female stakeholder, by contrast, viewed polygamy as a "circle of trust" and less risky than having many concurrent relationships outside marriage.

> The issue on polygamy - it isn't necessarily promiscuity. It's an agreement. Like my husband comes home and says, "let's think about X as a next wife" And then the family agrees and then people agree and meet, and it seems cool and we could be sister wives and then the 3 of us agree that we are in the circle of trust. But that's different from a man who has a girlfriend and has another and another. (female stakeholder, 36 yrs)

Some cultural practices such as *kungenana* (the levirate – the widow being married off to the deceased husband's brother) were regarded as problematic and in need of reform in times of HIV – "this custom you would not know what the brother died from. So, all of that we are trying to prevent HIV from spreading… we are able to talk about it in detail" (male local leader,

63 yrs). Conversely, other cultural practices were viewed as protecting people; a local leader viewed abandoning customs as exposing young men to an HIV infection.

> In the past our culture ensured the protection of the community. The process was: a girl would be wooed by a young man, and he will then take her to his home and depending on whether she is liked or accepted at his home then she will be customarily married in a process called *kuteka;* that young man has a wife and continues to stay in the homestead in the watchful eye of the elders. However nowadays with the existence of rights, when a young man gets himself a girlfriend there is no more cultural guidance in customary marriage and retention of young and newlyweds in the maternal homestead. Once a young man is grown up, he will leave his maternal homestead and go to rent an apartment where he will become the head of the household and do as he pleases having several sexual partners and eventually getting infected with HIV. (male local leader, 66 yrs)

Local leaders further described cultural festivals such as the *Buganu* or Marula Festival celebrating the marula harvest and marula-beer as increasing risk situations for men – "they are saying that the marula makes them to get an appetite to desire women" (male local leader, 49 yrs). Drinking alcohol and having unprotected sex with no information about HIV being given at the festival was seen as heightening men's risks not just by local leaders. "So, I think in Swaziland we are still far from preventing new infections when there are these mass events. Right now, the Bush Fire (music festival) is coming up, ah it will be difficult" (male PrEP provider, 34 yrs-2).

While cultural practices were predominantly seen as increasing risk situations for men, the cultural and religious context underscored the need for different approaches to reach younger and older men. A separation of young and old, men and women for PrEP education was seen as one solution:

> So, separating the groups could help because when men are alone they tend to be free and when women are alone they tend to do the same. Also separate the youth and then also separate the men because there are those who are *butseka* men [initiated as men or warriors] and those that are pastors so get them when they are alone. I think splitting the people like that then there is a lot that you can benefit. (male local leader, 61 yrs)

3.2.6.4. Could indigenizing PrEP be a facilitator for MSW?

The term "PrEP" was felt by some male stakeholders and PrEP providers as difficult to understand. "I also think maybe you can use a siSwati name for the pill because some clients are not educated plus the name is just too technical for clients" (male PrEP provider, 35 yrs). Suggestions made by mostly young MSW starting PrEP and MSW in FGDs referred partly to warrior notions in line with the national symbol of the shield which was also used on the PrEP material disseminated. Other notions of "protecting", "helping", "life-saving", even "stimulating the economy" and giving "power to the people" were also suggested showing different notions that men attached to the pill – from an autonomous decision (power to the people) to being assisted (helper) to full protection (shield; life-saving pill), see *table 24*.

Table 24 siSwati names for PrEP

siSwati name for PrEP	English translation by transcriber	Respondent
Mancoba	Conqueror	Man in FGD, 26 yrs
Lihawu	Shield	Man in FGD, 38 yrs
Lihawu lami	My shield	MSW starting PrEP, 34 yrs
Emandla ngewetfu	Power to the people	MSW starting PrEP, no age
Sincoba ligciwane	We overcome the virus	MSW starting PrEP, 27 yrs
Sivikela ligciwane	We protect against the virus	
Umvikeli	Protector	MSW starting PrEP, 20 yrs
Umsiti	Helper	
Liphilisi lemphilo	Life-saving pill	MSW starting PrEP, 25 yrs
Lungiselela	Prepare	MSW starting PrEP, 21 yrs
Vusa umnotfo	Stimulate the economy	MSW deferring PrEP, 30 yrs

While terms such as "helper" or "prepare" imply that one may need more than this tool to be safe, names and expressions such as "shield", "my shield", "conqueror", "we overcome the virus" express masculine notions of victory in battle. These terms together with "life-saving pill" suggest that PrEP on its own is a very effective tool against the virus.

A siSwati term with masculine and cultural significance was viewed as potentially improving MSW's acceptability of the product, but some stakeholders and PrEP providers warned against using terms which had given MSW a wrong sense of security in the national circumcision campaign "Soka Uncobe" [Circumcise and Conquer].

> We saw this with the VMMC [voluntary medical male circumcision]. People threw away their condoms. They got all of these STIs and said, "no, no, it's fine! I'm circumcised"... If you have conquered, do you need other weapons? I don't think so. We need to change the theme. That theme contributed to our downfall. We are saying, you have to use it with others. You can't just stop using condoms. (male stakeholder, 47 yrs)

Stakeholders, PrEP providers and local leaders also warned against PrEP being introduced as a "magic bullet" (male stakeholder, no age given, 5) and as competition to the condom as the sole use of PrEP could lead to an increase of STIs and pregnancies.

A PrEP provider felt that rather than giving PrEP an ad hoc siSwati name, this should be a deliberate process which would ensure that the name conveys the right message.

> It needs a meeting because it needs to be a recognized translation which means all standards and stakeholders will have to agree to… So, I think we need to give it a name that will be appealing to the public, at the same time conclusively giving an interpretation of what we are talking about. (male PrEP provider, 36 yrs)

3.2.6.5. PrEP – a game-changer for reducing HIV infections across different ages?

Local leaders, stakeholders, PrEP providers and a few men directly engaged with PrEP viewed the wider PrEP benefits for Eswatini in potentially reducing new infections and incidence; some aligned PrEP with King Mswati's vision for 2022 "of no more new HIV infections" (female PrEP provider, 25 yrs-3) or the UNAIDS targets for 2020 "of zero new infections, so I think with this PrEP we have a chance of achieving this goal" (male local leader, 41 yrs).

> We hope that it's also going to help us reduce the incidence rate. We'd like to end this epidemic and this is one strategy that will contribute immensely. It's not a panacea, but it is a contributory measure. (male stakeholder, 50 yrs)

Some also viewed PrEP benefitting the country and community in developmental and economic terms by having to spend fewer resources on HIV and health – "fewer positive people means less money spent on health, health programs" (male stakeholder, no age given-3) – and by having a strong and healthy workforce. "People can live a long life and our community can develop especially now because we need young people… they can help the community develop and the economy to develop" (male local leader, 35 yrs).

Across respondent groups, youth and "all who are HIV-negative" were seen as the primary target groups for PrEP, especially by the female PrEP providers included in this study – some even spoke of achieving a HIV-free generation through the use of PrEP (female PrEP provider, 25 yrs-3). Unemployment and boredom were mentioned as vulnerability factors for youth. "I don't know; it's not easy in the villages. That's the problem. People are bored, they have a lot of sex, and that is why PrEP is good" (MSW continuing PrEP, no age given-2). The desire to gain money or social standing was seen as making young boys enter sugar-mummy relationships and enhancing their risks.

> Most of the time these boys tell themselves that life is in money and more often the money comes from older women who have money. You find that these women have lost their husbands. (male local leader, 35 yrs)

While PrEP was offered from the age of 16, many felt that it should be made available to younger teenagers as they were already sexually active. Some advocated to offer PrEP to primary school children, others felt that 12 or 13 years would be an ideal starting age.

> I am more interested in the youth, there are these adolescents that have been left out, the children from 10 – 15 years which are the most problematic of all. And they are the most active which means if the age restriction could be lowered on when you have to access PrEP, at least maybe it could start at 12 years with the HIV testing. (female PrEP provider, 29 yrs-2)

> Teenagers! who are probably between the ages of 13-19… they are very promiscuous, they engage in all sorts of risky sexual practices all in the name of experimenting. This is one crazy stage in one's life. (MSW starting PrEP, 20 yrs).

Yet, other PrEP providers and local leaders expressed concerns about those younger than 16 being inconsistent with pill-taking or not understanding the significance of PrEP. Some also feared that it would encourage young people "to indulge in sexual intercourse" (male local leader, 66 yrs).

Views on older men as a target group varied – they were mostly seen as not a prime target group because their risk of HIV and interest in PrEP was assumed to be low. A MSW on PrEP considered men above 40 years difficult to enthuse for PrEP as they had decided on their life-style.

> I'll make an example with my age mates, they tell themselves they are grown. They wouldn't find reasons to take PrEP and they are used to their wives. You see the people aged 40-45

> years, those people nowadays are grown, so their thinking does not really care about things. (MSW continuing PrEP, 39 yrs-1)

The perception that older men are settled and perhaps less interested in new interventions would call for new approaches. Male PrEP providers in their 30s saw MSW above 45 as either faithful or not sexually active. “I think there isn’t much promiscuity as compared to the younger age group hence I see it right not to offer PrEP to the old age group” (male PrEP provider, 33 yrs-2). Others held opposed views: a younger male PrEP provider argued for including older people because of their vulnerability to HIV shown by the fact that many of them lived with HIV, a stakeholder saw middle-aged to older men as a prime target group for PrEP as they tended to have relationships with young girls: “Men in their 40s in and 50s. Girls and adolescents and then go to the older men who are sexually active” (male stakeholder, 53 yrs).

The group that was mentioned across all respondent groups almost as often as youth and adolescents were all those “at substantial risk of getting HIV” (female PrEP provider, 58 yrs). “There must not be a limit that you are going to do it for one group and not for another group” (MSW discontinuing PrEP, 41 yrs). Not restricting it to specific groups such as key populations as had happened in other countries but making it available for all was also seen as a strategy to reduce stigma.

> If you market it as something “just for these people”, it creates stigma. The presentation just creates stigma because you categorized certain people. Let’s remove the boxes. Remove any information about particular types of people and just say all people. Or all negative people. (male stakeholder, 57 yrs)

PrEP was seen as a potential game-changer for reducing new infections – particularly if it was offered to all HIV-negative people who felt they would benefit from it, yet to what extent targeting a younger population meant that older men were not seen by PrEP providers in need of PrEP or were not captured adequately through facility-based service provision did not become clear. Quantitative data showed that men above 45 years made up approximately 10% of men undergoing risk assessment and 11% of men initiating PrEP.

3.2.6.6. PrEP Policy and Implementation

Based on the 2015 WHO recommendation for PrEP (World Health Organization, 2015b), the Ministry of Health in Eswatini decided to conduct a PrEP demonstration project for the general population at risk, but named particular risk groups such as young women, pregnant and lactating women, serodiscordant couples, female sex-workers, men having sex with men and clients with sexually transmitted infections as the prime target groups (Swaziland National Aids Programme, 2016) thus adapting and widening approaches by other countries which had focused on key populations for PrEP while still focusing on risk groups. The 5-year National and Multisectoral HIV and AIDS Strategic Framework 2018-2023 took preliminary results from

the demonstration project on board, noted low uptake by men and widened PrEP target groups to include adult men (NERCHA, 2018). In order to accelerate uptake, more collaboration with community actors and more awareness raising was decided upon (ibid). The clinical implementation guide published in May 2019 indicated PrEP for everyone who is HIV-negative and at substantial risk, yet restricted the male target group to those aged 30-34 years (Ministry of Health, Swaziland National AIDS Programme, Eswatini, 2019), i.e., the group that had shown the highest HIV incidence in a national HIV survey, SHIMS 1 (Justman et al., 2017). 26-35-year-olds constituted the most sizeable male group in the demonstration project to undergo risk assessments and take up PrEP followed by the 16-25-year-olds (see *table 17*), yet targeting only 30-34-year-old men may be unnecessarily restrictive and leave out younger men who due to their "sexual experimenting" may expose themselves to risks.

PrEP and alcohol consumption emerged as an unresolved policy and implementation issue. While the Eswatini PrEP guidelines (Swaziland National Aids Programme, 2016) and the PrEP implementation guide were silent on the issue of alcohol and PrEP (Ministry of Health, Swaziland National AIDS Programme, Eswatini, 2019), alcohol was mentioned as a risk situation for HIV globally indicating PrEP usage, but described as a challenge to ART adherence (World Health Organization, 2016). Conflicting messages between PrEP and ART and alcohol were seen as counterproductive and possibly leading people on ART to increase their alcohol consumption.

> I feel like we are contradicting ourselves. Previously we were saying if a person is taking pills, they should reduce alcohol consumption and eventually stop taking alcohol (female PrEP provider, 31 yrs-2)

> Of course, it is very difficult when they get mixed messages and people are very concerned if you can sort of like tell for PrEP then people will start drinking more, those who are on ARVs. (female stakeholder, no age given-5)

In addition to uncertainties about alcohol consumption, people across respondent groups were concerned about the sustainability of the PrEP program, increasing awareness about PrEP in the country and the implementation of PrEP nationally. The fear of disrupted supplies as occasionally experienced in the ART program was a concern in IDIs and FGDs.

> Please talk to the government about the drug shortages. I don't want to be told that there are no pills when I come for more. (MSW starting PrEP, 34 yrs)

> Also, I want to know what are the plans put in place by the Ministry of Health to make sure that the country never runs out of stock of these pills cause once this pill is introduced, a lot of people will be interested in it. (man in FGD, 26 yrs)

For stakeholders, this required improving procurement to minimize delays.

> Others [other countries] order earlier and pay earlier and then we are late to order and pay and there's the backlog. That's the challenge. And if our government could advice and make sure this is being strengthened, it wouldn't encounter this issue. (male stakeholder, 53 yrs)

In addition to long term supplies and a greater variety of PrEP pills (3.2.5.6.), men on PrEP expected the government to invest in PrEP education of the population through campaigns

and community outreaches as they felt that people did not know anything about PrEP and might confuse PrEP and ART. As these were often linked to outreach by facilities, they have been presented under 3.2.5.6.

Stakeholders and local leaders raised a number of policy and implementation issues for rolling out a successful PrEP program: the training of staff, particularly community health care workers, practicing task-shifting to counteract the increased workload of formally trained health staff, providing PrEP locally and collaborating with organizations to reach out to people as well as monitoring how PrEP is implemented in facilities with diverging opinions on creating separate PrEP services or integrating PrEP into existing health services. Further suggestions were to market the program so that people will know about it and take it up, basing a national PrEP program and PrEP policy on evidence established through the demonstration project, learning from the PrEP successes and failures of other countries, showing political commitment, having politicians publicly embrace the PrEP program and putting necessary structures in place.

Some MSW stipulated that the government should put equal emphasis on HIV-negative people as on HIV-positive people with a view that HIV-negative people should not seroconvert. “I am saying that those that are negative they must be followed up on to join the PrEP pills and treat them like those that are positive. They must be treated equally” (MSW discontinuing PrEP, 28 yrs). Offering HIV-testing at schools as proposed by some stakeholders or making testing mandatory in clinics as proposed by a local leader was seen in aiding both PrEP and ART programs. Some – men engaged with PrEP and a male PrEP provider – even suggested to enforce PrEP use by law. “I think this can be a law stipulated by the Ministry of Health that every person has to take PrEP and it should like it’s a choice but as a preventive measure in order to reduce chances of HIV” (male PrEP provider, 34 yrs-1). A man on PrEP went even further:

> Government must pass a law that every HIV negative person should start PrEP to lower stigma of those taking it so if it comes from high authorities many people will know more about it and there would be no stigma as many people say those taking PrEP it’s like they are taking ART pills then many people shy away from PrEP. (MSW starting PrEP, 41 yrs)

This demand for everyone having to take pills – either PrEP or ART depending on one’s HIV-status – was seen by the MSW who proposed it as a means to de-stigmatize pill-taking. A female PrEP provider, who did not suggest to make PrEP obligatory for HIV-negative people, saw PrEP as a catalyst for overcoming ART-related stigma: “it reduces the stigma that people who take pills are HIV-positive” (female PrEP provider, 24 yrs-3) thus expressing a benefit for everyone who has to take pills on a regular basis.

3.2.6.7. Synopsis of Facilitators and Barriers at Societal Level

The following facilitators and barriers at societal level emerged from the data in Eswatini.

Table 25 MSW's facilitators and barriers for PrEP uptake and retention at societal level

Facilitators	Barriers
MSW's virility ideals; "inganwa"	MSW's fear to test for HIV
Positive community views of PrEP (protection, good for serodiscordance, being responsible)	Negative community notions of PrEP (linked to promiscuity and infidelity, confusion with ART)
Openness by church functionaries to talk about prevention and PrEP	Church environment with infidelity and sexuality as taboo subjects
Reaching young men in churches	Cultural barriers in reaching older men.
Cultural and beer-drinking festivals as risk situations for men and alcohol not contraindicated for PrEP in guidelines	Little PrEP knowledge in communities
Separating gender and age groups for more targeted education on PrEP	Not understanding men's health seeking behavior and preferences
Indigenizing PrEP	MSW being blamed and seen as promiscuous
Desire to realize King Mswati's vision of reducing HIV infections and UNAIDS objectives	Older men not seen as important target group
Making PrEP obligatory for all HIV-negative people as a stigma-reducing strategy	Conflicting guidelines for alcohol (PrEP and ART) leading to confusion
Long term political commitment to PrEP	Concerns about sustainability of PrEP program

3.3. Overview of PrEP and ART facilitators and barriers for uptake and retention

The following table provides an overview of the PrEP and ART facilitators and barriers emerging from both studies. Same or similar issues for both PrEP and ART are highlighted in grey. The table shows substantial overlap among the facilitators at the intra-, interpersonal and service delivery level for MSW across the two studies as well as for facility- and community-based barriers. Facilitators at the societal level and barriers at the intra- and interpersonal level, by contrast, showed more variation between PrEP and ART, see *table 26*.

Table 26 Comparison of Facilitators and Barriers according to the socio-ecological model
Legend: green = facilitators; red = barriers; dark shaded = similarities identified from ART and PrEP studies

FACILITATORS	
ART	**Intrapersonal Level** **PrEP**
Desire to know HIV-status (men in community)	Personal risk perception and fear of HIV
Testing HIV-positive and having no other choice	Habit of testing for HIV regularly
Hope for improved health and strength on ART	Desire and determination to stay negative to realize the vision for one's life
Accepting status	Possibility to stop PrEP when problems occur
Positive experience on ART: weight gain, health restored, able to work	Seeing PrEP as the "Messiah" - preference for pill over other prevention methods
Personal strategies to remember ARVs	Hope for improved sexual performance
Positive and negative role models	
Able to combine alcohol with ART	Able to combine alcohol and PrEP
Understanding benefits of ART and VLS	Knowledge and understanding of PrEP
Interpersonal Level	
Being accompanied by a relative to test	Partner-facilitated (serodiscordant relationship, distrusting partner's fidelity or HIV status)
HIV and ART information sharing among friends	HIV and PrEP information through friends/family
	Opportunity for more sexual relations

Disclosure to trustworthy relatives and friends	Informing partner; expecting positive reaction.
Testing with friends (peer pressure)	Encouraging others to take up PrEP
Taking ARVs with sero-positive partner	Taking pills with serodiscordant partner
Moral and practical support by family and relatives and/or through guardian	Encouragement/reminders predominantly from partner and friends
	Greater ease and peace of mind in sexual relationships; overcoming distrust
Social gatherings and drinking spots as source of HIV and ART information	Social gatherings and drinking spots providing access to health information
Organisational Level	
Choice of testing options: mobile testing, after hours testing, couple testing, PICT; self-testing	Choice of testing options including self- testing
Attractive and well-equipped facility	Seeing effectiveness of PrEP through regular HIV-testing
Private facility, privacy, non-exposed location	
Test and Treat	Written and anonymous risk assessment
Longer ARV supplies	Longer PrEP supplies
ART at all clinics in country; free choice of clinic	PrEP service provision in all clinics in country
Male-friendly clinics; separating gender groups	Separate PrEP services
Sending wife to collect pills for convenience	
Longer acting agents (pills/injection)	Longer acting agents; pills that arouse, prevent other illnesses and work as contraceptive
Friendly, flexible staff	Friendly, flexible staff
Fast service	Fast service
Longer opening hours	Longer opening hours
Education and counselling in/outside facility	Education in/outside facility
Service delivery in community and door to door or locations where men feel comfortable	Service delivery in community and door to door or locations where men feel comfortable
Novel approaches (ATM for ART, VL self-test)	
Incentives for MSW	Incentives for MSW
Entertainment and/or sports at ART facility	
Communal/Societal Level	
Community perception of HIV as manageable	Community association of HIV with death and prostitution: incentive to stay HIV-negative
Community view of ART as life-prolonging	Positive community notions of PrEP
No/reduced discrimination and stigmatization of PLHIV	Openness by church functionaries to talk about prevention and PrEP.
People living openly with HIV	Reaching young men in churches.
PLHIV able to hide their status because of early treatment and few side-effects	Cultural and beer-drinking festivals as risk situations for men
Taking health care seriously including clinic visits	Separating gender and age groups for more targeted education on PrEP
Men being seen as responsible and caring	MSW's virility; "inganwa"
Favorable community view of older MSW	Indigenizing PrEP
Policies regarding Test and Treat, longer supplies and laws on the protection of PLHIV	Contributing to King Mswati's vision of reducing HIV infections and to UNAIDS objectives
	Making PrEP obligatory for all HIV-negative people as a stigma-reducing strategy
	Long term political commitment to PrEP
BARRIERS	
ART **Intrapersonal Level**	**PrEP**
Not testing - keeping up "healthy" appearance	Not seeing oneself at risk
Side-effects, if persistent or visible	Side-effects, if persistent
Depression and self-stigma	Taking pills without being sick
Burden of daily pill taking	Burden of daily pill taking
Pill burden and pill size	Pill size? concern of PrEP providers/stakeholders
Treatment fatigue	Non-protection against STIs (other than HIV) and pregnancies

Feeling “normal” or healed and stopping ART	Fear of reduced libido or fertility
Insufficient food intake	
Taking alcohol and forgetting to take ARVs	Alcohol consumption: liver problems
Partial knowledge on ART and VLS	Partial knowledge of PrEP (effectiveness) and confusion of PrEP and ART
Interpersonal Level	
Not being told about HIV infection as a child born with HIV	Reluctance to broach subject of sexuality, HIV or PrEP in partnership
Non-disclosure out of mistrust, fear, or anticipating stigma (unclear if this is a barrier)	Fear of being mistaken for PLHIV when taking pills, mocked or losing friendship
Reliance of minors on family for treatment access.	Family’s, friends’ and partner’s critical attitude towards PrEP
ART affecting sexual performance negatively	Trusting partner (no need for further protection)
Fear of transmission - sexual abstinence	
Receiving wrong information/advice about ART	
Socializing with friends and missing time for taking ARVs or appointment at facility	Clubbing/socializing and drinking alcohol interfering with pill-taking
Organizational Level	
Facility-based VCT and ART services	Facility-based VCT and PrEP services
Not wanting to be seen at health facility or identified as PLHIV (rattling pills)	Not wanting to be seen at health facility or be mistaken for PLHIV (rattling pills)
Clinics women-dominated; “boring” for youth	Offering PrEP and ART together
Poor state of health facility (electricity, water)	Poor services
Exposed site of facility	Exposed site of facility
Restrictive opening times	Few facilities offering PrEP
Facility education does not reach enough men	Facility education does not reach enough men
Non-empathetic staff	Rude staff
Transport and frequent visits clashing with work commitments; being bound to one facility even when abroad	Transport and frequent visits clashing with work commitments
Long waiting periods and congestion	Lengthy process (mentioned by outsiders)
Communal/Societal Level	
MSW’s fear to test for HIV	MSW’s fear to test for HIV
Community perception of HIV as end of life.	Infidelity and sexuality: taboo themes in church
Negative community notions of ARVs	Negative community notions of PrEP (linked to promiscuity and infidelity, confusion with ART)
Communities excluding PLHIV from activities, mocking and insulting PLHIV	Little PrEP knowledge in communities – confusion of PrEP and ART
Stigmatizing attitude towards younger MSW living with HIV. Younger MSW being influenced by reference groups’ and societal expectations	Older men not seen as important target group by majority of respondents; cultural barriers in reaching older men.
PLHIV hiding their status for fear of stigma	Concerns about sustainability of PrEP program
Seeing health care as women’s domain.	Not understanding men’s health seeking behavior and preferences
Male PLHIV blamed for spreading virus, yet all genders judged on life-style if living with HIV	MSW being blamed for social evils and seen as promiscuous
Absence of policies for U=U; alcohol guidelines for ART	Conflicting guidelines for alcohol (PrEP and ART) leading to confusion

DISCUSSION

Please note: the author has published partial aspects of the results chapter in:

Berner-Rodoreda, A., Geldsetzer, P., Bärnighausen, K., Hettema, A., Bärnighausen, T., Matse, S., McMahon, S.A., 2020. **"It's hard for us men to go to the clinic. We naturally have a fear of hospitals." Men's risk perceptions, experiences and program preferences for PrEP: A mixed methods study in Eswatini.** PLOS ONE *15*, e0237427, doi: 10.1371/journal.pone.0237427.

Berner-Rodoreda, A., Ngwira, E., Alhassan, Y., Chione, B., Dambe, R., Bärnighausen, T., Phiri, S., Taegtmeyer, M., Neuhann, F., 2021. **"Deadly", "fierce", "shameful": notions of antiretroviral therapy, stigma and masculinities intersecting men's life-course in Blantyre, Malawi**. BMC Public Health *21*, 2247, doi: 10.1186/s12889-021-12314-2.

In this chapter I will bring together the different strands of the two studies: quantitative and qualitative findings (4.1.), facilitators and barriers (4.2.) and the comparison of MSW's experiences of ART and PrEP uptake and retention (4.3.) in the context of what is known through other studies, particularly from the Sub-Saharan African region. Salient findings from the two studies in terms of engagement in ART and PrEP services (4.3.1), the important role of MSW's reference groups (4.3.2.), participants' views on male-appropriate service delivery (4.3.3.) will enhance and expand Haberer's comparison of ART and PrEP (4.3.4.). The intersection of stigma, the life-course and masculinity ideals (4.3.5) culminates in a critical reflection of Connell's hegemonic masculinity framework (4.3.6.). This will be followed by an assessment of the frameworks employed (4.4.) a discussion of strengths and limitations (4.5.) and concluding remarks (4.6.).

4.1. How do quantitative and qualitative findings relate?

Qualitative findings mostly supported quantitative findings; one needs to bear in mind, however, that the interviewed MSW on ART and PrEP were part of the respective quantitative samples. Qualitative data added more nuance with some qualitative findings standing in contrast to quantitative findings, and many qualitative findings having no counterpart in the quantitative data which could be gleaned from clinic records, particular in the Malawi ART study.

4.1.1. Malawi

The median age of men receiving ART at UFC (43.4) and of the subgroup of VL suppressors (43.7) was eight to ten years higher than the median age of men on ART in the qualitative sample (35.1 for men with suppressed and 33.9 for men with unsuppressed VLs). Descriptive statistics showed lower VLS in men below 34 years of age, particularly for the age group 18-24-year-olds, a phenomenon which was even more pronounced in a Namibian study highlighting a more than 20% lower VLS rate in (gender aggregated) adolescents compared to

ART clients of 20 years and above (Agolory et al., 2018). In interviews, MSW mentioned structural (poverty-related) and psychosocial factors as hampering adherence such as anticipating stigma with repercussions on taking ART in public and visiting facilities, having a girlfriend, being busy or forgetting appointments, and less supervision by parents and care-givers with increased age. These findings largely mirror those of a review on adolescents and adherence in Sub-Saharan Africa (Adejumo et al., 2015) and highlight the need for psychosocial support starting with childhood and continuing through the difficult transition phase to adulthood. Young men who had to transit from the UFC youth club to health services for adults described feeling out of place at the facility. A systematic review on the transition period of pediatric to adult HIV care noted greater difficulties for non-suppressors and less support from health personnel who expected more commitment from adult clients (Ritchwood et al., 2020). Together with the Blantyre study these findings underscore the need for targeted adherence and VLS support for transitioning non-suppressors. Men above 60 years, by contrast, had the highest age-related VLS rates in the Malawi study (see *tables 7, 8*). Qualitative findings did not capture the experience of MSW beyond their mid-50s yet showed middle-aged to older MSW on ART as less stigmatized by society, see 4.3.5..

The majority of men starting ART in the sample presented with HIV- or AIDS defining symptoms (WHO stages 2, 3 or 4). This was also reflected in findings from IDIs which revealed late HIV-testing and ART initiation in men who kept up the image of a strong man until symptoms could not be ignored any longer. MSW's late ART initiation because of late testing is reflected in many studies, see 4.3.1.1. Quantitative findings showed that almost 40% of male clients started within a month of being tested; in interviews, many male respondents reported a delay of some days or weeks to wait for diagnostic results or to start TB treatment before initiating ART, with those who were very ill starting treatment immediately as their immune system was already severely compromised.

Despite less than 9% of male clients having a treatment guardian or supporter, their importance was evident quantitatively and qualitatively: uni- and multivariable regressions indicated a 4% higher relative risk for men to suppress the virus compared to men with no treatment supporter. This should be seen in the context of an already high VLS at UFC. The benefit of a treatment accompanier is also reflected in a recent systematic review of Sub-Saharan Africa studies (Nyoni et al., 2020) which noted a 5% higher VLS for clients in the pooled data. Qualitative data in Malawi showed that being reminded and encouraged to take the pills was crucial for some MSW, especially in the early stage of taking ART and as pointed out, partners often reminded MSW to take their pills thus playing the role of an "unofficial" treatment supporter.

Quantitative findings indicated that only year one on ART showed fewer than 90% of male clients suppressing their VL (*table 7*); in interviews, MSW depicted having to accept their HIV-status and getting used to taking pills but described VLS as a process rather than a linear progression from a high to a suppressed VL. Dominant reasons provided by men for poor adherence referred to travelling and working abroad, forgetting and being inconsistent in the timing *(table 13)*. These were also reflected in other studies (Bukenya et al., 2019; Chamberlin et al., 2021) and were not restricted to starting ART. While a Ugandan study noted treatment fatigue in men above 40 years (Bukenya et al., 2019), in the Malawi study, men below 30 years mentioned giving themselves and their throat a short break of a couple of days. Longer treatment gaps for younger men were based on depression or structural factors (e.g. working abroad), and in men above 30 years, on feeling well or misunderstanding VL information or instructions, see *table 13.* More than 90% of male clients for all other years on ART suppressed their VL which could also be due to the majority of men taking more forgiving dolutegravir-based ART regimens, see *table 9*. Literature on VLS highlights the greater likelihood of blips[13] with a delayed start of ART (Crowell et al., 2020; Farmer et al., 2016), and a greater risk of virological failure in clients with blips in the first year after being virologically suppressed (Geretti et al., 2008). An early start to ART, close accompaniment in the first year but also encouragement in subsequent years seem to be called for to avoid high VLs or even virological failure. The perspective and service preferences of younger men who have to take ART for many decades should be taken into account for treatment support programs, see also 4.3.3..

Lower VLS could be observed for men on 2nd line and non-standard ARV regimens – this was not as obvious from the qualitative data. While most MSW depicted that their ARVs were changed, they were unsure about which ARVs or line of ARVs they were taking (see also 4.3.1.6). More salient issues for men consisted of taking pills at the correct time and combining ART with travelling and spending longer periods away from home (*table 13)* as well as concerns about pill size (see 4.3.2.) and pill burden (ARVs, Bactrim, medicines for TB and other ailments). A meta-analysis of randomized controlled trials found higher pill burden associated with lower rates of VLS irrespective of dosing frequency (Nachega et al., 2014). While 2nd line ART and non-standard treatment at UFC included more pills with some taken twice daily, the most commonly prescribed 1st line ART regimens were fixed-dose combinations, usually taken once daily. Some clients also had to take Bactrim and possibly TB treatment which increased their pill burden, yet qualitative data from the Blantyre study suggested that additional factors beyond pill burden or 2nd line/non-standard ART had a bearing on VLS such as travelling,

[13] Temporary detectable increases of viral load occurring after viral load suppression, see Geretti et al., 2018

anticipated stigma, knowledge of ART and social support – the latter has been found to be positively associated with VLS in a recent Ugandan study (Brown et al., 2021).

The number of missed appointments showed a weak negative association with VLS (*table 11*). In interviews, men provided reasons for missed appointments or retention problems in having had to travel or spend extended periods away for work, not asking for sufficient ARV supplies or not anticipating the length of stay (*table 13)*. Distance between MSW's residence and the health facility showed no statistical significance for VLS in regressions. This mirrors results from a study in Uganda (Billioux et al., 2018). While transport issues were highlighted by some MSW in the Malawi study who struggled to save enough money for respecting facility appointments, distance only seemed to be one factor, the clash with breadwinning or schooling and having to find excuses for clinic appointments were additional structural and stigma-related factors which underscored the convenience of fewer appointments per year irrespective of the exact distance to the facility. Additional qualitative findings will be discussed in 4.3., many of which were not reflected in the quantitative data.

4.1.2. Eswatini

The most important risk situations for MSW initiating PrEP (being afraid of HIV, multiple partners, serodiscordant or partner of unknown status) were also reflected qualitatively with mistrust of the partner and her HIV-status as well as caring for the family and wanting to stay alive for supporting the family named as further important aspects. Interviews provided more context and nuance such as MSW describing *how* they are exposed to risk through work placements or peer pressure by age-mates.

The mean age of men at risk in the overall PrEP data set (31.5) and men who initiated PrEP (32.0) roughly matched the average age of MSW approached about PrEP in the qualitative sample (33.3), which contained three interviews with no age entries. In the quantitative data set, 90% of men at risk were <=45 years, in the qualitative dataset, 90% were <=41 years. The three male respondents on PrEP aged 49-65 years were living in serodiscordant relationships thus showing one type of risk situation for older male PrEP users. A US study found older men being better informed and associating less stigma with PrEP (Klein and Washington, 2020); since PrEP had only been introduced through this study, it was an unfamiliar prevention method in the Eswatini context. The included views of local leaders (up to the age of 71) showed older leaders generally appreciating PrEP with some concerns regarding promiscuity and daily adherence.

The overall data set indicated the highest HIV risk for MSW with multiple partners with a decreasing risk for partners living together, partners not living together and the lowest risk for singles. This categorization proved misleading in the qualitative interviews as the stories

told often did not match the personal information given by respondents in the template. Somebody with a partner living together would also mention additional partners, a young man self-categorized as having multiple partners would say in the interview that he hasn't been sexually active for the last month, a single man talked about his girlfriend and additional partners; the categories under which MSW self-classified may have been influenced by social desirability. MSW on PrEP who mentioned living with a partner in the qualitative sample were 33 years and above, those not living with a partner in their 20s up to the age of 34 thus showing an age-correlation with cohabitation.

PrEP providers spoke about clients underestimating risks leading to a divergent risk perception between PrEP providers and clients. This has also been reported in other PrEP studies (Hill et al., 2020; Khawcharoenporn et al., 2012) and, as Hill and colleagues point out, may be due to reasons not captured in risk scores such as clients not feeling comfortable to discuss their real risks with PrEP providers as some of the Eswatini PrEP providers suspected.

While male PrEP clients in Eswatini shared their intention to stay on PrEP long term (some even for life), retention data showed high attrition rates of MSW in the PrEP program (see *figure 18*). The high drop-out rate correlates with study results among MSM in the US (Chan et al., 2016; Eaton et al., 2015; Hojilla et al., 2018; Parsons et al., 2017; Spinelli et al., 2019) and a study comparing PrEP and early ART retention in young female sex workers in South Africa (Eakle et al., 2017). Since PrEP clients could re-start PrEP anytime, they felt less compelled to abide by refill-dates. The Eswatini findings echo those of a large East African study showing PrEP refill delays by client and a tendency to re-start PrEP (Koss et al., 2020). MSW in Eswatini underscored a prevention-effective approach by restricting PrEP usage to risk situations (Berner-Rodoreda et al., 2020c; Haberer et al., 2015; O'Malley et al., 2019). A convenience approach could also be noted in Eswatini: switching to other prevention methods once PrEP supplies were depleted and travelling to the health facility was not feasible. PrEP thus offered prevention flexibility. While seroconversion on PrEP is rare, it has been noted for discontinuers (Marcus et al., 2016). Provider concerns in this regard should thus be taken seriously and regular HIV testing offered to PrEP discontinuers in order to detect seroconversion early.

4.2. Facilitators and Barriers for MSW's uptake, adherence and retention on ART and PrEP

As shown in section 3.3., facilitators and barriers for MSW in taking ART or PrEP were manifold, making pill-taking and involvement in PrEP and ART programs a complex phenomenon. MSW drew on their own motivation, relationships, their anticipation of treatment and experiences at health facilities as well as taking societal perceptions of HIV, ART and PLHIV and masculinity

expectations into account. In this section, I will discuss main findings related to facilitators and barriers in light of ART and PrEP systematic reviews and recent facilitator and barrier literature before delving deeper into a comparison of younger and older MSW's experiences of ART, PrEP and health services at the intersection of stigma and masculinities in section 4.3..

4.2.1. ART facilitators and barriers viewed in light of literature

For the men and ART study in Malawi, facilitators and barriers for taking ART interestingly did not neatly link to suppressing or non-suppressing the viral load, i.e. adherence outcomes. The expectation that men with suppressed VLs may mainly speak about the ease of taking pills and men with unsuppressed VLs may hone in on the challenges was not borne out in interviews, many of which provided both facilitators and barriers regardless of VL-status highlighting VLS as a complex process. This should be borne in mind for client- and male-oriented future interventions.

Recent reviews on ART studies in Sub-Saharan Africa that included the perspective of MSW, and studies undertaken since the latest review underscored psychological and practical support, hope for or evidence of improved health, HIV-status disclosure, positive interactions with health staff and taking responsibility for children as facilitators for taking ART (Chirambo et al., 2019; Conroy et al., 2020; Croome et al., 2017; Hendricks et al., 2021; Hendrickson et al., 2019; Iwuji et al., 2020; Kebaabetswe et al., 2020); this mostly tallies with the findings from the Blantyre study in terms of support, family responsibilities and the interaction with health personnel, yet the Blantyre study revealed that while disclosure was generally viewed as a facilitator, counter-examples of men who disclosed and had problems with adherence and men who did not disclose and suppressed their VL also existed. Caution should therefore be exerted on seeing disclosure as predictive of good adherence and VLS as study results are inconclusive: While a Ugandan retrospective cohort study showed an over 80% lower hazard rate of virological failure in those who disclosed their status voluntarily to a partner, relative or friend (Izudi et al., 2016), an Ethiopian study presented a lower hazard rate of virological failure of about 40% in those who did not disclose their status (Yimer and Yalew, 2015). The authors of a recent Ethiopian literature review on disclosure and adherence noted that "self-disclosure by itself does not improve adherence" (Dessie et al., 2019, p. 5) yet indicated a correlation with improved social support. An earlier meta-analysis of 21 studies had shown conflicting evidence of social support being linked to disclosure but noted that social support was often not clearly defined (Smith et al., 2008). For MSW on ART, the importance of reference groups for disclosure and support, particularly family and relatives, was a salient issue and will be expanded on in 4.3.1.. Some additional findings from the Blantyre ART study such as knowing (of) someone on ART in the wider family, community or society who

functioned as a positive or negative role-model in motivating MSW to take up and be retained on ART does not seem to be reflected in facilitator and barrier ART literature in Africa other than highlighting the important and positive role of expert clients providing HIV services for other clients (Semitala et al., 2017; Tenthani et al., 2012).

The pivotal issue of accepting a positive HIV result for starting and continuing ART emerging from the Malawi ART study has also been highlighted in other Southern African studies (Horter et al., 2017; Nam et al., 2008); the process of accepting one's HIV infection may have been facilitated in the Blantyre study through the compromised immunity of many MSW who started ART late. A lack of acceptance has been noted as a barrier for ART adherence not just in Malawi but also in Botswana (Kebaabetswe et al., 2020). The Test and Treat policy (Ministry of Health, Malawi, 2016) was viewed in another Malawian study as potentially overwhelming healthy clients who were not given sufficient time to come to terms with their HIV infection (Dovel et al., 2020). While there was widespread acceptance of the Test and Treat strategy across respondent groups in the UFC Blantyre study with most community men, regardless of their residential area, open to starting ART immediately, some stakeholders echoed concerns raised by Dovel and colleagues (ibid) that some MSW need time to accept their status, feel too healthy to start ART and are afraid of stigma or side-effects. The repercussions of these reservations for the Test and Treat strategy may need to be explored further as a central issue in current ART programs.

Anticipated or experienced stigma, transport issues, side-effects and fear of disclosure were not only salient themes in the Blantyre ART study but also frequently mentioned in systematic reviews as summarized in Hendrick's mega-aggregation of systematic reviews (Hendricks et al., 2021) and in studies in Southern, East and West Africa published after July 2018 and thus not considered in this review (Chirambo et al., 2019; Dovel et al., 2020; Hendrickson et al., 2019; Iwuji et al., 2020; Kebaabetswe et al., 2020; Madiba and Josiah, 2019; Magaço et al., 2019; Schatz et al., 2019; Tibbels et al., 2019; Ware et al., 2020). Other issues such as lacking knowledge on ART, pill-burden, treatment fatigue, food insecurity, issues with facility-based service delivery (waiting periods, fear of non-confidentiality, negative experience with health care providers), depression and negative community perception on HIV and ART and gender norms created barriers for male clients in Malawi and in other studies (Harris et al., 2021; Hendricks et al., 2021) and will be further explored in this chapter. The desire of young men to access separate and youth friendly ART services such as the youth club at UFC is mirrored in other studies (Mbalinda et al., 2020; Nardell et al., 2020) and underscores the need for tailoring services to particular target groups rather than following a "one size fits all" approach. The issue of future male-friendly service delivery will be discussed in more detail

under 4.3.3.. The ART findings also largely reflect the conclusions of a recent global but predominantly high-income country-based review on heterosexual men and HIV:

> the HIV epidemic differs in heterosexual men relative to other groups living with the virus in various ways, including unique social costs associated with disclosure, less reliance on the HIV community for support and higher likelihood of being diagnosed at an advanced stage of disease. (Kou et al., 2017, p. 556)

4.2.2. PrEP facilitators and barriers viewed in light of literature

Sub-Saharan African PrEP studies, which included MSW, male adolescents, young men and fishermen, highlighted similar facilitators to the Eswatini study such as having an effective alternative to condom use to stay protected against HIV when at risk (Carroll et al., 2016; Gombe et al., 2020; Hannaford et al., 2020; Muhumuza et al., 2021; Patel et al., 2016; Ware et al., 2012) or creating ease of mind in sexual relations (Muhumuza et al., 2021; Patel et al., 2016). Barriers by MSW in Eswatini matched those of other studies: the concerns to be stigmatized or seen as HIV-positive in having to take pills without being sick or a general dislike to taking pills daily (Gombe et al., 2020; Hannaford et al., 2018; Mack et al., 2014a; Muhumuza et al., 2021; Muwonge et al., 2020; Patel et al., 2016; Yoshioka et al., 2020), the fear of side-effects (Mack et al., 2014a; Muhumuza et al., 2021; Patel et al., 2016; Wood et al., 2019) which like the Eswatini study also included the concern of lowered sexual performance in a study on adolescents and young adults in Uganda, Zimbabwe and South Africa (Muhumuza et al., 2021). Further barriers, such as transport to the facility, the blanket term "forgetting" PrEP and not wanting to carry PrEP pills when travelling (Gombe et al., 2020; Mack et al., 2014a; Muhumuza et al., 2021; Muwonge et al., 2020; Patel et al., 2016); sustainability concerns, in particular the fear of PrEP programs running out of stock (Muhumuza et al., 2021; Muwonge et al., 2020) were not only noted in Eswatini but also in other Southern African PrEP studies. Yet in contrast to the Eswatini study, even recent PrEP studies provided respondents' *hypothetical* views, as PrEP had not been rolled out to the general population (Govender and Abdool Karim, 2018; Hannaford et al., 2020; Mack et al., 2014a; Muhumuza et al., 2021; Muwonge et al., 2020; Yoshioka et al., 2020). Youth in Uganda, Zimbabwe and South Africa raised anticipated challenges of bad tasting and large pills or not having enough food for taking the pills (Muhumuza et al., 2021) thus honing in on personal and structural barriers which were not raised by MSW in Eswatini. Conversely, none of the qualitative barrier and facilitator PrEP studies in Sub-Saharan Africa with MSW as a target group seemed to mention alcohol as a barrier or a facilitator for PrEP, a theme I will discuss in relation to PrEP and ART in 4.3.1.

4.3. MSW's usage and experience of ART and PrEP – juggling personal, health and social considerations with notions of masculinity and stigma

MSW's utilization of ART and PrEP services required more than a one-off decision to approach a local clinic; rather it called for renewed commitment, support and interaction with reference groups and health personnel and a conscious or subconscious positioning on the extent to which community perceptions of gender, age, HIV, ART and PLHIV would guide one's behavior. While there were many similarities in MSWs' experience of taking ART and PrEP, differences also emerged and will be highlighted. The culminating critical reflection on Connell's concept of hegemonic masculinities will be based on the findings of both studies.

4.3.1. MSW's engagement with ART and PrEP in a stigmatized environment

MSW's fear of HIV and of knowing one's status was talked about by participants in both studies as a hindrance for men to access services because of masculinity and stigma considerations which emerged as an important theme at various levels of SEM (see *figures 11* and *15*), yet the behavior by MSW in the two studies differed.

4.3.1.1. Testing

For the majority of MSW on ART in the Malawi study the reluctance to test was linked to stigma and masculinity considerations in not wanting to appear weak or in bad health by attending a health clinic. Studies from many parts of the world over the last 20 years have highlighted late presentation of men for testing services with some ascribing these to stigma, masculinity or structural factors such as MSW underusing health facilities regarded as "female spaces" or not being targeted for HIV-testing (Bond et al., 2015, 2005; Delpierre et al., 2006; Hoffmann et al., 2016; Johnson et al., 2021; Johnson, 2015; MacCarthy et al., 2016; Manavi et al., 2004). Yet, a marked difference existed between MSW on ART in the Malawi study and MSW in surrounding communities with the latter testing pro-actively (Berner-Rodoreda et al., 2021b), despite both groups showing a similar age range and living in and around Blantyre so that neither residence (Mandiwa and Namondwe, 2019) nor age (Johnson et al., 2021) seemed to fully explain the different testing behavior by men.

For MSW in serodiscordant relationships in the PrEP study, regular testing was a matter of self-interest. For all interviewed MSW on PrEP, as we have seen, testing was a confirmation of PrEP's effectiveness or a necessity for initiating PrEP which in turn made safe sexual intercourse without condoms and without interrupting sexual relations possible, i.e. PrEP facilitated acting on masculinity ideals. MSW accepted regular HIV-testing as part of the voluntary decision to use PrEP. Yet, not much has been reported in other PrEP studies on MSW's attitude towards regular HIV-tests; a recent PrEP study on MSM in Namibia and South Africa showed the perceived seriousness of the relationship having an impact on MSM's

testing behavior (Stephenson et al., 2021); other PrEP studies (mainly focusing on MSM and women) have highlighted the convenience of self-testing (Kwan and Lee, 2018; Ngure et al., 2014; Wanga et al., 2020). While self-testing has been shown to be particularly useful for older MSW in Malawi as a more inconspicuous tool (Johnson et al., 2021) and was mentioned by a stakeholder as facilitating testing among youth in the Malawi ART study, neither MSW on PrEP in the Eswatini nor MSW on ART in Malawi spoke about their own experience of self-testing (the only exception being a man in a community in the Malawi study) thus showing that the accessibility of self-testing kits is still restricted in high-prevalence settings; it is also questionable if self-testing can fully replace facility testing for MSW on PrEP in countries where internet connections are a challenge, as records will need to be kept by service providers of clients' HIV-status. Other forms of testing such as mobile testing, after-hours testing, provider-initiated and couple testing were mentioned by participants in both studies as facilitating testing for men. Yet the impact of serodiscordant results when testing together emerged as a concern which is also reflected in a recent systematic review on couple-testing in Sub-Saharan Africa (Hailemariam et al., 2019) where partners preferred to test individually first before testing with the partner.

4.3.1.2. Side-effects

Once on ART or PrEP, MSW had to cope with side-effects, daily pill-taking and frequent clinic visits. While many side-effects were similar between ART and PrEP (e.g., dizziness, headaches, nausea, sleepiness) and mostly experienced as temporary in both studies, some MSW struggled with side-effects or even discontinued the program in the case of PrEP. Side-effects emerged as a stronger concern for MSW than for health personnel in both study settings. Particularly female health workers showed varying degrees of empathy and many belittled the issue of side-effects whereas male health personnel appeared more empathetic; this gender dimension of health care workers' empathy would have to be explored further. Less concern for side-effects by health care workers has also been reported in other East and Southern African studies (Renju et al., 2017) and points to a potential challenge for adherence and retention, as MSW may not want to be seen as self-pitying or over-sensitive to pain. Undesired side-effects such as gynecomastia required the interaction with health staff to change the regimen in the ART study. Only few and older MSW on ART felt they could live with visible signs of taking ART. The concern of not wanting to be recognized as a PLHIV through noticeable side-effects was mainly voiced by younger men in the Malawi study thus showing a life-course related masculinity dimension of treatment. Side-effects for MSW on PrEP, particularly if they might hamper their everyday life or were related to sexuality, fertility or liver problems were factored into the decision to take up, decline, continue or discontinue PrEP, yet disfiguring

side-effects were not explicitly mentioned which correlates with other PrEP studies (Corneli et al., 2016; Wood et al., 2019).

4.3.1.3. Interacting with health staff

MSW's experiences with health staff and health facilities were mostly positive in both studies with only few men commenting on long waiting periods or unfriendly staff, yet for young MSW on ART the mixing with older and female clients and the general environment was depicted as unattractive. While MSW on PrEP enquired about PrEP voluntarily, MSW on ART were described as not asking for clarifications if they had not understood instructions (exceptions were noted); a certain "shyness" in MSW towards engaging with (especially female) health personnel was mentioned in both studies. Being treated well and with respect was of importance to MSW on PrEP and ART, yet seemed to have a higher priority for MSW on ART who anticipated negative treatment because of their positive HIV-status.

While information from health staff was important to MSW on PrEP, for MSW on ART counselling played a crucial role, especially for serious problems like depression, which could be connected to the HIV infection, a side-effect of the medication, the infection itself or unrelated (Porche and Willis, 2006) or psycho-socially related through unemployment and low social support (Katz et al., 1996; Porche and Willis, 2006). In the Malawi ART study, depression was mainly talked about by young MSW with unsuppressed VLs, yet the association of depression and adherence remains inconclusive in MSW (McMahon et al., 2019). MSW on ART talked about receiving help and counselling and opening up towards health personal in the hope to overcome the problem of depression, a problem not reported in the Eswatini PrEP study. While PrEP studies and reviews among various groups including key populations and in various geographic locations refer to depression, its relation to PrEP uptake and adherence remain unclear (Mehrotra et al., 2016; Miller et al., 2021; Shuper et al., 2020; Velloza et al., 2020). Miller and colleagues stress the PrEP benefits of reducing anxiety. Selecting PrEP as a matter of choice, being HIV-negative, less anxious in one's sexual relations, and able to discontinue PrEP anytime may have made a psychological difference for MSW on PrEP in Eswatini compared to MSW on ART in Malawi who had no other option than taking ARVs to survive. Psychological differences between taking ART and PrEP should be further explored.

4.3.1.4. Alcohol consumption

A controversial issue for MSW in both studies was the role of alcohol vis-à-vis ART or PrEP. Studies in Africa highlight forgoing alcohol as a predictor for good ART adherence (Chime et al., 2019b) and identify alcohol consumption as impinging on ART adherence (Kalichman et al., 2019). A recent systematic review of studies in Sub-Saharan Africa showed "approximately twice the odds of ART non-adherence relative to non-users" (Velloza et al., 2020, p. 1737). The

qualitative findings from the Blantyre ART study add another dimension: as depicted in another Malawi study (Conroy et al., 2020), many MSW gave up alcohol before or shortly after starting ART and were counselled about the negative effects of alcohol consumption on ART adherence, yet stakeholders' own views ranged from seeing alcohol consumption as highly problematic for ART adherence to the possibility of combining it with ART by spacing out pill-taking and consuming alcohol. Some MSW with suppressed VLs (and some with unsuppressed VLs) described taking alcohol in the evening and having no problems remembering their pills in the morning thus highlighting the importance of the pattern and amount of alcohol consumption. With high levels of alcohol intake in Southern African countries (Manthey et al., 2019), cognitive psycho-educational interventions such as awareness of personal alcohol consumption with a view to reduce it (Leddy et al., 2021), limiting the number of drinks, the time for drinking and interspersing drinking with non-alcoholic drinks (George et al., 2021) might be more promising strategies than prohibiting alcohol for PLHIV on ART. Addressing clients' toxicity beliefs and concerns about concurrent alcohol intake and educating them on the concrete interaction of their particular ART regimen with alcohol (El-Krab and Kalichman, 2021) might also lead to better adherence.

The view held by local leaders in the PrEP Eswatini study on alcohol consumption increasing the risk of unprotected sex has been demonstrated in a Ugandan study (Woolf-King et al., 2018). But the impact of alcohol consumption on PrEP adherence is less clear. A recent US study on MSM showed no effect of heavy drinking on PrEP adherence (Grov et al., 2019); an older qualitative study on MSM and female sex workers in Kenya reported that some participants forgot to take the pills after alcohol consumption or were worried about drug interactions (Van der Elst et al., 2013). Concerns about PrEP and alcohol consumption leading to toxicity made *MSM* in the US avoid PrEP (Kalichman and Eaton, 2017); these concerns were also shared by MSW in the Eswatini study in terms of anticipating liver problems. Liver problems including renal failure have been documented in studies of clients taking ART over many years (Chawla et al., 2018), the greater concern among participants in the PrEP versus the ART study may be linked to the voluntary nature of taking PrEP and the possibility to use alternative prevention methods. Clearer guidelines and communication on PrEP and ART for MSW who drink alcohol and the real dangers of chemical interactions with particular ARVs as well as more studies on the effects of spacing alcohol intake with PrEP/ART pill-taking may help improve uptake and retention in MSW for both ART and PrEP.

4.3.1.5. The fear of risk compensation and MSW's behavior

Stakeholders and health providers in both study settings referred to the danger of MSW increasing their risk behavior by knowing about their non-infectiousness when suppressing

their VL (ART) or feeling 100% safe when on PrEP, yet concerns about risk compensation are not restricted to TasP or PrEP but have also been voiced with regard to male circumcision, vaccines and microbicides (Cassell et al., 2006; Eaton and Kalichman, 2007; Traeger et al., 2018), see (Berner-Rodoreda et al., 2020c). With a negligible to non-existent risk of infection for adherent clients on PrEP (Rodger et al., 2016) and a negligible to non-existent risk of transmission for clients on ART (Cohen et al., 2016, 2012) risk compensation in the field of HIV is commonly understood as an increase of STIs through less or no condom usage (Blumenthal and Haubrich, 2014). STIs could be reduced through frequent STI testing, treatment or prophylaxis with antibiotics as suggested by Castro (2019); the benefit of antibiotic prophylaxis would, however, have to be weighed against the danger of increasing antibiotic resistance.

Stakeholders in the ART study did not seem to convey the benefit of a suppressed VL to clients in terms of being non-infectious as encapsulated in the message **U**ndetectable = **U**ntransmittable out of the concern that MSW might welcome the message and increase their sexual activities. Stakeholders feared a spike in STIs and HIV re-infection and a potential misunderstanding of "undetectable" as "healed". The caution of Malawian stakeholders is consistent with the perception of health workers in Kenya (Ngure et al., 2020) and also reflected in studies covering multiple countries (Calabrese and Mayer, 2019; Okoli et al., 2020). However, Okoli and colleagues noted better adherence to ART, VLS and more disclosure in PLHIV who were informed about the full benefits of ART (ibid). A cluster-randomized controlled village trial in Malawi found an association of public health information on treatment as prevention with increased testing for HIV and more acceptance toward partners on ART (Derksen et al., 2015) thus showing improved health outcomes for clients, greater public health benefits and a lowering of stigma. In the Malawian Men and ART study as in a South African study, men were aware of individual ART health benefits, yet unaware of VLS benefits in terms of being non-infectious (Mooney et al., 2017). Being unaware of U=U, some MSW in the Malawian study held misconceptions on the danger of transmitting the virus, which led a minority of them to restrict their social and sexual interactions, and in one case to refrain from sexual relations altogether. Similar restrictive sexual behaviors in terms of "sexual inactivity" and "reduced frequency of sex" were reported in connection with a poor understanding of U=U in an Australian study (Huntingdon et al., 2020).

Health personnel in the PrEP program worried about the effect of PrEP on men's sexual behavior, yet MSW on PrEP largely mentioned the same number of sexual partners as before (Berner-Rodoreda et al., 2020c). The number of male PrEP respondents deciding to dispose of condoms after taking up PrEP matched the number of MSW mentioning continuous condom use. This could be a worrying tendency, yet it was not clear how consistent their condom use had been before to gauge the extent of risk compensation (Berner-Rodoreda et

al., 2020c); the British PROUD study among MSM had, for example, indicated inconsistent condom use prior to engaging with PrEP (Gafos et al., 2019). The fact that PrEP did not prevent STIs or pregnancy was mentioned by several MSW in Eswatini as a drawback but may have also motivated MSW to maintain condom usage with non-regular or even regular partners. The occurrence of STIs could easily be monitored in both ART and PrEP follow-up visits as an efficient way to detect and treat STIs. While PrEP reviews, clinical trials and demonstration projects have largely shown fears regarding risk compensation to be unfounded (Fonner et al., 2016; Grov et al., 2015; Gust et al., 2016; Hojilla et al., 2016; Liu et al., 2013; Marcus et al., 2013), a systematic MSM PrEP review showed an increase in STIs (Traeger et al., 2018) cited in (Berner-Rodoreda et al., 2020c) highlighting the need to monitor STIs in PrEP clients.

4.3.1.6. Knowledge on PrEP and ART

The health facility, in addition to social networks and the media, were primary sources of information on ART and PrEP for MSW. In both studies, MSW showed a generally good understanding of how ART and PrEP worked, even if they did not refer to the names of the ARVs used in either study; instead they talked about taking “pills”, “tablets” or “beans” or referred to the color of the pill bottles. Evidence from studies is inconclusive if knowing the name of the drug improves adherence or if recognition is sufficient (Lenahan et al., 2013; Maduka and Tobin-West, 2013). Unfamiliarity with the ARV substances could be a sign of not having in-depth knowledge of ART or PrEP or demonstrate the desire not to mention potentially stigmatizing pills. A generic reference to them might be a protective strategy.

In both studies certain knowledge gaps became evident. For MSW on ART the biggest knowledge gap related to the benefits of VLS in terms of non-infectiousness (see 4.3.1.5.). In the PrEP study, there was some haziness regarding the point in time when PrEP would become effective and the degree of effectiveness. Confusion of PrEP and ART occurred in other MSW interviewed such as local leaders or “decision makers”, not MSW on PrEP. The main source of information, the health facility, was seen as not ideal for reaching MSW with PrEP information due to few men making use of health facilities. Low awareness of PrEP among MSW as has also been shown among young men in South Africa (Shamu et al., 2021) call for different approaches for information dissemination (4.3.3.).

4.3.1.7. Regular clinic visits

In both the Malawi and Eswatini studies, travelling to the facility was a burden for many MSW because of financial and time constraints as appointments could clash with breadwinning activities. Differences in the economic context of the PrEP and ART studies were evident in this regard (see 4.5.). Adherence and retention challenges because of work and travel arrangements concur with other African ART (Bukenya et al., 2019; Chamberlin et al., 2021)

and PrEP (Psaros et al., 2014) studies with the Ugandan studies also showing a close link to stigma considerations (Bukenya et al., 2019; Psaros et al., 2014). In both the Malawi and Eswatini studies, taking pills in front of others, carrying rattling pills and being seen at a health facility constituted challenges for MSW who did not want to be identified or confused with PLHIV. In both studies, older men showed less concern for how other people in the community might view them than younger men. Yet, in contrast to a systematic review of Sub-Saharan African studies which showed that transport barriers were associated with worse HIV health outcomes (Lankowski et al., 2014), those reporting transport challenges in the Blantyre ART study included men with suppressed and unsuppressed VLs, and quantitative data showed a marginally higher VLS in men who lived further away from facilities in descriptive statistics which was, however, not statistically significant when regressed.

Being late for refills posed challenges for ART adherence and retention with potentially poorer health outcomes, high VLs and possible regimen changes. Flexibility in terms of refill dates and being able to conduct VL-tests elsewhere eased retention in MSW who had to work abroad. Providing six-monthly drug dispensing for stable clients as started in 2019 in Malawi and intensified during the COVID-19 pandemic was appreciated by clients; MMDD has shown to be non-inferior for client retention in a study in Malawi and Zambia which excluded non-stable clients (Hoffman et al., 2021). Flexibility in appointment dates may need to be expanded for better ART retention (Chamberlin et al., 2021), yet the present combination of MMDD, the possibility to contact health personnel by phone, integrated services including STI screening and treatment and nutritional counselling, youth services and a tracing program such as offered at UFC were regarded as helpful by MSW with only few MSW complaining about being scolded by staff when appearing late for appointments.

A Ugandan PrEP study found a lower likelihood of participants to start and be retained if they lived more than 2kms from the facility (Mayer et al., 2019). Since some participants in the Eswatini study owned cars, distance alone did not seem to be the deciding factor for uptake or retention, yet financial constraints, distance and work commitments caused transport challenges for re-fill delays for some MSW on PrEP and led to discontinuation. As in a Kenyan study (Ongolly et al., 2021), reasons for discontinuation were multifaceted with distance being one component and better PrEP availability at local clinics seen as a solution (see also 4.3.3.). While many MSW did not find the 3-monthly check-ups a burden but rather a confirmation of being HIV-negative, for others they were an inconvenience and a reason for decline as has also been reported in a US *MSM* study (Whitfield et al., 2018).

4.3.2. The important role of MSW's reference groups

In both studies, MSW's reference groups (partner, family, friends, colleagues) played a motivating role for the uptake and continuation of ART or PrEP: being there and providing for the family, the desire to have HIV-negative children and supporting the children as they grow up. Practical and moral support received from reference groups also helped MSW, particularly MSW on ART. In turn, MSW on ART and PrEP also motivated others to get tested and to take up PrEP through informal peer to peer talks.

4.3.2.1. Disclosure and Sharing

While MSW in both studies shared their serostatus or talked about taking daily pills with members of their reference groups, differences pertained to who they trusted the most. MSW on ART mainly confided in family and relatives. This often included the partner, yet the primary people to disclose to were those accompanying or encouraging MSW to test for HIV at the health facility – mainly close relatives whose support one could count on; they were also chosen as a treatment supporter who would remind them of clinic appointments and of taking the pills. The allegiance of the partner and friends had to be weighed against the threat of a possible relationship break-up. For MSW on ART, the fear of losing a partner depended on the length and strength of the relationship, see *figure 20*.

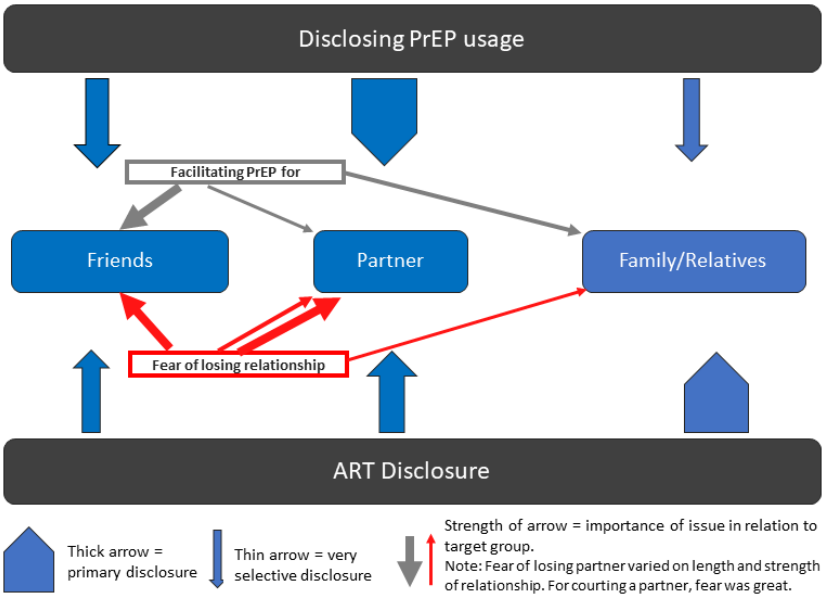

Figure 20 Confiding in friends, partner and family: differing priorities for MSW on PrEP in Eswatini compared to MSW on ART in Malawi

In the PrEP study, trust and distrust appeared almost symbiotic. Distrust in their own fidelity and that of their partner was presented as a motive for taking up PrEP. Yet when on PrEP, MSW mainly confided in their sexual partner despite the danger of raising suspicion or leading to distrust. Other important confidants for MSW on PrEP were friends and colleagues. Family and relatives were mentioned to a lesser degree and mainly for younger men – the

sharing of one's PrEP status was often linked to motivating others – friends, colleagues, family and the partner to also take up PrEP, as illustrated in *figure 20*.

The Malawi findings of MSW disclosing primarily within the family echoes findings from a Ugandan study (Ssali et al., 2010) whereas a South African study as well as British studies revealed the partner as the main person to disclose to for male PLHIV (Dageid et al., 2012; Daskalopoulou et al., 2017; Petrak et al., 2001). The Malawi ART study also showed a greater variety of family members who MSW confided in, ranging from parents, siblings, grandparents to uncles, aunties and in-laws. As in the Ugandan study (Ssali et al., 2010), hoping for support when needed and wanting to inform those who had seen one's health deteriorate were important motives for disclosure. A further reason for disclosing to the partner in the Malawi study was the sheer impossibility to keep pill-taking a secret for long.

A family member as a trusted treatment supporter facilitated MSW's initiation and guided MSW through the difficult early period of pill-taking in the Malawi study (with one notable exception of misleading advice) and thus played a crucial role for uptake and retention in ART for men, for whom pill size and pill burden emerged as obstacles. Despite many MSW on ART and PrEP taking the same ARV substances (in particular TDF), only MSW on ART mentioned struggling with swallowing big pills; in the PrEP study, it was mainly providers who commented on the size of the pill. A US-based study found pill aversion and psychological barriers linked to difficulties in swallowing pills (Dorman et al., 2019); the voluntariness of taking PrEP compared to having no real choice in taking ART may have facilitated pill-taking for MSW on PrEP. Pill-burden (concurrent intake of ARVs, antibiotics, TB or diabetes medication) was mentioned by MSW on ART independent of age and VL-status; these findings are reflected in a South African study which showed that concurrent TB treatment and high pill-burden did not affect ART adherence (Moosa et al., 2019). MSW on PrEP, by contrast, did not complain about pill burden which may indicate that MSW on PrEP were healthier and did not need to take other medicines or that the issue was not important enough for them to raise in the interview. Both studies included MSW above the age of 50, i.e. population groups with a higher risk of co-morbidities with or without HIV (Negin et al., 2012; Soni et al., 2018).

In Eswatini, few MSW spoke about the partner or a friend reminding them; most MSW seemed to remember to take the pills themselves or set an alarm which can be interpreted as another sign of taking an independent decision to use PrEP. MSW on PrEP did not have a "treatment" supporter, yet "treatment buddies", peer support and adherence clubs have been suggested for improving adherence, not only by stakeholders in Eswatini but also in other African PrEP studies, particularly for young men (Cowan et al., 2016).

The observation from a recent qualitative Ugandan ART study that the majority of treatment supporters for men were female (Nakamanya et al., 2019) also applied to the

Blantyre ART study based on MSW's personal stories, yet male family members were also mentioned by MSW in the Blantyre study for whom the primary consideration seemed to be relatedness. Close family members were not just important for unmarried men but also for some married men who preferred their mother and brother as guardian over the spouse thus highlighting the primary issue of trusting blood relations. While friends were not mentioned as the first people to disclose a positive HIV status to, friendships played an important social role for men in providing and receiving advice and support. Ensuring that MSW gain accurate knowledge on health and HIV issues should be a major consideration seeing that this information will be shared with a wider reference group.

In a recent Latin American study, Bartels and colleagues present three reasons for gay and bisexual men to disclose PrEP usage: informing others of PrEP, hope for support and declaring one's HIV-negative status (Bartels et al., 2021). MSW's reasons in Eswatini relate to the first and third reason presented by Bartels and colleagues. While some MSW in Eswatini mentioned being reminded by friends to take the pills, this was not presented as a reason for disclosure. Studies with gay and bisexual men portrayed them as disclosing to partners or friends, but hardly to family or colleagues (Bartels et al., 2021; Galea et al., 2011) or restricting disclosure and discussion about PrEP to men with the same sexual orientation (Witzel et al., 2019). In the Eswatini study, colleagues played a similar role to friends in terms of dialogue partners for PrEP: MSW would also inform them about PrEP in order to protect them from becoming infected; heterosexual orientation was implied. As in the ART study, MSW acted as peer educators – a fact that could be used more effectively for PrEP programs.

4.3.2.2. The implications of seroconcordance and discordance

The serostatus of the partner seemed to make a difference in both studies. For MSW on ART, having a partner on ART facilitated pill-taking as both could remind and support each other. This is also reflected in a South African study (Conroy et al., 2017) and has been linked to interdependence and couple coping approaches (Lewis et al., 2006; Rogers et al., 2016) showing relationships of trust, good communication and coming to terms with both partners' HIV-positive status as important factors for improving the couple's health through good adherence. Yet, as Conroy and colleagues showed, not all couples benefitted from the seroconcordant status; for some, the status was a reason to quarrel (2017). In the Malawi study, few MSW on ART spoke about the wife sleeping around or the relationship breaking up; the vast majority viewed the same serostatus as a strength and help in coping to live with HIV and staying engaged in the treatment program.

For men on PrEP in Eswatini, having a partner on ART, i.e. living in a serodiscordant relationship and being able to take pills together was viewed as supportive. In Uganda this has

been reported "as a strategy to overcoming potential relationship conflicts" (Berner-Rodoreda et al., 2020c) based on (Nakku-Joloba et al., 2019, Ware et al., 2012). Men could have made a different choice, yet decided to stay with the seropositive partner and to share the responsibility for children. This behavior also shows a caring nature of HIV-negative men which is often not reported about as Mitchell and colleagues point out in a Papua New Guinea study (Mitchell et al., 2019). *Figure 21* illustrates the strengths of serodiscordant relationships (PrEP) and seroconcordant relationships (ART).

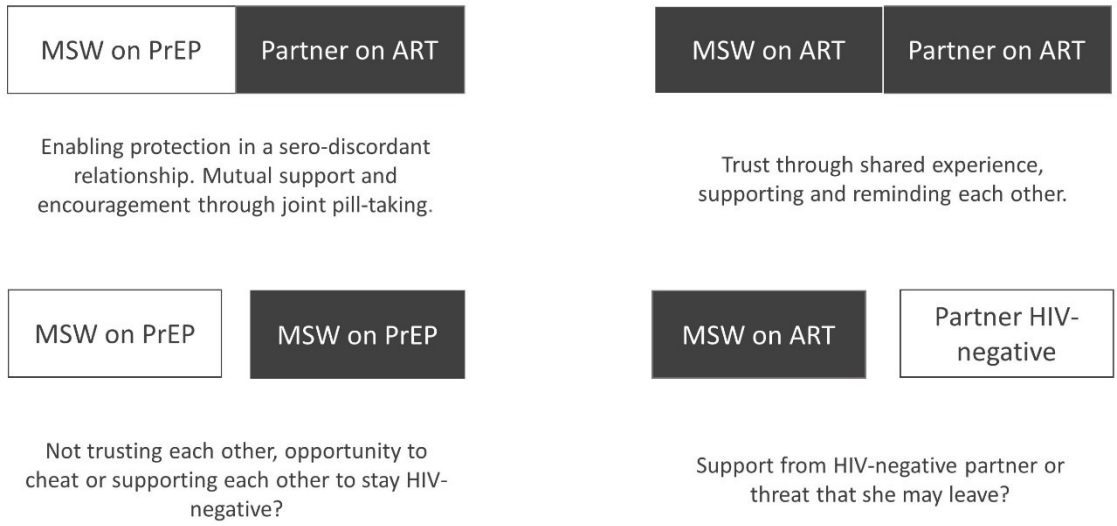

Figure 21 Same or differing serostatus with repercussions on trust and support
Legend: Gap between partners denotes uncertainty of whether or not one can trust the partner

The situation became less clear for MSW on PrEP with a partner on PrEP or for MSW on ART with an HIV-negative partner, see bottom row of *figure 21*. MSW on ART with a serodiscordant partner expressed gratefulness for the loyalty of the partner and uncertainty whether the partner may leave them thus feeling less confidant than having a partner of the same sero-status despite reporting mostly positive reactions from the HIV-negative partner and experiencing often the same support of being reminded to take the ARV pills. The uncertainty in serodiscordant couples of how to interpret the negative partner's serostatus and whether serodiscordance calls for a divorce is also highlighted in another Malawian study (Kumwenda et al., 2018). In Uganda, interpretations of serodiscordance ranged from religious beliefs to beliefs in immunity and hidden infections (Bunnell et al., 2005). Despite a time-lapse of more than 15 years, interpretations have not changed markedly as reactions in the men and ART study showed calling for more education on the phenomenon of serodiscordance.

For MSW on PrEP with a partner on PrEP, views ranged from welcoming the idea to thinking that the partner may cheat; thus, for some MSW, independent women's behavior was seen as a potential threat. Wariness and mistrust towards female partners taking PrEP has also been reported by young MSW in South Africa (Hannaford et al., 2020). A PrEP study with Kenyan and Ugandan youth showed similarly ambivalent notions ranging from support

to suspicion (Camlin et al., 2020). The enrage of a middle-aged man about his wife taking PrEP behind his back in the Eswatini study was linked to her secretive behavior, thus interpreting the act as one of mistrust and a threat to the male position as head of the family. Other MSW were ambivalent about the partner taking PrEP secretly, seeing advantages for the partner but also feeling hurt. Honesty in the relationship was highly valued by MSW on PrEP with most MSW interviewed revealing their pill-taking to their partner irrespective of age. Thus, both studies highlighted the importance of men's social network and reference groups, which should be considered for improved service delivery as will be expanded on in 4.3.3.

4.3.3. Participants' views of improved service delivery

Both studies showed that reaching MSW through health facilities is not the most promising approach with 41% of ART clients at UFC in Blantyre and less than 30% of PrEP users in Eswatini being male (Berner-Rodoreda et al., 2020c). Health facilities have been described as gendered spaces in East and South African studies (Camlin et al., 2016; Leichliter et al., 2011).

Participants in both studies proposed education for MSW through community gatherings called for by the village headman or chief, i.e. using people of authority to engage men. Further suggestions were to work through local institutions (workplaces, NGOs, bars, churches, schools, sports facilities) where men can be found, to conduct peer education as men would listen more to other men, or to use public and social media for reaching men. The proposed strategy of offering food and gifts for men is not restricted to Eswatini and Malawi; it is being trialed in a South African study with the aim of enhancing testing and linkage to treatment (van Rooyen et al., 2019). The salient concern in the Eswatini study to educate communities on the difference between PrEP and ART in order to reduce stigma exposure for PrEP users also emerged from other studies in East and Southern Africa (Jani et al., 2021; Mack et al., 2014b; Muhumuza et al., 2021; Van der Elst et al., 2013). The general advice by some PrEP stakeholders that community approaches for men should be based on male preferences and not on an assumption as to what men may like should be heeded: not all men enjoy community meetings as the story of men disappearing to the toilet and never returning for a community meeting on health illustrated.

In both studies, MSW were sharing information with others when socializing or talking to partners, friends and colleagues – a social dimension of MSW that could be utilized in form of peer education to reach other MSW. PrEP peer education has been used with key populations (Irungu and Baeten, 2020) and has shown to have positive outcomes for ART adherence in Ethiopia, if combined with ART reminders (Hussein et al., 2020). Involving MSW to decide on the most promising approaches to be taken forward would ensure that client-centered and male-friendly services are offered.

Modifications to the current ART service delivery model by proposing community alternatives ranging from clubs to home-based and community delivery as suggested by participants in the Blantyre ART study were also reflected in a number of East and Southern African studies (Dorward et al., 2020; Iwuji et al., 2020; Kebaabetswe et al., 2020; Mbalinda et al., 2020; Nardell et al., 2020; Venables et al., 2019), as were suggestions by participants to increase efficacy for facility-based health service delivery and to reduce waiting periods (Iwuji et al., 2020; Nhassengo et al., 2018). Yet, making facilities male-friendlier by adding games or refreshments or novel delivery models such as using a credit card dispenser system seemed unique to the Blantyre study. Learning from ART differentiated delivery models while incorporating regular HIV-testing has been suggested for PrEP service delivery in a recent review (O'Malley et al., 2019); models ranging from clinic-, pharmacy- to home-based delivery have been explored for *MSM* (Hillis et al., 2020). For MSW on PrEP and ART, discreet and convenient services such as collecting the pills from a pharmacy or dispenser or private services in the community were put forward as options. A recent scoping review (Long et al., 2020) concluded that differentiated service delivery models in sub-Saharan Africa despite few rigorous comparisons with conventional clinic-based care and despite a lack of thorough evaluations are likely to be equivalent to facility-based approaches in terms of adherence and VLS. The originally planned second phase to the Malawi ART study in developing prototypes of alternative service delivery with men in the communities which could not be realized due to COVID-19 should be conducted not only for ART but also for PrEP. Involving MSW not yet engaged in the services would also ensure that the services appeal to those not yet reached.

The preference of MSW across both studies for wider access to PrEP and ART with more health centers and community health workers offering services is mirrored in other PrEP studies as a strategy to engage more men (Muhumuza et al., 2021; Muwonge et al., 2020); in another recent ART study in Malawi among men, differentiated service delivery and longer opening times were called for (Nyondo-Mipando et al., 2021). The wish by male participants in both the UFC Malawi ART and Eswatini PrEP studies for less frequent clinic appointments, injections or longer lasting agents to improve adherence and reduce facility visits has also been reflected in the Malawian study of Nyondo-Mipando and colleagues (2021). Offering MMDD to all clients could be one solution to reduce frequent visits. This, however, does not work for PrEP which needs a three months' check for one's HIV-status. Introducing PrEP as either event-driven or longer lasting (Muhumuza et al., 2021) may be a more sustainable solution for male clients. Additional solutions were presented by respondents in Eswatini in offering PrEP to anyone who is HIV-negative thus de-linking it from risk, or making it compulsory for anyone HIV-negative which might decrease stigma but would clearly constitute a human rights violation.

4.3.4. Amending Haberer's Table of Differences in light of MSW's experiences of PrEP and ART

Based on the similarities and differences of MSW's experience of PrEP and ART in the Eswatini and Malawi study settings, I have amended the table based on Haberer's findings (Haberer et al., 2015) by the following categories: „trust and relationships", "sexual behavior after pill-taking", "education and information" with further additions to the categories "benefit" and "service delivery", see *table 27*. The extent to which these additional points are gender- and location-specific will have to be assessed in future studies on PrEP and ART.

Table 27 Additional ART and PrEP differences emanating from Malawi and Eswatini studies, based on (Haberer et al., 2015) and figure 2

	ART in Malawi	**PrEP in Eswatini**
Benefit	Effective treatment - preventing onset of AIDS; prolonging life and restoring or maintaining health; **becoming non-infectious*.**	Effective prevention tool against HIV; **does not disturb sexual relations; can be combined with alcohol consumption; tool to overcome serodiscordance; creating ease in relationships.**
Psycho-social concerns	Risk of stigma and discrimination; judged to have been promiscuous; suffering from depression, **side-effects; re-evaluating future plans; implications of daily pill-taking and frequent clinic visits**	Risk of being confused with a person living with HIV and experiencing stigma; risk of being seen as promiscuous; **consideration of side-effects; implications of daily pill-taking and frequent clinic visits**.
Relationships and Trust	**Reliance on practical and moral support from family for access to and retention on ART; selective disclosure to trustworthy people (mainly family, partner and good friends); greater ease with seroconcordant partner on ART; wariness of serodiscordance.**	**Rationale for uptake of PrEP closely linked to distrust in partner(s)' HIV-status; sharing information about PrEP with partner, friends and colleagues; moral support from serodiscordant partner; ambivalent attitude towards seroconcordant partner on PrEP.**
Sexual behavior after pill-taking	**Range of sexual behavior from less or no sexual activity for fear of passing on virus to forgoing ART for better sexual performance.**	**Range of sexual behavior yet no trend of increasing number of sexual partners; condom decrease for various reasons including the desire to procreate.**
Education/ Information	**Clinic- and community-based, yet detailed ART knowledge of ARV substances and benefits of VLS in terms of non-infectiousness unknown to MSW; need to strengthen media and community-based education.**	**largely clinic-based with some media and community education, yet hardly reaching MSW. Treatment as prevention largely unknown to PrEP users in serodiscordant relationships; need to strengthen media and community-based education.**
Service Provision	Mostly clinic-based; **perceived need for community-based and male-friendly services**	Study- or clinic-based; **perceived need for community-based and male-friendly services**
*mentioned by stakeholders, not by MSW on ART Note: Bolded text is based on qualitative findings from the Malawi and Eswatini study settings.		

4.3.5. Stigma, the life-course and differing masculinity ideals

HIV was depicted in both studies as associated with death, prostitution and promiscuity – particularly the association with promiscuity has been held responsible for much fear of societal exclusion and stigma in other Sub-Saharan African countries (Akatukwasa et al., 2021; Mbonu et al., 2009) and in other world regions (Chan et al., 2009; Ferraz et al., 2019; Yeo and Chu, 2017). Linking HIV infections with early death was also depicted in a recent study on adolescents in Uganda (Ashaba et al., 2019). Studies on ART perception have become rare in recent years, yet the Malawi study like some older studies in Africa highlighted a negative view of ARVs among those not on ART (Atuyambe et al., 2008; Fox et al., 2010). Stigma was portrayed in starker terms in the Malawi ART than the Eswatini PrEP study with communities in and around Blantyre described as showing high levels of stigma and exclusion towards PLHIV and predominantly negative community attitudes towards ARVs (Berner-Rodoreda et al., 2021b) which seemed surprising given the health benefits of ART.

MSW on ART described various forms of stigma permeating all levels of SEM which largely corresponds with findings from other studies and literature reviews (Hendricks et al., 2021). Anticipating stigma took precedence over other forms in the Malawi study (Berner-Rodoreda et al., 2021b); some MSW also experienced enacted stigma and discrimination from an employer, friends, neighbors or family, yet very few self-stigmatized to the extent of withdrawing from others (ibid). Hendricks and colleagues do not explicitly mention self-stigma, but describe anticipated stigma at the individual level, enacted stigma at the interpersonal level and at the facility level through other patients or health personnel (2021), the latter, by contrast, was not mentioned by MSW in Blantyre.

Hendricks and colleagues refer to masculinity only in connection with community-based stigma and do not address the life-course; conversely, in the Blantyre study, stigma, masculinity and the life-course intersected in the perception of male PLHIV with older men's social standing mitigating against stigma considerations (see *figures 11 and 12*). A highly stigmatizing environment for younger men may be one factor for their lower levels of VLS as shown in quantitative data. The life-course played an important role in the context of stigma for the stages of men's own life including pre- and post-ART and "age-related changes in men's sexual life and standing in society" (Berner-Rodoreda et al., 2021b).

The life-course concept has in recent years been used in HIV prevention highlighting testing barriers for older populations (C. Johnson et al., 2021; Mojola et al., 2015); the Blantyre ART study shows how societal expectations of (young) men's virility clashed with the way younger men living with HIV were viewed. Acting on those ideals by forgoing ART temporarily in order to have more energy for sexual intercourse (Berner-Rodoreda et al., 2021b) ran the risk of higher VL results and poorer health outcomes. In a similar vein, Ganle noted how

Ghanian youth wanted to live up to hegemonic masculine ideals which ran counter to HIV health prevention strategies (Ganle, 2016); conversely, studies on men and ART in South Africa and Nigeria showed men reducing their sexual relations or the "rounds" of sexual intercourse as an adapted male strategy thus redefining masculinity (Mfecane, 2008; Okoror et al., 2016).

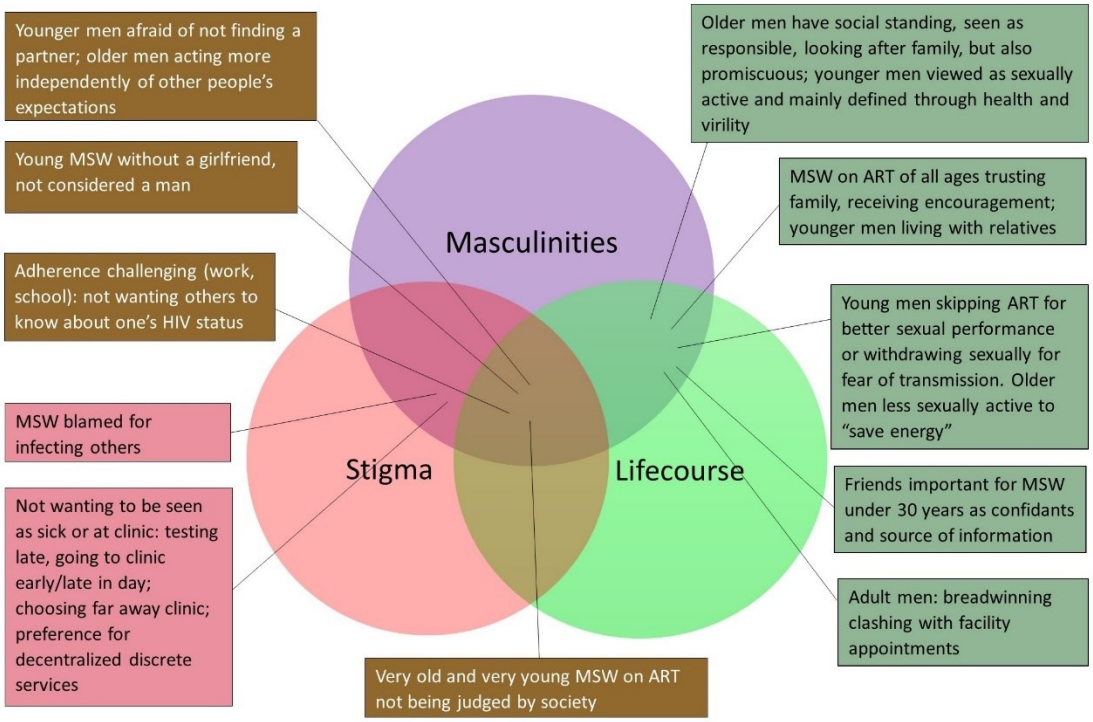

Figure 22 ART: Intersectionality of masculinities, stigma and the life-course in Blantyre, Malawi

Some middle-aged and older men in the Blantyre study accepted the new situation by reducing sexual activities and procreation in an attempt to maintain their energy levels and health. In contrast to young men, who were supposed to be sexually active to be considered men, middle-aged to older men in the Blantyre study could play the claviature of diverse masculinity notions, and uphold social standing against virility (Berner-Rodoreda et al., 2021b) or disregard certain societal expectations towards them as they had already proven themselves through their work or private achievements (having a family and children). While both, young and older men had to cope with community-induced stigma, for younger men with less social standing the danger to not find a partner, to be identified as a PLHIV and shunned seemed to be more pronounced and could lead to different responses from non-disclosure, forgoing ART intermittently to social withdrawal with possible consequences for ART adherence and retention. The intersectionality of (HIV- or masculinity-induced) stigma, masculinity considerations and the life-course is illustrated in *figure 22*.

In the Eswatini PrEP study, MSW were united by their fear of an HIV infection and the desire to be protected as their main motive for taking up PrEP. While fear is not usually seen as a masculine expression, it shows how stigma and masculinity intersect in the desire not to appear "sick". By MSW equating sickness and "unclean" blood with a positive HIV-status and

with thwarting the realization of one's life vision, PLHIV were perceived as different with fewer opportunities and thus in Goffman's terms "discredited" (Goffman, 1963, p. 4). Self-stigma in terms of self-blame was not an issue for MSW on PrEP which may be related to their HIV-negative status. Yet while MSW on PrEP in Eswatini tested and took up PrEP in order to avoid HIV and HIV-related stigma or to prevent an envisaged lowering of their quality of life, much in the same way as *MSM* in Brazil used post-exposure prophylaxis (Ferraz et al., 2019), taking pills daily carried its own stigma at the interpersonal, facility and community level. The most prevalent forms of stigma emerging from the PrEP study were stigma by association – being confused with PLHIV by taking very similar pills, which rattled just like ARVs – and anticipated stigma: being seen by others at the health center or while taking pills and envisioning to be mocked and ridiculed for taking PrEP. The concern of PrEP users to be mistaken for PLHIV on ART transcends gender and sexual orientation and is reflected in studies in Africa among adolescents and young people (Jani et al., 2021; Muhumuza et al., 2021) as well as among women, female sex workers, MSM, fishermen and serodiscordant couples (Mack et al., 2014b; Van der Elst et al., 2013).

The second form of stigma is predominantly portrayed in countries with non-generalized epidemics, particularly in US studies: being seen as promiscuous or "reckless" (Calabrese and Underhill, 2015; Eaton et al., 2017; Golub, 2018). This emerged as a minor issue for MSW on PrEP in Eswatini (Berner-Rodoreda et al., 2020c); in fact, it was mainly put forward by "outsiders" (female stakeholders and PrEP providers). By contrast, a study of young women and their male partners in Tanzania reported the fear of being seen as promiscuous (Jani et al., 2021) which may be due to the gendered nature of how promiscuity is viewed with potentially more suspicion directed towards women and MSM than towards MSW for whom expressions of virility may act in their favor when they are HIV-negative. As we have seen in the Malawi study, however, blame for men and women did not differ widely on the issue of promiscuity. The labelling of PrEP users as "Truvada[14] Whores "(Calabrese and Underhill, 2015; Eaton et al., 2017) and PrEP pills as "slutty pills" (Dubov et al., 2018) was not mentioned in interviews in Eswatini, yet this may also be due to the fact that PrEP was a relatively new and unknown intervention for communities in Eswatini; by offering PrEP to all with a heightened risk of HIV infection, the Government of Eswatini took efforts to avoid labelling clients as members of key populations or to restrict PrEP to them. While the PrEP study did not provide the same amount of detail on how younger and older men were viewed, PrEP was seen across respondent groups as primarily a prevention tool for youth and adolescents. Older men (for some respondents these were men above 45, for others, men above 60 years of age) were

[14] Truvada is the brand-name for a combination pill of TDF and FTC which is approved for PrEP

either thought not to be interested, or not in need of PrEP as they were regarded as no more sexually active despite counter-examples.

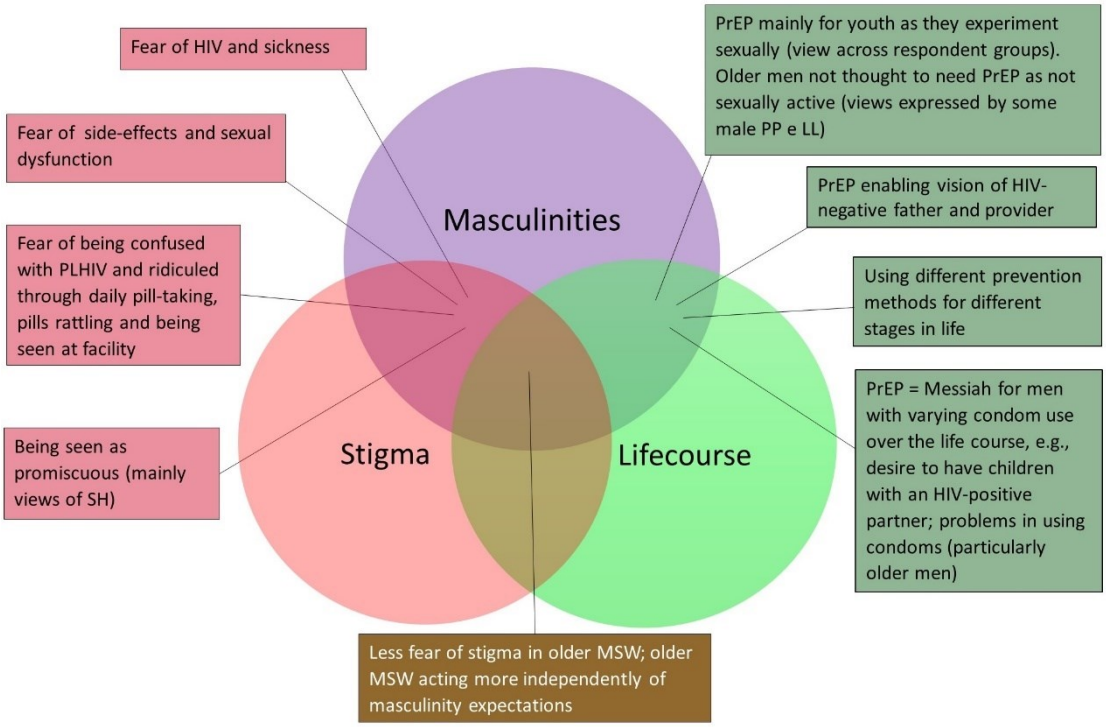

Figure 23 PrEP: intersectionality of masculinities, stigma and the life-course in Eswatini
legend: PP: PrEP provider, LL: Local leader, SH: stakeholder

PrEP was linked to life's circumstances ranging from young men experimenting with relationships with or without condom use, to guarding against seroconversion in HIV-discordant couples to middle-aged and older men having problems with condom usage. *Figure 23* illustrates the intersection of stigma, masculinity and the life-course and distinguishes between men's own perspectives and those of the community or other respondent groups.

In both the ART and the PrEP studies, stigma, masculinities and the life-course intersected with men's experience of ART and PrEP (*see figures 11, 15, 22 and 23*). Masculinity norms and expectations and the anticipation and experience of stigma and of living in a stigmatized environment expressed itself in different masculinity responses at all levels of SEM, some in line with societal expectations towards men and the anticipation of stigma, some offsetting these expectations (see *table 28*). Disclosing the HIV-status to others despite the danger of losing social standing or possibly being mocked or discriminated against, caring for friends, family and colleagues and encouraging them to test for HIV, being faithful when others might expect a more virile behavior can be regarded as transformative[15]. A study on HIV disclosure in Ethiopia found that men are more concerned about their partners than women and speculated that this may be due to men being blamed for passing on the virus to their partner (Deribe et al., 2009). MSW on PrEP could have divorced an HIV-positive partner,

[15] masculinities which do not wield power over women and, in the health context, do not identify with masculine norms which negatively impact on men's health seeking behavior

yet took PrEP to stay safe in the serodiscordant relationship thus showing a caring attitude towards the partner. While it was mostly older men in both studies who behaved differently to hegemonic masculinity ideals, some younger men also mentioned being unconcerned about other people's perceptions, did not mind being seen at health facilities or would test with friends. Some HIV-negative MSW did not mind if the girlfriend also took PrEP and would not tell them. Older age might be an important but not the sole contributing factor for transforming masculine ideals and behavior. Different masculinity expressions were also found in the same MSW: drawing on the hegemonic masculine notion of control (telling the partner to collect the pills for him) while mentioning own norms such as faithfulness confidently in front of friends and colleagues.

Table 28 sets out societal expectations towards men, stigma expectations, MSW's masculinity expressions in line with hegemonic masculinities, and behavior which highlights transformative masculinities by underscoring the importance of relationships and one's health irrespective of societal norms and expectations. Transformative masculine expressions are informed by different masculine ideals and slowly changing these normative ideals as depicted in the context of fatherhood in South Africa with changing beliefs and involvement in parenting (van den Berg et al., 2013).

Table 28 Hegemonic and "Transformative" Masculinity Expressions in the ART and PrEP studies

SEM Level	Masculinity norms and expectations	Stigma expectations and expressions	Masculinity expressions in line with masculinity expectations and stigma anticipation	Transformative masculinities
Society	• Virility and multiple partners (ART, PrEP) • Young men without a girlfriend not recognized as men (ART) • Older men seen as more responsible than younger men (ART) and not in need of PrEP (PrEP)	• Men seen as unfaithful and promiscuous (ART, PrEP) • Younger men blamed if living with HIV (ART) • PLHIV excluded and mocked in community (ART) • HIV and ART associated with death (ART, PrEP) • Men (and women) blamed for infecting others (ART)	• Non-disclosure in community and moving when experiencing stigma (ART)	• Sharing HIV-status in community by older men (ART)
Facility	• Not appearing sick or in need of medical help (ART, PrEP) • Clinic visits conflicting with breadwinning (ART, PrEP) • "Shy" to engage with health personnel	• Anticipating stigma through other clients (ART) • Anticipating unfriendly clinic staff (ART) • Anticipating to be viewed as PLHIV (PrEP) • Not wanting to travel with rattling pills (ART, PrEP)	• No time for going to health facilities; missing appointments because of work commitments (ART, PrEP) • Finding excuses at school/work for going to the facility (ART) • Not wanting to be seen (far away facilities, early morning/late evening visits) • Desiring a separate section at clinic for men/young men (ART) • Desiring a separate section for PrEP (PrEP). • Sending wife to collect pills (ART, PrEP)	• Checking up on health without embarrassment (mainly older men in ART study, PrEP) • Asking for PrEP pills without embarrassment (PrEP) • Asking for travel support from others to meet appointments (ART) • Speaking to health personnel and finding solutions to transport, side-effects or other problems (ART)

Relation-ships	• Having a family/children (father) (ART, PrEP) • Being in control of relationship: Partner expected to disclose HIV-status (ART) or taking PrEP (PrEP) • Acting on virility and using opportunities to engage in sexual intercourse (PrEP)	• Fear of being rejected (ART) • Afraid to take ART/PrEP pills in front of others • Being confused with PLHIV or seen as promiscuous (PrEP)	• Providing for the family (ART/PrEP) • Desire for HIV-negative child (PrEP) • Expecting support from family (ART) • Not disclosing HIV status to friends and potential partners. (ART) • Not taking PrEP openly in order not to be confused with PLHIV (PrEP) • Wanting to divorce partner for non-disclosure or assumed transmission (ART) or not revealing PrEP (PrEP) • Having concurrent partners (ART, PrEP) • Not revealing that one is taking PrEP in order not to create distrust or negative image in relationship (PrEP) • Interrupting ART for better sexual performance (ART) • Problems with condom use (PrEP)	• Caring for family‘s wellbeing (ART, PrEP) • Talking to children about HIV and PrEP (PrEP) • Disclosing to family members, friends, neighbors, colleagues (ART, PrEP) • Accompanying friends/partner to test (ART) • Abstaining from sexual intercourse out of consideration of not wanting to transmit the virus (ART) • Not using condoms because of wish of partner (PrEP) • Speaking to friends about being faithful to partner (ART, PrEP) • Not leaving HIV-positive partner (PrEP) • Motivating partner to test (PrEP) • Talking to partner about taking PrEP (PrEP) • Greater ease of mind for both partners on having sexual intercourse and being safe (PrEP)
Indivi-dual	• Appearing healthy • Gaining social standing with age and responsibilities	• Anticipating to be recognized as (ART) or confused with PLHIV (PrEP) • Anticipating to be mocked or discriminated against by others (ART and PrEP) • Self-stigma (ART)	• Not testing before one is sick to keep up image of strong man (ART) • Stopping ART when feeling healthy (ART) • Desire to be healed (ART) • Stopping PrEP when side-effects interfere with everyday life (PrEP)	• Testing to know status (mainly community men, ART) • Testing to stay healthy (PrEP) • PrEP as additional protection (PrEP) • Not concerned about the perception of others, taking pills in public, travelling with rattling pills (mostly older men: ART, PrEP)

4.3.6. A critical reflection on Connell's hegemonic masculinity framework

Connell's concept of hegemonic masculinities (see 1.3.1) has been widely applied in the field of Global Health. It provided a rationale for men's poor health seeking behavior (Courtenay, 2000; Garfield et al., 2008; Seymour-Smith et al., 2002) but also opened up solutions by underscoring men's "agency, autonomy and self-reliance" (Sloan et al., 2010, p. 799), addressing men's risk-taking behavior particularly in the field of HIV (Bowleg, 2004; Bowleg et al., 2011; Brown et al., 2005; Ganle, 2016; Morrell et al., 2012, p. 23; Nyanzi et al., 2009; Simpson, 2007) and raising awareness of men's needs and priorities among health care workers (Siqueira et al., 2014). My own approach was based on the same considerations.

Connell provided a framework for diversity in masculinities and femininities rather than focusing on a "single normative male sex role" (Nascimento and Connell, 2017, p. 3979). The two study settings show this diversity in masculinities practiced and endorsed by men: from wanting to appear healthy with a desire for both discrete and discreet health and HIV services; being a breadwinner and therefore having little time for clinic visits, showing autonomy in decision-making, not caring about infecting others, being able to divorce the partner, having social standing, being the head of the family and wielding authority over the partner to showing responsibility and support for partner, family and friends, being faithful and considerate, respecting the wishes of the partner and displaying a desire not to transmit the virus to being afraid of the partner and afraid of losing the relationship. Both case studies showed older men with social standing as less influenced by societal expectations and able to draw on more masculine ideals and to elevate one ideal over another (Berner-Rodoreda et al., 2021b), and younger men as more peer pressured to show virility (Berner-Rodoreda et al., 2020c, 2021b) and more stigmatized if a virile life-style led to an HIV infection (Berner-Rodoreda et al., 2021b).

Situating the hegemonic framework within patriarchy with men wielding power over other men and over women (Connell, R. W., 2005; Connell, 1998; Demetriou, 2001), Connell defined "subordinate masculinities" as "homosexual masculinities"; these were associated with femininities within a Western framework (Connell, R. W., 2005, p. 78), whereas "marginalized masculinities" referred to subordination in terms of class and race in a specific setting (Connell, R. W., 2005, p. 80) yet allowed for adaptations: "Masculinities are configurations of practice that are accomplished in social action and, therefore, can differ according to the gender relations in a particular social setting" (Connell and Messerschmidt, 2005, p. 836). Another category pertained to "complicit" men who may not "rigorously practice the hegemonic pattern" but still benefit from "the patriarchal dividend" (Connell, R. W., 2005, p. 79). Her concept allowed for variance across different settings, yet it did not

address the issue of "a fixed understanding of hegemonic masculinity" (Morrell et al., 2012, p. 25) expressed in one particular society. It is this hierarchical nature of the hegemonic masculinity framework and Connell's claim that "the concept of hegemonic masculinity presumes the subordination of nonhegemonic masculinities" (Connell 2005: 846) that did not seem to sit well with either case study. Both case studies focused on MSW; their sexual relations thus made them unsuspicious of same sex relationships. Those who upheld ideals of fidelity did not seem to view themselves or to be viewed by society as "subordinate" to men who held up ideals of "multiple partners". The hierarchical nature of hegemonic masculinities seemed particularly at odds with the PrEP findings. PrEP, in theory, could be a prime tool for living up to hegemonic masculine ideals as it creates the opportunity to act on notions of virility, freedom and autonomy and does not necessitate informing the partner of using a prevention method, yet almost all interviewed MSW on PrEP in Eswatini informed their partner of taking PrEP with many upholding ideals such as honesty, fidelity and caring for the family or future. Are we to regard all of these men as "complicit"? While most men can be regarded as benefitting from being men, this does not help us greatly in understanding a hierarchical order among men and the contradictory notions associated with hegemonic masculinities even within the same society.

Connell's ideas were heavily influenced by psychology, particularly by Freud, the Oedipus complex (which she drew upon in analyzing men's sexuality and gender relationships), Freud's foresighted musings about masculine and feminine behavior not being restricted to the respective biological sex and Freud's ideas of a "complex and fragile construction" of reaching adult heterosexuality in men (Connell, R. W., 2005, p. 9.11). While Connell describes the psychological differences between men and women as negligible (Connell, R. W., 2005, p. 21), she still seems to hold on to "masculine" and "feminine" domains and characteristics underpinning hegemonic masculinities:

> Abolishing hegemonic masculinity risks abolishing, along with the violence and hatred, the positive culture produced around hegemonic masculinity. This includes hero stories…; participatory pleasures such as neighborhood baseball; abstract beauty in fields such as pure mathematics; ethics on sacrifice on behalf of others. That is a heritage worth having, for girls and women as well as boys and men. (Connell, R. W., 2005, p. 233)

These statements seem startling in singling out supposedly "male" domains and characters and, in my view, ignoring that history (although written by men and one may assume with a male bias) has produced heroines and politically powerful women from China in 1500 B.C. via Egypt with female pharaohs and outstanding female mathematicians, powerful women in the Greek and Roman Empires to recent centuries of women leaders around the globe; the ethics of sacrifice can also hardly be restricted to men with female martyrs and heroines like Jeanne d'Arc. The view that neighborhood group sports should be seen as a hegemonic male domain

could be contested in many locations nowadays, yet may have appeared so at the time of Connell's writings on hegemonic masculinities in the 1980s and 1990s thus showing that supposed gender domains are prone to change over time.

Speaking about US politics, Connell sees hegemonic masculinity based on "power-oriented, ruthless and brutal men" (Connell, R. W., 2005, p. 251). Collier critiqued Connell's theory on the basis that hegemonic (negative) characteristics are only applied to men when the same characteristics apply to women (Collier, 1998, p. 20) thus problematizing two decades ago the gender binary on which the model is built (Collier, 1998; Demetriou, 2001). This critique was acknowledged by Connell (Connell and Messerschmidt, 2005), who mentions some individual powerful women like Condoleezza Rice and Margret Thatcher, but does not seem to associate negative power-attributes with women. This begs the question: are we speaking about masculine and feminine ideals or norms (acknowledging that some espouse the norms of the opposite sex) or are we speaking about a difference in scale in how men and women act, i.e. social practice? Scholars have critiqued Connell's concept of hegemonic masculinity on this blurriness - denoting normativity while simultaneously building on social practice (Beasley, 2008; Flood, Michael, 2002; Hirsch and Kachtan, 2018).

Connell's gender model is concerned with power, production (gender divisions of labor) and cathexis (emotional attachment, which for Connell is almost exclusively discussed in terms of sexual relations[16]) (Connell, R. W., 2005, p. 74). The hegemonic framework is based on dominance (of heterosexual men over homosexual men and over women) (Connell, R. W., 2005, p. 74.78), yet Connell's own examples show working class Australian men willing to engage in housework and not minding the wife's higher salary thus showing a more egalitarian attitude which I would see as transformative and which sits uneasily with a male dominated power and division of labor model which ascribes paid work to the male partner.

The PrEP and ART case studies revealed that while women were regarded as better health care seekers than men in terms of visiting health facilities and better informed about ART and PrEP, both gender groups could be promiscuous, and women could also wield power over men: instilling fear in them, leaving or divorcing the male partner, cheating on the partner or telling him openly that one did not trust him. Empirical evidence contradicting dominant perceptions of male behavior has been noted in other studies (Allen, 2003; Bowleg, 2004; Devries and Free, 2010). These examples underscore the complex "situationality" of male and female social practice.

[16] Her use of the term "fuck" for sexual intercourse throughout the book is disconcerting in this regard – it could be interpreted as a statement that men do not seek emotional attachment when they have sexual intercourse which seems to stereotype men as not investing in relationships.

I am not negating that women in many countries have been disadvantaged and struggle to enforce their rights in many spheres of life such as in Eswatini (Zigira, 2000), where even recent legal reforms of married women's rights to property and to be treated legally equal to their husbands (Mavundla et al., 2020) will likely take time before full gender equality is reached. The situation in Malawi is slightly different, especially in the Southern Region, the area of study, where ethnic groups tend to be matrilineal, with property and other civil rights bestowed to women (Johnson, 2018a, 2018b; Mwambene, 2005). The focus of the two case studies was, however, not to examine men's positions from women's standpoints but to examine MSW's experience of PrEP and ART in relation to masculinity issues. In this regard, qualitative findings in Malawi and Eswatini revealed heterogeneity in MSW's behavior, preferences and choices, which were informed by the interplay of many factors: societal expectations towards men and communal beliefs about stigma, age and the life-course, their relationship status including seroconcordance or serodiscordance, peers and reference groups, experience with health facilities, own beliefs and their own understanding and knowledge of ART or PrEP. *Table 28* reflects this diversity, yet where to place "caring for others" is a matter of debate. Should it be seen as a hegemonic or an alternative ideal? Connell elucidates that hegemony is not solely based on negative attributes and actions:

> Most accounts of hegemonic masculinity do include such "positive" actions as bringing home a wage, sustaining a sexual relationship, and being a father. Indeed, it is difficult to see how the concept of hegemony would be relevant if the only characteristics of the dominant group were violence, aggression, and self-centeredness. Such characteristics may mean domination but hardly would constitute hegemony—an idea that embeds certain notions of consent and participation by the subaltern groups. (Connell and Messerschmidt, 2005, p. 841)

This raises the question whether hegemonic masculinities can incorporate contradictory terms and ideals such as "caring for others" and "self-centeredness". With wide ranging masculinity ideals in both case studies, who defines what hegemonic masculine ideals should consist of? Polygamy can be seen as a hegemonic ideal in Eswatini with the King endorsing and practicing it. Why then would men confidently and openly share with other men in a group situation that they were faithful and their partner cheated on them? In the context of an Australian study on rugby players Moller noted that

> these spheres of lived experience are highly diverse but… the concepts of hegemonic and hierarchical masculinities do little to help researchers understand that diversity and complexity. Indeed, I think they reduce our capacity to understand the ways in which the performance of masculinity may be productive of new socio-cultural practices, meanings, alliances and feelings. (Moller, 2007, p. 275)

Connell states in the introduction to "Masculinities" that discursive approaches highlight "situationally specific choices from a cultural repertoire of masculine behavior" (Connell, R. W., 2005, p. xix), yet dismisses situational choices for their lack of addressing

inequality, i.e. for not being linked to patriarchy and power relationships. This is a strong argument yet a balance between a power-related framework which did not seem helpful in understanding men's ART and PrEP choices and a situation-specific framework which is not as compelling in terms of power may need to be reached. Hirsch and Kachtan expanded on the idea of a "cultural repertoire" as an alternative concept which can incorporate contradictory notions such as "physical strength" and "autonomy" as well as "discipline" and "self-control" (Hirsch and Kachtan, 2018, p. 702). A cultural repertoire is adaptable and flexible and can draw on notions, norms, concepts, and "strategies of action" (Swidler, 1986). The cultural repertoire "allows to consider masculinity both as a normalizing cultural ideal (or set of ideals) and as a relational and contextual social practice, without reducing it to either" (Hirsch and Kachtan, 2018, p. 689). I have further adapted and visualized the cultural repertoire in *figure 24*.

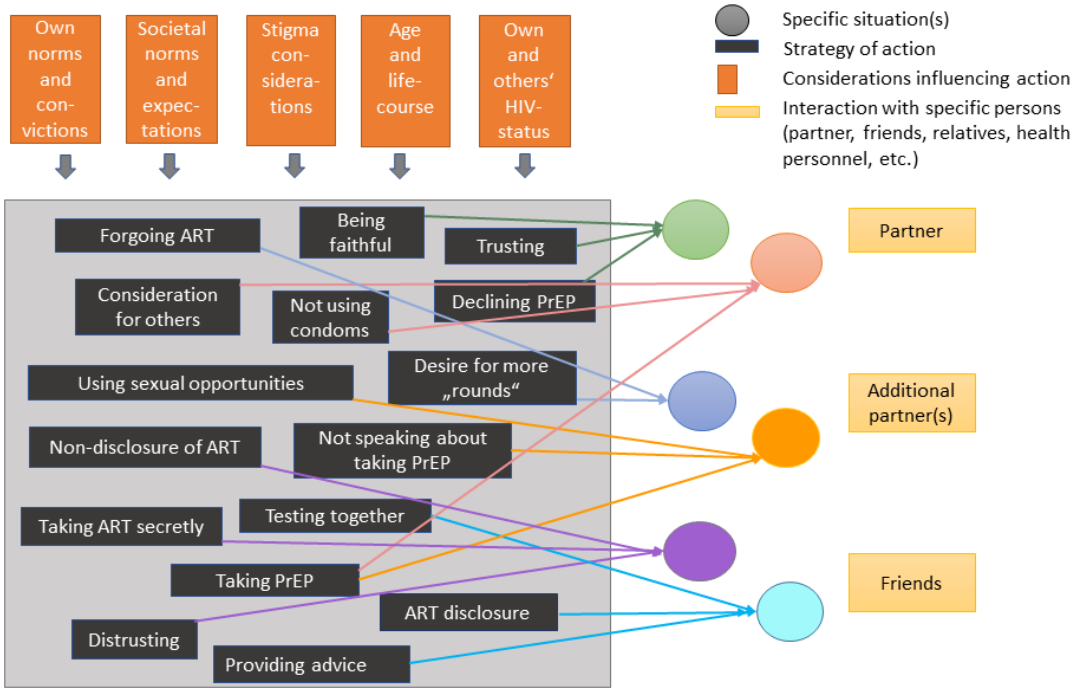

Figure 24 Cultural repertoire showing situation specific selections

The pool stands for the strategies of action (many more could be added) and is informed by ideals but also by possible restrictions: societal expectations in terms of masculinities (femininities) and stigma considerations, own convictions, own and partner's HIV status as well as one's age and life-course would be factored into men's decisions on how to behave and act. Interactions with friends can vary from not trusting the friend to keep a secret and therefore not disclosing one's HIV-status to sharing one's status with a view to supporting the friend. Situations can thus vary from friend to friend but also evolve over time within the same relationship as trust builds up as was shown in Malawi among young men. This also applies to PrEP, as we saw in Eswatini with a man who changed his opinion from wanting to

divorce his wife as he viewed her behavior as a threat to his masculinity to seeing the benefits of her taking PrEP. And a particular behavior, e.g. taking PrEP, would have to be interpreted in the specific situation, which could range from the desire to use sexual opportunities when they present themselves to respecting the serodiscordant partner's wish not to use condoms and therefore using PrEP to guard against seroconverting. Forgoing ART could be due to "wanting to do more rounds" thus acting on virility considerations or not having enough supplies when working abroad thus being linked to structural factors or stigma considerations. Some choices may therefore appear to be in line with normative masculine expectations, yet are based on situational selections. I believe this model may help us explore and understand men's actions in particular situations. Taking into account normative and structural considerations, the repertoire can account for changes over time with new "strategies of action" being drawn upon. This allows for societal transformation of masculinities when and if these strategies are selected repeatedly by more than just a few men. Also, this model is not restricted to masculinities; it can be applied across gender groups and societal issues.

4.4. An appraisal of the models employed

4.4.1. Socio-ecological model

My choice of the socio-ecological model (SEM) as the underlying framework was informed by the following rationale:

1) I am convinced that understanding human health-seeking behavior and any meaningful changes to this behavior requires a holistic appreciation of individuals, their hopes and fears, their relationships, the institutions they interact with and the wider society including societal perceptions and policies/laws as structural factors implied in the model (Glanz and Rimer, 2005).
2) The applicability of the same model for both studies facilitated a comparison of findings rather than using an ART- or PrEP- specific model.

Glanz speaks about multi-level influence and reciprocal causation in relationship to SEM (Glanz and Rimer, 2005); I prefer to speak of multi-level interdependent influences on behavior. Human behavior is extremely complex and rarely if ever does A lead to B – rather B may be the result of multiple influences. Health-belief models emerging in the 1950s, stages of change and other stage models and the theory of planned behavior are based on a progression from intention to action (Armitage and Conner, 2000; Brug et al., 2005). They are "psycho-social models" focused on the individual and exclude economic or environmental factors (Janz and Becker, 1984) or exclude the socio-cultural context and are therefore

regarded of limited benefit in understanding human health behavior (Smith, 2012). Moreover, understanding and acting on information are not as closely related as these models would suggest and a so-called "knowledge-behavior-gap" (Sligo and Jameson, 2000) has been shown in various fields of health interventions globally such as cervical cancer screening and HPV vaccinations (Sligo and Jameson, 2000; Wegwarth et al., 2014), clinical practice (Kennedy et al., 2004), or HIV testing and condom use (Meadowbrooke et al., 2014; Shoakena, 2011). Cultural acceptability and practical considerations, the context in which people live and behave including societal norms may influence their decisions in addition to their own norms, knowledge and past behavior.

SEM can be traced to the psychologist Bronfenbrenner (Kilanowski, 2017) who in the late 1970s proposed "the ecology of human development" which he linked to the life-span and "mutual accommodation" of "changing immediate environments" and "larger societal contexts" (Bronfenbrenner, 1977, p. 514). It is interesting to note that in further adaptations of SEM, the life-span idea seems to have become less prominent (Berner-Rodoreda et al., 2021b; Robinson, 2008). While Kaufman (Kaufman et al., 2014) adapted SEM and added to the individual, interpersonal and community level the additional levels of institutional/health systems and structural as separate circles rather than seeing them as part of the community level as depicted in Glanz, I prefer a slight adaptation of Glanz's model in placing an institutional or organizational level above the interpersonal but below the community/societal level as I see the organizational level and structural factors including laws and policies as operating within the context of society not beyond or outside of it.

SEM allowed a comparison between PrEP and ART which showed that both operate at all levels and that decisions such as informing others about one's pill-taking are not only based on individual deliberations or interpersonal relationships but also on the awareness of a law on HIV management or on stigma considerations. Yet, any model will only ever partially represent reality. It seemed at times difficult to draw the line between the various levels. When MSW on PrEP talked about their sexual behavior, the use or non-use of condoms could be seen as belonging to the individual or to the interrelationship level. The consumption of alcohol in both studies was part of cultural festivities (society), a social activity with friends (inter-relational) and a personal decision (individual); having to split a theme into the SEM categories complicated their presentation and seemed artificial, yet highlighted different facets. The same difficulty of findings "overlapping at the different levels of the model" (Muhumuza et al., 2021) can also be seen in Hendrick's recent review where stigma is listed across all levels in the article (not in the presented graph) and disclosure is mentioned at the individual and the interpersonal level showing that the phenomenon is considered at

different societal levels (Hendricks et al., 2021). The cross-cutting issues of masculinity considerations, stigma and the life-course in the Malawi and Eswatini studies further exemplify this point. Nevertheless, I believe SEM is useful in teasing out different aspects of health behavior, as MSW in both studies did not make health decisions in a vacuum: the decisions to take up health services were not just based on a personal perception of need or risk or the quality of this service, distance or transport costs, the friendliness or unfriendliness of facility staff but also on their own hopes and fears, their relationships and support, trust or distrust, the attitudes of peers, the general perception of society of men living with HIV and thus form a spiderweb of factors contributing to MSW's health decisions. The use of SEM has facilitated the comparison between PrEP and ART, brought out nuances of individual, relational, facility-based and contextual aspects of health behavior.

4.4.2. Barriers and Facilitators

Studies on barriers and facilitators are commonplace in health research as the proliferation of articles with these search terms show. They are particularly useful in research linked to implementation as the identification of obstacles and enablers can inform and change health practice as noted by a Cochrane review: "Interventions tailored to prospectively identified barriers are more likely to improve professional practice than no intervention or to dissemination of guidelines or educational materials" (Baker et al., 2010), yet the authors noted the great variety of barriers mentioned.

While I did not use an exclusive barrier and facilitator approach in this dissertation study, barriers and facilitators highlighted areas that can be optimized to make HIV-related prevention and treatment services more relevant for men such as male-friendly facility and community-based service provision or greater involvement of men to reach other men. It should be noted, however, that barriers and facilitators are time-bound snapshots which may change over time. They appear dichotomous yet "a factor perceived as a barrier can be identified as a facilitator at the same time" (Léegaré and Zhang, 2013, p. 132). This was shown with alcohol consumption in the context of PrEP which was seen as a facilitator for initiation (as some regarded daily pill-taking easier than remembering to use condoms when intoxicated); for others, alcohol was a barrier for uptake with concerns regarding the accumulated hepatic effects of PrEP and alcohol. Relying exclusively on a barrier and facilitator approach may be too restrictive and would miss important nuances and ambivalences such as describing the feelings towards a seroconcordant partner on PrEP or a serodiscordant partner for MSW on ART. These feelings were not representing direct barriers or facilitators for starting or continuing PrEP or ART, yet they tell us about gender relationships, trust and distrust and MSW's understanding of serodiscordance and thus

provide important and rich contextual background. I therefore think it is necessary to not restrict the research to barriers and facilitators as going beyond this conceptual model leads to a deeper understanding of respondent groups. Notwithstanding these considerations, I believe that the combination of barriers and facilitators with the four levels of SEM crystallized many important enabling and challenging aspects regarding male-related PrEP and ART uptake, adherence and retention, see 3.3..

4.5. Strengths and Limitations

The comparison of the two mixed/multi-methods case studies from the Southern African region has provided new insights into more nuanced similarities and differences between ART and PrEP, highlighted the importance of masculinity, stigma and life-course considerations and expanded the ART and PrEP comparison published by Haberer (2015). Qualitative data elucidated quantitative findings in both studies. The studies highlighted many similar facilitators, barriers and ideas for new service delivery models from the perspective of MSW who are often not seen as a primary target group for HIV studies (Colvin, 2019). Contrasting the views and experiences by MSW with outsiders (including service providers, stakeholders, and men in the communities) underscored marked differences on issues such as pill-taking, side-effects and sexual behavior. The comparative study is contributing a better understanding of MSW's experience of ART and PrEP with a view to improve service delivery.

Yet, a number of limitations should also be noted: The fact that MSW in Eswatini managed to stay HIV-negative in the country with the highest HIV burden worldwide speaks to their sexual behavior in either restricting the number of sexual partners or taking precautions such as condom usage or being circumcised – thus perhaps being more cautious or responsible than the "average" MSW; but many still spoke about exposure to risk situations and were found to be at risk so that the study still seems to present MSW who are not averse to risk behavior, yet the self-categorization of MSW's relationship status could have been influenced by social desirability factors (see 4.1.2). With only six clinics participating in the Eswatini demonstration study and <30% of PrEP clients being male (n=144), a larger study should be conducted to validate the quantitative findings when PrEP is rolled out nationally.

It should also be noted that the Malawi sample of UFC clients suppressing their VL (n=3,865) is not representative of the general population living with HIV in and around Blantyre or even nationally. National data in 2019 showed a VLS of 88% for both genders (Government of Malawi, 2019). UFC had a VLS of 94%. An essential component of UFC's service provision is adherence support and counselling, tracing clients and offering comprehensive health services around the issue of HIV (testing, nutrition support, STI screening) and, as shown, being flexible in terms of monitoring visits and accepting VL results

from other health facilities. Thus, the presented results are valid only for clients enrolled at UFC in the study period. Also, not all variables of potential interest could be retrieved from the laboratory management system. Relationship or educational status, for instance, were not captured digitally and could thus not be used in the quantitative analysis.

Interviews with men on PrEP and men on ART were conducted in health settings. While it was explained to participants that this is an independent study aimed at understanding clients'/men's perceptions and experiences and ultimately informing the roll out for PrEP and improving services for men on ART, both studies showed some respondents seeing the interviewer as a health worker which may have affected the way clients talked about their experience and challenges. The striking feature that some men on ART with unsuppressed VLs claimed to be consistent in taking ART could be due to drug resistance and all efforts should be made to test clients in this regard; it could also be partly due to wanting to portray oneself in a more positive light, which was mentioned by local researchers as widespread culturally and noted in an earlier Malawian study (Launiala, 2009). This tendency may have been strengthened if MSW thought that the interviewers were somehow linked to the facility as the organization in charge of the facility was mentioned as co-leading the study.

Both studies had committed and experienced research assistants whose skills in probing on difficult issues produced high quality interviews. The way some questions were posed and re-worded over time may have, however, limited the information gleaned. This is a general problem in most qualitative research where interviewers have to react and formulate questions ad hoc. In the PrEP study, a few interviews showed an over-identification with PrEP as a prevention method on the part of the interviewer with a keenness to see more clients taking up and continuing PrEP. This did not seem to alter overall findings, yet may have limited or directed some interviewees' answers. In the Malawi study, the framing of the question about future treatment models may have triggered different answers. While I had asked stakeholders to "dream" of a new treatment model for men and to describe what this would look like, some men on ART were asked how they would design or build a new ART facility for men, thus restricting a new treatment model to a new ART facility. The question had been asked in a more open way during the training, but got narrowed over time in some interviews. This only became evident when receiving the translated transcripts towards the end of data collection and also highlights the importance of receiving translated transcripts as early as possible in the fieldwork phase so that one can re-train assistants on particular issues – this held true for both studies. In retrospect, it is difficult to interpret the extent to which the narrowing of this question may have influenced the replies or was due to MSW being used to the facilities and therefore finding it harder "to think outside the box".

The PrEP and ART studies were not drawn up to be mirror images of each other. The Eswatini study was a demonstration project co-conducted by the Ministry of Health in six nurse-led facilities in one region in Eswatini; its findings while underrepresenting urban areas can to some extent be generalized for the country. In Malawi, qualitative data was collected in the district of Blantyre, yet the facility-related quantitative data was drawn from one public/private "model" facility which is not representative of all health facilities in the district or country as mentioned above. In terms of men's experiences, more probing was conducted on men's sexual experiences in the PrEP study, a theme which was not as prominent in the men and ART study. The men and ART study focused more on general perceptions of men and women living with HIV and men's experiences across the treatment cascade, whereas the men and PrEP study focused on men's risk behavior and experience with PrEP. Future studies should consider the researcher living in the communities of the clients as this would have provided more observational and informal conversational data with MSW.

While Eswatini and Malawi show marked differences in their gross domestic product, the health indicators were similar, and the majority of the population in both countries including MSW use public health services. The differing economies expressed themselves in the domain of transport to the health facility with some men in Eswatini owning cars and in the livelihood domain as access to food was only raised by MSW in Malawi. Participants' economic situation was not a primary consideration in either study and would have to be explored in more detail; the different economic contexts did not, however, appear to lead to vastly different male behavior in terms of visiting health facilities or coping with pill-taking.

4.6. Concluding Remarks

To my knowledge, this comparative multi-methods study is the first study comparing MSW's experience of ART-based treatment and prevention in Southern Africa. It focuses on a target group that is often neglected or mainly studied in terms of serodiscordant couples, yet MSW continue to lag behind in their use of ART and PrEP services. The two case studies provide new insights into similarities and differences in MSW's experience of ART and PrEP in real-life service delivery settings, not cushioned by regular follow-ups through a clinical trial.

High VLS rates could be observed for all clients at UFC in the period of interest with multivariable regressions showing a statistically significant higher relative risk for VLS for men >40 years and a statistically significant lower relative risk for VLS in men on second line and non-standard treatment thus showing age and line of ART treatment as important factors for VLS. In Eswatini, main reasons for initiating PrEP among male clients were the fear of HIV, having multiple partners or a partner of positive or unknown status; main reasons for declining PrEP lay in having to think about the decision, not regarding oneself at risk or being

concerned about daily pill-taking. Male PrEP clients were underrepresented in Eswatini and showed a high attrition rate of 50% within the first 30 days. A statistically significant higher risk of HIV exposure in men between 26 and 35 years could be observed compared to younger men. Men as part of target populations and male clients visiting the clinic for PrEP showed a higher relative risk of HIV exposure and of initiating PrEP. Men who did not have multiple partners had a lower relative risk of HIV exposure and of initiating PrEP.

IDIs and FGDs elucidated quantitative findings and underscored how masculinity considerations, stigma, age and the life-course intersected and impacted on MSW's experience of ART-based interventions. These issues will need to be addressed to facilitate uptake and retention in MSW through longer lasting agents, MMDD and modified service delivery. Ideas emanating from IDIs on removing stigma and structural barriers and creating male-friendly services should be further explored with MSW who are not yet ART or PrEP clients in order to increase the number of male clients for both interventions.

Both study settings also highlight the importance of MSW's reference groups and the significance of trust and distrust for ART and PrEP uptake, adherence and retention and for sharing information with significant others thus playing an important peer role which should be further explored for PrEP and ART programs. The heterogeneity of MSW's masculinity expressions cast doubt on MSW's aspirations to hegemonic ideals per se; more egalitarian frameworks such as the concept of a cultural repertoire should be further explored.

A major difference between the two interventions seemed to be linked to the voluntariness of taking up PrEP compared to having no real choice in taking up ART. This manifested itself in various domains such as the ease of HIV testing or starting and stopping PrEP in Eswatini compared to MSW on ART in Malawi who had to show a life-long treatment commitment. Infection and treatment-related problems such as depression, marring side-effects, pill size and pill burden were only reported in the ART study and highlighted the importance of interacting with supportive health personnel with counselling playing a crucial role for MSW on ART whereas for PrEP users, information was considered more important and counselling restricted to those who wanted to involve their partners. More awareness in communities on the difference between PrEP and ART, on serodiscordance and treatment as prevention would contribute to stigma reduction in the PrEP and ART context and ease the socio-psychological burden on serodiscordant couples.

This study also highlighted the importance of treating MSW as a target group in its own right and not to assume that "one size fits all". Male-friendly interventions may bring us a step closer to ending the global AIDS epidemic within this decade.

SUMMARY

Despite men lagging behind women in accessing HIV services, men who have sex with women (MSW) have only recently become a focus for attaining the global HIV treatment and prevention objectives. Based on HIV testing and daily antiretroviral drugs (during the research period), antiretroviral treatment (ART) and pre-exposure prophylaxis (PrEP) make ART and PrEP users prone to stigma.

This study contributes to closing the gender gap for HIV prevention and treatment services and is, to my knowledge, the first study to explore and compare MSW's ART and PrEP experiences in two Southern African high prevalence settings: ART at the Umodzi Family Centre (UFC), Malawi in 2019 and PrEP at six clinics in the Northwest of Eswatini in 2017-2018. I used a multi-methods convergent study design drawing on clinic data, in-depth interviews with male clients, stakeholders and community respondents (n=72 in Malawi; n=114 in Eswatini), policy documents, and focus group discussions with male participants in Eswatini (n=4). The study focused on enablers, barriers and opportunities for improved male HIV services; it also determined characteristics associated with viral load suppression (VLS) for ART clients at UFC, and with HIV exposure and PrEP initiation for clients in Eswatini between 2017 and 2019.

In Malawi, data from UFC's laboratory data management system showed a VLS rate of 94% for ART clients. For clients on regimens containing dolutegravir, VLS exceeded 97%. VLS below 90% was observed in male clients below 34 years and in clients on second and non-standard medication. Poisson regressions showed the relative risk for VLS increasing with age. MSW on ART with a treatment supporter had a higher relative risk of VLS. Second line or non-standard treatment, by contrast, were negatively associated with VLS. In Eswatini, MSW on PrEP constituted a minority of PrEP clients (<30%) who showed a high attrition rate (50%) at 30 days on PrEP. Poisson regressions for men highlighted age <35 years, relationship status, target population and PrEP as reason for clinic visit as significantly associated with being at risk for HIV. The variables target population and PrEP as reason for clinic visits were positively associated with PrEP initiation. MSW with multiple partners had a higher relative risk of initiating PrEP. MSW named being afraid of HIV, having multiple partners, the HIV-positive or unknown status of the partner as important reasons for initiating PrEP. Thinking about PrEP, non-perception of risk and daily pill-taking were major reasons for declining PrEP.

Qualitative findings in Malawi and Eswatini contextualized quantitative findings. MSW's ART and PrEP uptake, adherence and retention were informed by societal expectations, communal stigma beliefs, age and the life-course, relationship status including sero-concordance or discordance, reference groups, experience of daily pill-taking and health

facilities, combining work and health commitments, own beliefs and understanding of ART or PrEP and thus related to all levels of the socio-ecological model underpinning the study. ART and PrEP facilitators and barriers for MSW overlapped and diverged: the voluntary uptake of PrEP against the necessity to take ART revealed a difference in HIV testing strategies, coping with side-effects and retention, with some intra- and intergroup variations. Masculinity played a key role for appearing healthy and for hopes and fears of enhanced or lowered virility which could affect pill-taking. The intersectionality of masculinity, stigma and the life-course expressed itself in greater anticipated stigma leading to adherence barriers for younger MSW in Malawi, while older men with social standing were viewed more leniently and acted more independently. For PrEP, younger men experimenting sexually were seen as the primary target group. The level of lingering HIV-related stigma was surprising in both settings with MSW afraid of being seen as HIV-positive, and MSW on PrEP desiring separate PrEP services to avoid stigma by association. Trust and distrust were important inter-relational themes: for MSW on ART, relatives played a key role for uptake, disclosure and adherence, outsiders less so. For PrEP, a serodiscordant relationship, problems with condom use, a determination to stay HIV-negative and distrust in the partner acted as incentives; trust was a disincentive, yet, MSW revealed PrEP usage mainly to their partner. MSW in both set-tings shared information with significant others, a peer role that should be further strengthened.

The heterogeneity of MSW's masculinity expressions in both settings, ranging from autonomy, virility, decision-making to faithfulness, caring for partner, friends and family, trusting, mistrusting, disclosing, shyness, secrecy and motivating others cast doubt on MSW's aspirations to hegemonic ideals or on seeing their masculinities as subordinate. The concept of a cultural repertoire from which MSW can draw situation-specific strategies of action should be further explored as an alternative model for understanding male behavior and its potential for transformation.

The study underscored the importance of treating MSW as a target group in its own right and not to assume that "one size fits all". In Malawi and Eswatini, MSW preferred multi-months drug-dispensing and longer lasting agents to reduce facility visits and favored male-friendly facility and community education and services combined with sport and food incentives. For ART, new service options were proposed: ART dispensers, viral load self-tests, community agents; for PrEP, more community information on the difference between PrEP and ART. Treatment as prevention was largely unknown in both settings. In-depth knowledge could decrease stigma and improve the situation for serodiscordant couples. These ideas should be further explored and piloted with MSW to overcome ART and PrEP barriers for male clients and to contribute to accelerating the process of ending the AIDS epidemic for all.

ZUSAMMENFASSUNG

Trotz ihrer selteneren Nutzung von HIV-Diensten wurden Männer, die Geschlechtsverkehr mit Frauen haben (der Begriff Männer wird hier auf diese Gruppe bezogen) erst in den letzten Jahren als eigenständige Zielgruppe für die Erreichung der globalen HIV Behandlungs- und Präventionsziele wahrgenommen. Antiretrovirale Therapie (ART) und Prä-Expositions-Prophylaxe (PrEP) erfordern einen HIV-Test und (im Untersuchungszeitraum) die tägliche und potenziell stigmatisierende Einnahme von antiretroviralen Medikamenten (ARVs).

Die Dissertationsstudie leistet einen Beitrag zur Schließung der Genderlücke für HIV-Prävention und Behandlung und ist meines Wissens die erste Studie, die die Erfahrungen von Männern mit ART und PrEP in zwei Hochprävalenzgebieten im südlichen Afrika vergleicht: ART am Umodzi Family Centre (UFC), in Blantyre, Malawi, 2019 und PrEP an sechs lokalen Kliniken im Nordwesten Eswatinis, 2017-2018. Das multi-methodische Studiendesign umfasst klinikbezogene Daten, Interviews (n=72 in Malawi und n=114 in Eswatini) mit Klienten, Gesundheitspersonal und anderen Interessengruppen inklusive Gemeindevorsteher/-mitglieder, Policy-Dokumente und vier Fokusgruppendiskussionen unter Beteiligung von Männern in Eswatini. Der Fokus lag dabei auf Faktoren, die die ART- und PrEP-Einnahme fördern oder hindern und zu besser geeigneten Gesundheitsdiensten für Männer beitragen. Die Studie sollte darüber hinaus aufweisen, welche Charakteristika von UFC-Klienten in Malawi mit Viruslastsuppression (VLS) und welche Charakteristika von Klienten in Eswatini mit einem HIV-Risiko und der PrEP-Einnahme im Zeitraum 2017-2019 assoziiert sind.

Labordaten des UFC in Malawi wiesen eine VLS von 94% auf, für Klienten auf einer Dolutegravir basierten Behandlung sogar eine VLS von über 97%. Für Klienten <34 Jahre, auf der zweiten oder einer nicht-standardmäßigen Therapielinie wurde eine VLS von unter 90% konstatiert. Poisson Regressionen zeigten folgende Assoziationen mit VLS: das relative Risiko einer VLS nahm mit Alter zu und war höher in Männern mit Behandlungsunterstützung. Die zweite und eine nicht-standardmäßige Therapielinie war negativ mit VLS assoziiert. In Eswatini stellten Männer eine Minderheit der PrEP-KlientInnen dar (<30%), und 50% brachen die PrEP innerhalb von 30 Tagen ab. Poisson-Regressionen zeigten Alter <35 Jahre, Beziehungsstatus, Mitglied einer PrEP-Zielgruppe und PrEP als Grund des Klinikbesuchs signifikant mit einem HIV-Risiko assoziiert. Die letzteren beiden Variablen waren positiv mit PrEP-Einnahme für männliche Klienten assoziiert. Männer mit mehreren Sexualpartnerinnen hatten ein höheres relatives Risiko, PrEP zu initiieren. Nach Aussagen der Männer motivierten sie Angst vor HIV, mehrere Sexualpartnerschaften und der unbekannte oder HIV-positive Status der Partnerin zur PrEP Einnahme. Hauptgründe für die Ablehnung von PrEP waren, genauer über PrEP nachdenken zu müssen, das eigene HIV-Risiko gering einzuschätzen und die Notwendigkeit, täglich Medikamente einzunehmen.

Qualitative Ergebnisse aus Malawi und Eswatini kontextualisierten die quantitativen Ergebnisse. Gesellschaftliche Erwartungen, Stigma, Alter und Lebensphase, Beziehungsstatus mit Serokonkordanz oder -diskordanz, soziale Referenzgruppen, tägliche Pilleneinnahme, eigene Klinikerfahrung, Arbeitssituation vis-à-vis Klinikbesuche, moralische Überzeugungen und das Verständnis von ART oder PrEP hatten Auswirkungen auf Behandlungs- und Präventionsentscheidungen und -erfahrungen von Männern und bezogen sich auf alle Ebenen des sozio-ökologischen Modells, das die Dissertationsstudie untermauerte. Förder- und hinderliche Faktoren für PrEP und ART konnten identisch sein oder divergieren. Die freie Entscheidung für PrEP in Risikosituationen gegenüber keiner wirklichen Alternative zu ART

wirkten sich auf das Testen, die Erfahrung von Nebenwirkungen und die Behandlungslänge aus und zeigten Intra- und Intergruppenunterschiede. Maskulinität spielte für Männer in beiden Studien eine große Rolle: sie wollten gesund wirken and äußerten Hoffnungen und Ängste bezüglich der Auswirkungen von ART und PrEP auf ihre Virilität, was Rückwirkungen auf die Medikamenteneinnahme hatte. Der Grad des anhaltenden HIV-Stigmas an beiden Studienorten überraschte. Männer hatten Angst davor, als HIV-positiv gesehen zu werden, was in Eswatini zum Wunsch nach separaten PrEP-Einrichtungen führte. Die Intersektionalität von Stigma, Maskulinität und dem Lebensverlauf spiegelte sich in Malawi in stärker empfundenem Stigma bei jüngeren Männern wider, die mit ART behandelt wurden und konnte zu Adhärenzproblemen führen. Ältere HIV-positive Männer wurden aufgrund ihrer sozialen Stellung nachsichtiger beurteilt und handelten unabhängiger. In Eswatini wurden junge Männer aufgrund ihrer sexuellen Experimentierfreudigkeit als Hauptzielgruppe für PrEP betrachtet. Vertrauen und Misstrauen kristallisierten sich als wichtige Beziehungsthemen heraus: In Malawi spielten Verwandte eine Schlüsselrolle in der praktischen und moralischen Behandlungsunterstützung, während anderen Personen weniger vertraut wurde. Serodiskordanz, Probleme mit Kondomen, der Wille, HIV-negativ zu bleiben und Misstrauen gegenüber der Partnerin schufen Anreize für die PrEP-Einnahme; Vertrauen hinderte die PrEP-Einnahme, die dann jedoch vornehmlich der Partnerin mitgeteilt wurde. An beiden Studienorten informierten Männer signifikante Andere und nahmen somit eine Rolle als „Peer-Educators“ ein, die im Rahmen von ART und PrEP-Programmen für Männer gefördert werden sollte.

Die Heterogenität, Männlichkeit zu leben, die in beiden Studien zum Vorschein kam, wies eine Bandbreite auf, die von Autonomie, Virilität, Entscheidungsmacht, Scheu, Treue, Fürsorge für Partnerin(nen), Freunde und Familie, Vertrauen, Misstrauen, Geheimhaltung, Offenlegung des HIV-Status oder der PrEP-Einnahme bis zum Motivieren anderer reichte. Diese Heterogenität stellte ein Streben nach einem hegemonialen Maskulinitätsideal wie auch das Ausleben einer untergeordneten Maskulinität in Frage. Als alternatives Modell zum Verständnis von Maskulinität und zur Transformation von männlichem Verhalten sollte das Konzept eines kulturellen Repertoires, aus dem situationsspezifische Aktionsstrategien gewählt werden können, genauer untersucht werden.

Die Dissertationsstudie unterstreicht die Wichtigkeit, Männer als eigene Zielgruppe wahrzunehmen und die HIV-bezogenen Dienste auf ihre Bedürfnisse anzupassen. An beiden Studienorten zeigten Männer eine Präferenz für länger anhaltende Wirkstoffe, für die Verschreibung von Medikamenten für mehrere Monate, um Klinikbesuche zu reduzieren und für männerfreundliche Kliniken, Gesundheitsaufklärung und -dienste in lokalen Gemeinschaften mit Sport- und Verpflegungsanreizen. Für ART beinhaltete dies neue Zugangsoptionen wie ARV-Automaten, Viruslastselbsttests und lokale Personen, über die man ARVs beziehen kann; für PrEP bestand Bedarf für mehr gemeindeorientierte Informationen, z.B. zum Unterschied von ART und PrEP. HIV-Behandlung als Prävention schien Männern an beiden Studienorten unbekannt zu sein. Fundiertere Aufklärung könnte Stigma reduzieren und die Situation von serodiskordanten Paaren verbessern. Die verschiedenen Vorschläge sollten zusammen mit Männern konkreter ausgearbeitet und in Pilotstudien getestet werden, um maskulinitätsbezogene ART- und PrEP-Barrieren zu überwinden und zur beschleunigten Überwindung der AIDS-Epidemie für alle beizutragen.

REFERENCES

Adams, A.K. and Zamberia, A.M., 2017. **"I will take ARVs once my body deteriorates": an analysis of Swazi men's perceptions and acceptability of Test and Start**. African Journal of AIDS Research *16(4)*, 295–303, doi: 10.2989/16085906.2017.1362015.

Addis, M.E. and Mahalik, J.R., 2003. **Men, masculinity, and the contexts of help seeking**. American Psychologist *58*, 5–14, doi: 10.1037/0003-066X.58.1.5.

Adejumo, O.A., Malee, K.M., Ryscavage, P., Hunter, S.J. and Taiwo, B.O., 2015. **Contemporary issues on the epidemiology and antiretroviral adherence of HIV-infected adolescents in sub-Saharan Africa: a narrative review**. Journal of the International AIDS Society *18*, 20049, doi: 10.7448/IAS.18.1.20049.

Agolory, S., de Klerk, M., Baughman, A.L., Sawadogo, S., Mutenda, N., Pentikainen, N., Shoopala, N., Wolkon, A., Taffa, N., Mutandi, G., Jonas, A., Mengistu, A.T., Dzinotyiweyi, E., Prybylski, D., Hamunime, N. and Medley, A., 2018. **Low Case Finding Among Men and Poor Viral Load Suppression Among Adolescents Are Impeding Namibia's Ability to Achieve UNAIDS 90-90-90 Targets**. Open Forum Infectious Diseases *5(9)*, doi: 10.1093/ofid/ofy200.

Akatukwasa, C., Getahun, M., El Ayadi, A.M., Namanya, J., Maeri, I., Itiakorit, H., Owino, L., Sanyu, N., Kabami, J., Ssemmondo, E., Sang, N., Kwarisiima, D., Petersen, M.L., Charlebois, E.D., Chamie, G., Clark, T.D., Cohen, C.R., Kamya, M.R., Bukusi, E.A., Havlir, D.V. and Camlin, C.S., 2021. **Dimensions of HIV-related stigma in rural communities in Kenya and Uganda at the start of a large HIV 'test and treat' trial**. PLOS ONE *16(5)*: e02494626, doi: 10.1371/journal.pone.0249462.

Allen, L., 2003. **Power talk: young people negotiating (hetero)sex**. Women's Studies International Forum *26*, 235–244, doi: 10.1016/S0277-5395(03)00053-0.

Amaro, H., 1995. **Love, sex, and power: Considering women's realities in HIV prevention**. American psychologist *50*(6), 437–447, doi: 10.1037/0003-066X.50.6.437.

Amnesty International, 2010. **Too late, too little - The Failure of Law Reform for Women in Swaziland.** URL: https://www.amnesty.org/en/documents/afr55/007/2010/en/ accessed [02.02.2019].

Armitage, C.J. and Conner, M., 2000. **Social cognition models and health behaviour: A structured review.** Psychology & Health *15(2)*, 173–189, doi: 10.1080/08870440008400299.

Ashaba, S., Cooper-Vince, C., Vořechovská, D., Rukundo, G.Z., Maling, S., Akena, D. and Tsai, A.C., 2019. **Community beliefs, HIV stigma, and depression among adolescents living with HIV in rural Uganda**. Afr J AIDS Res *18(3)*, 169–180, doi: 10.2989/16085906.2019.1637912.

Atujuna, M., Newman, P.A., Wallace, M., Eluhu, M., Rubincam, C., Brown, B. and Bekker, L.-G., 2018. **Contexts of vulnerability and the acceptability of new biomedical HIV prevention technologies among key populations in South Africa: A qualitative study**. PLOS ONE *13(2)*, e0191251, doi: 10.1371/journal.pone.0191251.

Atuyambe, L., Neema, S., Otolok-Tanga, E., Wamuyu-Maina, G., Kasasa, S. and Wabwire-Mangen, F., 2008. **The effects of enhanced access to antiretroviral therapy: a qualitative study of community perceptions in Kampala city, Uganda**. Afr Health Sci *8(1)*, 13–19.

Baeten, J.M., Donnell, D., Mugo, N.R., Ndase, P., Thomas, K.K., Campbell, J.D., Wangisi, J., Tappero, J.W., Bukusi, E.A., Cohen, C.R., Katabira, E., Ronald, A., Tumwesigye, E., Were, E., Fife, K.H., Kiarie, J., Farquhar, C., John-Stewart, G., Kidoguchi, L., Coombs, R.W., Hendrix, C., Marzinke, M.A., Frenkel, L., Haberer, J.E., Bangsberg, D., Celum, C. and Partners PrEP Study Team, 2014. **Single-agent tenofovir versus combination emtricitabine plus tenofovir for pre-exposure prophylaxis for HIV-1 acquisition: an update of data from a randomised, double-blind, phase 3 trial**. Lancet Infect Dis *14(11)*, 1055–1064, doi: 10.1016/S1473-3099(14)70937-5.

Baeten, J.M., Donnell, D., Ndase, P., Mugo, N.R., Campbell, J.D., Wangisi, J., Tappero, J.W., Bukusi, E.A., Cohen, C.R., Katabira, E., Ronald, A., Tumwesigye, E., Were, E., Fife, K.H., Kiarie, J., Farquhar, C., John-Stewart, G., Kakia, A., Odoyo, J., Mucunguzi, A., Nakku-Joloba, E., Twesigye, R., Ngure, K., Apaka, C., Tamooh, H., Gabona, F., Mujugira, A., Panteleeff, D., Thomas, K.K., Kidoguchi, L., Krows, M., Revall, J., Morrison, S., Haugen, H., Emmanuel-Ogier, M., Ondrejcek, L., Coombs, R.W., Frenkel, L., Hendrix, C., Bumpus, N.N., Bangsberg, D., Haberer, J.E., Stevens, W.S., Lingappa, J.R., Celum, C. and Partners PrEP Study Team, 2012. **Antiretroviral prophylaxis for HIV prevention in heterosexual men and women**. N. Engl. J. Med. *367*, 399–410, doi: 10.1056/NEJMoa1108524.

Bailey, J.L., Molino, S.T., Vega, A.D. and Badowski, M., 2017. **A Review of HIV Pre-Exposure Prophylaxis: The Female Perspective**. Infectious Diseases and Therapy *6*, 363–382, doi: 10.1007/s40121-017-0159-9.

Baker, P., Dworkin, S.L., Tong, S., Banks, I., Shand, T. and Yamey, G., 2014. **The men's health gap: men must be included in the global health equity agenda**. Bulletin of the World Health Organization *92(8)*, 618–620, doi: 10.2471/BLT.13.132795.

Baker, R., Camosso-Stefinovic, J., Gillies, C., Shaw, E.J., Cheater, F., Flottorp, S. and Robertson, N., 2010. **Tailored interventions to overcome identified barriers to change: effects on professional practice and health care outcomes**. Cochrane Database of Systematic Reviews, doi: 10.1002/14651858.CD005470.pub2.

Barnabas Njozing, N., Edin, K.E. and Hurtig, A.-K., 2010. **"When I get better I will do the test": Facilitators and barriers to HIV testing in Northwest Region of Cameroon with implications for TB and HIV/AIDS control programmes**. SAHARA J *7(4)*, 24–32, doi: 10.1080/17290376.2010.9724974.

Bärnighausen, K., Matse, S., Hughey, A.B., Hettema, A., Bärnighausen, T.W. and McMahon, S.A., 2020. **"We know this will be hard at the beginning, but better in the long term": understanding PrEP uptake in the general population in Eswatini**. AIDS Care *32(2)*, 267–273, doi: 10.1080/09540121.2019.1653437.

Bärnighausen, K.E., Matse, S., Kennedy, C.E., Lejeune, C.L., Hughey, A.B., Hettema, A., Bärnighausen, T.W. and McMahon, S.A., 2019. **'This is mine, this is for me': preexposure prophylaxis as a source of resilience among women in Eswatini**. AIDS *33*, S45-S52, doi: 10.1097/QAD.0000000000002178.

Bartels, S., Castillo, I., Davis, D.A., Hightow-Weidman, L.B., Muessig, K.E., Galindo, C. and Barrington, C., 2021. **PrEP Disclosure Experiences of Gay and Bisexual Men in Guatemala**. AIDS Behav, 1-10, doi: 10.1007/s10461-021-03276-y.

Bazzano, A.N., Martin, J., Hicks, E., Faughnan, M. and Murphy, L., 2017. **Human-centred design in global health: A scoping review of applications and contexts**. PLOS ONE *12(11)*, e0186744, doi: 10.1371/journal.pone.0186744.

BBC News. anon. "Malawi opposition leader Lazarus Chakwera wins historic poll rerun"**,** 27.06.2020. URL: https://www.bbc.com/news/world-africa-53207780 accessed [10.10.2020].

anon. "Swaziland king renames country 'the Kingdom of eSwatini'", 19.04.2020 URL: https://www.bbc.com/news/world-africa-43821512 accessed [10.10.2020].

Beasley, C., 2008. **Rethinking Hegemonic Masculinity in a Globalizing World**. Men and Masculinities *11(1)*, 86–103, doi: 10.1177/1097184X08315102.

Beckham, S.W., Beyrer C, Luckow P, Doherty M, Negussie, E.K., and Baral, S.D., 2016. **Marked sex differences in all-cause mortality on antiretroviral therapy in low- and middle-income countries: a systematic review and meta-analysis**. J Int AIDS Soc *19(1)*, 21106, doi: 10.7448/ias.19.1.21106.

Berner-Rodoreda, A., 2008. **HIV and AIDS in Africa - a female epidemic requiring only a female response?** Brot für die Welt, Stuttgart.

Berner-Rodoreda, A. and Neuenroth, C., 2016. **The Burden of Breadwinning**. Brot für die Welt - Evangelischer Entwicklungsdienst, Berlin.

Berner-Rodoreda, A., Bärnighausen, T., Eyal, N., Sarker, M., Hossain, P., Leshabari, M., Metta, E., Mmbaga, E., Wikler, D. and McMahon, S.A., 2021a. **"Thought provoking", "interactive", and "more like a peer talk": Testing the deliberative interview style in Germany**. Social Science & Medicine - Qualitative Research in Health *1*, 100007, doi: 10.1016/j.ssmqr.2021.100007.

Berner-Rodoreda, A., Bärnighausen, T., Kennedy, C., Brinkmann, S., Sarker, M., Wikler, D., Eyal, N. and McMahon, S.A., 2020a. **From Doxastic to Epistemic: A Typology and Critique of Qualitative Interview Styles**. Qualitative Inquiry *26(3-4)*, 291–305, doi: 10.1177/1077800418810724.

Berner-Rodoreda, A., Dambe, R., Ngwira, E., Neuhann, F., Bärnighausen, T. and Phiri, S., 2020b. **U=U – Catalyst or barrier for men's engagement in ART? Stakeholder views from Blantyre, Malawi**, PED 1184. Presented at the International AIDS Conference. AIDS Virtual 2020.

Berner-Rodoreda, A., Geldsetzer, P., Bärnighausen, K., Hettema, A., Bärnighausen, T., Matse, S. and McMahon, S.A., 2020c. **"It's hard for us men to go to the clinic. We naturally have a fear of hospitals." Men's risk perceptions, experiences and program preferences for PrEP: A mixed methods study in Eswatini**. PLOS ONE *15(9)*, e0237427, doi: 10.1371/journal.pone.0237427.

Berner-Rodoreda, A., Ngwira, E., Alhassan, Y., Chione, B., Dambe, R., Bärnighausen, T., Phiri, S., Taegtmeyer, M. and Neuhann, F., 2021b. **"Deadly", "fierce", "shameful": notions of antiretroviral therapy, stigma and masculinities intersecting men's life-course in Blantyre, Malawi**. BMC Public Health *21*, 2247, doi: 10.1186/s12889-021-12314-2.

Bijker, R., Jiamsakul, A., Kityo, C., Kiertiburanakul, S., Siwale, M., Phanuphak, P., Akanmu, S., Chaiwarith, R., Wit, F.W., Sim, B.L., Boender, T.S., Ditangco, R., Rinke De Wit, T.F., Sohn, A.H. and Hamers, R.L., 2017. **Adherence to antiretroviral therapy for HIV in sub-Saharan Africa and Asia: a comparative analysis of two regional cohorts**. J Int AIDS Soc *20(1)*, 21218, doi: 10.7448/IAS.20.1.21218.

Billioux, V.G., Grabowski, M.K., Ssekasanvu, J., Reynolds, S.J., Berman, A., Bazaale, J., PateL, E.U., Bugos, E., Ndyanabo, A., Kisakye, A., Kagaayi, J., Gray, R.H., Nakigozi, G., Ssekubugu, R., Nalugoda, F., Serwadda, D., Wawer, M.J. and Chang, L.W., 2018. **HIV viral suppression and geospatial patterns of HIV antiretroviral therapy treatment facility use in Rakai, Uganda**. AIDS (London, England) *32(6)*, 819–824, doi: 10.1097/QAD.0000000000001761.

Blackwell, C.W., 2018. **Preventing HIV Infection in High-Risk Adolescents Using Preexposure Prophylaxis (PrEP)**. Journal of the Association of Nurses in AIDS Care *29(5)*, 770–774, doi: 10.1016/j.jana.2018.06.001.

Blumenthal, J. and Haubrich, R., 2014. **Risk Compensation in PrEP: An Old Debate Emerges Yet Again**. Virtual Mentor *16(11)*, 909–915, doi: 10.1001/virtualmentor.2014.16.11.stas1-1411.

Boender, T.S., Sigaloff, K., McMahon, J., Kiertiburanakul, S., Jordan, M., Barcarolo, J., Ford, N. and Rinke de Wit, T., 2015. **Long-term Virological Outcomes of First-Line Antiretroviral Therapy for HIV-1 in Low-and Middle-Income Countries: A Systematic Review and Meta-analysis**. Clinical Infectious Diseases *61(9),* 1453-61*,* doi: 10.1093/cid/civ556.

Bond, K.T., Frye, V., Taylor, R., Williams, K., Bonner, S., Lucy, D., Cupid, M., Weiss, L., Koblin, B.A. and Straight Talk Study Team, 2015. **Knowing is not enough: a qualitative report on HIV testing among heterosexual African-American men**. AIDS Care *27(2)*, 182–188, doi: 10.1080/09540121.2014.963009.

Bond, L., Lauby, J. and Batson, H., 2005. **HIV testing and the role of individual- and structural-level barriers and facilitators**. AIDS Care *17(2)*, 125–140, doi: 10.1080/09540120512331325653.

Bootsma, H.A. and Jorgensen, S.E., 2013. **Lake Malawi/Nyasa: Experience and lessons learned brief**.**URL:** https://www.semanticscholar.org/paper/Lake-Malawi%2FNyasa%3A-Experience-and-lessons-learned-Bootsma-J%C3%B8rgensen/4eeb195d7d53a1fe2f8afc8ee77b310503d79804, accessed [10.11.2020].

Bos, A.E.R., Pryor, J.B., Reeder, G.D. and Stutterheim, S.E., 2013. **Stigma: Advances in Theory and Research**. Basic and Applied Social Psychology *35(1)*, 1–9, doi: 10.1080/01973533.2012.746147.

Bowleg, L., 2004. **Love, Sex, and Masculinity in Sociocultural Context: HIV Concerns and Condom Use among African American Men in Heterosexual Relationships**. Men and Masculinities *7(2)*, 166–186, doi: 10.1177/1097184X03257523.

Bowleg, L., Teti, M., Massie, J.S., Patel, A., Malebranche, D.J. and Tschann, J.M., 2011. **"What does it take to be a man? What is a real man?": ideologies of masculinity and HIV sexual risk among Black heterosexual men**. Culture, Health & Sexuality *13(5)*, 545–559, doi: 10.1080/13691058.2011.556201.

Boyle, M.P., 2018. **Enacted stigma and felt stigma experienced by adults who stutter**. Journal of Communication Disorders *73*, 50–61, doi: 10.1016/j.jcomdis.2018.03.004.

Braun, V. and Clarke, V., 2019. **Reflecting on reflexive thematic analysis**. Qualitative Research in Sport, Exercise and Health *11(4)*, 589–597, doi: 10.1080/2159676X.2019.1628806.

Braun, V. and Clarke, V., 2014. **What can "thematic analysis" offer health and wellbeing researchers?** Int J Qual Stud Health Well-being *9(1),* doi: 10.3402/qhw.v9.26152.

Braun, V. and Clarke, V., 2006. **Using thematic analysis in psychology**. Qualitative Research in Psychology *3(2)*, 77–101, doi: 10.1191/1478088706qp063oa.

Bronfenbrenner, U., 1977. **Toward an experimental ecology of human development**. Am Psychol. *32(7)*, 513–531, doi: 10.1037/0003-066X.32.7.513.

Brown, J., Sorrell, J. and Raffaelli, M., 2005. **An Exploratory Study of Constructions of Masculinity, Sexuality and HIV/AIDS in Namibia, Southern Africa**. Culture, Health & Sexuality *7(6)*, 585–598, doi: 10.1080/13691050500250198.

Brown, W.E., Malagala, H. and Bajunirwe, F., 2021. **Social support, gender and pill burden influence viral load suppression among HIV-infected adolescents and young adults in rural south-western Uganda**. Vulnerable Children and Youth Studies *16(1)*, 86–97, doi: 10.1080/17450128.2020.1842954.

Brug, J., Conner, M., Harré, N., Kremers, S., McKellar, S. and Whitelaw, S., 2005. **The Transtheoretical Model and stages of change: a critique: Observations by five Commentators on the paper by Adams, J. and White, M. (2004) Why don't stage-based activity promotion interventions work?** Health Education Research *20(2)*, 244–258, doi: 10.1093/her/cyh005.

Bukenya, D., Mayanja, B.N., Nakamanya, S., Muhumuza, R. and Seeley, J., 2019. **What causes non-adherence among some individuals on long term antiretroviral therapy? Experiences of individuals with poor viral suppression in Uganda**. AIDS Research and Therapy *16*, 2, doi: 10.1186/s12981-018-0214-y.

Bunnell, R.E., Nassozi, J., Marum, E., Mubangizi, J., Malamba, S., Dillon, B., Kalule, J., Bahizi, J., Musoke, N. and Mermin, J.H., 2005. **Living with discordance: knowledge, challenges, and prevention strategies of HIV-discordant couples in Uganda**. AIDS Care *17(8)*, 999–1012, doi: 10.1080/09540120500100718.

Calabrese, S.K. and Mayer, K.H., 2019. **Providers should discuss U= U with all patients living with HIV**. The Lancet HIV *6(4)*, e211–e213, doi: 10.1016/S2352-3018(19)30030-X.

Calabrese, S.K. and Underhill, K., 2015. **How Stigma Surrounding the Use of HIV Preexposure Prophylaxis Undermines Prevention and Pleasure: A Call to**

Destigmatize "Truvada Whores." American Journal of Public Health *105(10)*, 1960–1964, doi: 10.2105/AJPH.2015.302816.

Cameron, E., 2012. **Constitutionalism, Rights, and International Law: The Glenister Decision**. Duke J. Comparative and International Law, *23*, 389-409.

Camlin, C.S., Koss, C.A., Getahun, M., Owino, L., Itiakorit, H., Akatukwasa, C., Maeri, I., Bakanoma, R., Onyango, A., Atwine, F., Ayieko, J., Kabami, J., Mwangwa, F., Atukunda, M., Owaraganise, A., Kwarisiima, D., Sang, N., Bukusi, E.A., Kamya, M.R., Petersen, M.L., Cohen, C.R., Charlebois, E.D. and Havlir, D.V., 2020. **Understanding Demand for PrEP and Early Experiences of PrEP Use Among Young Adults in Rural Kenya and Uganda: A Qualitative Study**. AIDS Behav *24*, 2149–2162, doi: 10.1007/s10461-020-02780-x.

Camlin, C.S., Ssemmondo, E., Chamie, G., El Ayadi, A.M., Kwarisiima, D., Sang, N., Kabami, J., Charlebois, E., Petersen, M., Clark, T.D., Bukusi, E.A., Cohen, C.R., R Kamya, M., Havlir, D. and SEARCH Collaboration, 2016. **Men "missing" from population-based HIV testing: insights from qualitative research**. AIDS Care *28 Suppl 3*, 67–73, doi: 10.1080/09540121.2016.1164806.

Canadian Mental Health Association. **Stigma and Discrimination.** undated. URL: https://ontario.cmha.ca/documents/stigma-and-discrimination/ accessed [15.07.2021].

Carroll, J.J., Ngure, K., Heffron, R., Curran, K., Mugo, N.R. and Baeten, J.M., 2016. **Gendered Differences in the Perceived Risks and Benefits of Oral PrEP Among HIV Serodiscordant Couples in Kenya**. AIDS Care *28(8)*, 1000–1006, doi: 10.1080/09540121.2015.1131972.

Cassell, M.M., Halperin, D.T., Shelton, J.D. and Stanton, D., 2006. **Risk compensation: the Achilles' heel of innovations in HIV prevention?** BMJ *332(7541)*, 605–607, doi: 10.1136/bmj.332.7541.605.

Central Statistical Office, Eswatini, 2019. The 2017 Population and Housing Census, volume 3. URL: http://www.gov.sz/images/FinanceDocuments/Volume-3.pdf, accessed [04.11.2020]

Chamberlin, S., Mphande, M., Phiri, K., Kalande, P. and Dovel, K., 2021. **How HIV Clients Find Their Way Back to the ART Clinic: A Qualitative Study of Disengagement and Re-engagement with HIV Care in Malawi**. AIDS Behav, doi: 10.1007/s10461-021-03427-1.

Chan, K.Y., Rungpueng, A. and Reidpath, D.D., 2009. **AIDS and the stigma of sexual promiscuity: Thai nurses' risk perceptions of occupational exposure to HIV**. Culture, Health & Sexuality *11(4)*, 353–368, doi: 10.1080/13691050802621161.

Chan, P.A., Mena, L., Patel, R., Oldenburg, C.E., Beauchamps, L., Perez-Brumer, A.G., Parker, S., Mayer, K.H., Mimiaga, M.J. and Nunn, A., 2016. **Retention in care outcomes for HIV pre-exposure prophylaxis implementation programmes among men who have sex with men in three US cities**. J Int AIDS Soc *19(1),* doi: 10.7448/IAS.19.1.20903.

Charmaz, K., 2014. **Constructing Grounded Theory**, 2nd ed., Sage Publications, London Thousand Oaks New Delhi.

Chawla, A., Wang, C., Patton, C., Murray, M., Punekar, Y., de Ruiter, A. and Steinhart, C., 2018. **A Review of Long-Term Toxicity of Antiretroviral Treatment Regimens and Implications for an Aging Population**. Infect Dis Ther *7(2)*, 183–195, doi: 10.1007/s40121-018-0201-6.

Chen, W., Qian, L., Shi, J. and Franklin, M., 2018. **Comparing performance between log-binomial and robust Poisson regression models for estimating risk ratios under model misspecification**. BMC Medical Research Methodology *18(1)*, 63, doi: 10.1186/s12874-018-0519-5

Cheng, C.Y., Quaife, M., Eakle, R., Cabrera Escobar, M.A., Vickerman, P. and Terris-Prestholt, F, 2019. **Determinants of heterosexual men's demand for long-acting injectable**

pre-exposure prophylaxis (PrEP) for HIV in urban South Africa. BMC Public Health *19(1)*, 996, doi:10.1186/s12889-019-7276-1.

Chime, O.H., Arinze-Onyia, S.U. and Ossai, E.N., 2019a. **Examining the effect of peer-support on self-stigma among persons living with HIV/AIDS.** Pan Afr Med J *34*, 200, doi: 10.11604/pamj.2019.34.200.17652.

Chime, O.H., Ndibuagu, E.O. and Orji, C.J., 2019b. **Rates and predictors of adherence and retention for antiretroviral therapy among HIV-positive adults in Enugu, Nigeria**. Malawi Med J *31(3)*, 202–211, doi:10.4314/mmj.v31i3.7.

Chirambo, L., Valeta, M., Banda Kamanga, T.M. and Nyondo-Mipando, A.L., 2019. **Factors influencing adherence to antiretroviral treatment among adults accessing care from private health facilities in Malawi**. BMC Public Health *19(1)*, 1382, doi: 10.1186/s12889-019-7768-z.

Chkhartishvili, N., Rukhadze, N., Svanidze, M., Sharvadze, L., Dehovitz, J. A., Tsertsvadze, T., McNutt, L.A. and Del Rio, C, 2014. **Evaluation of multiple measures of antiretroviral adherence in the Eastern European country of Georgia**. Journal of the International AIDS Society, *17(1)*, 18885, doi: 10.7448/IAS.17.1.18885.

Christopoulos, K.A., Neilands, T.B., Dilworth, S., Lisha, N., Sauceda, J., Mugavero, M.J., Crane, H.M., Fredericksen, R.J., Mathews, W.C. and Moore, R.D., 2020. **Internalized HIV stigma predicts subsequent viremia in US HIV patients through depressive symptoms and antiretroviral therapy adherence**. Aids *34(11)*, 1665–1671, doi: 10.1097/QAD.0000000000002595.

Cohen, M.S., Chen, Y.Q., McCauley, M., Gamble, T., Hosseinipour, M.C., Kumarasamy, N., Hakim, J.G., Kumwenda, J., Grinsztejn, B., Pilotto, J.H.S., Godbole, S.V., Chariyalertsak, S., Santos, B.R., Mayer, K.H., Hoffman, I.F., Eshleman, S.H., Piwowar-Manning, E., Cottle, L., Zhang, X.C., Makhema, J., Mills, L.A., Panchia, R., Faesen, S., Eron, J., Gallant, J., Havlir, D., Swindells, S., Elharrar, V., Burns, D., Taha, T.E., Nielsen-Saines, K., Celentano, D.D., Essex, M., Hudelson, S.E., Redd, A.D. and Fleming, T.R., 2016. **Antiretroviral Therapy for the Prevention of HIV-1 Transmissio**n. New England Journal of Medicine *375*, 830–839, doi:10.1056/NEJMoa1600693.

Cohen, M.S., Chen, Y.Q., McCauley, M., Gamble, T., Hosseinipour, M.C., Kumarasamy, N., Hakim, J.G., Kumwenda, J., Grinsztejn, B., Pilotto, J.H.S., Godbole, S.V., Mehendale, S., Chariyalertsak, S., Santos, B.R., Mayer, K.H., Hoffman, I.F., Eshleman, S.H., Piwowar-Manning, E., Wang, L., Makhema, J., Mills, L.A., de Bruyn, G., Sanne, I., Eron, J., Gallant, J., Havlir, D., Swindells, S., Ribaudo, H., Elharrar, V., Burns, D., Taha, T.E., Nielsen-Saines, K., Celentano, D., Essex, M. and Fleming, T.R., 2011. **Prevention of HIV-1 Infection with Early Antiretroviral Therapy**. New England Journal of Medicine *365*, 493–505. doi:10.1056/NEJMoa1105243

Cohen, M.S., McCauley, M. and Gamble, T.R., 2012. **HIV treatment as prevention and HPTN 052**. Curr Opin HIV AIDS *7(2)*, 99–105, doi: 10.1097/COH.0b013e32834f5cf2.

Collier, R., 1998. **Masculinities, crime and criminology,** Sage Publications, London Thousand Oaks New Delhi.

Colvin, C.J., 2019. **Strategies for engaging men in HIV services**. The Lancet HIV *6(3)*, e191–e200, doi: 10.1016/S2352-3018(19)30032-3.

Connell, R. W., 2005. **Masculinities**, 2nd ed., Polity Press, Cambridge, UK

Connell, R.W., 1998. **Masculinities and Globalization**. Men and Masculinities *1*, 3–23, doi: 10.1177/1097184X98001001001.

Connell, R.W. and Messerschmidt, J.W., 2005. **Hegemonic Masculinity: Rethinking the Concept**. Gender & Society *19(6)*, 829–859, doi: 10.1177/0891243205278639.

Conroy, A., Leddy, A., Johnson, M., Ngubane, T., van Rooyen, H. and Darbes, L., 2017. **"I told her this is your life": Relationship Dynamics, Partner Support, and Adherence to Antiretroviral Therapy among South African Couples**. Cult Health Sex *19(11)*, 1239–1253, doi: 10.1080/13691058.2017.1309460.

Conroy, A.A., Ruark, A., McKenna, S.A., Tan, J.Y., Darbes, L.A., Hahn, J.A. and Mkandawire, J., 2020. **The Unaddressed Needs of Alcohol-Using Couples on Antiretroviral Therapy in Malawi: Formative Research on Multilevel Interventions**. AIDS Behav *24(6)*, 1599–1611, doi: 10.1007/s10461-019-02653-y.

Corneli, A., Perry, B., McKenna, K., Agot, K., Ahmed, K., Taylor, J., Malamatsho, F., Odhiambo, J., Skhosana, J. and Van Damme, L., 2016. **Participants' Explanations for Nonadherence in the FEM-PrEP Clinical Trial**. JAIDS Journal of Acquired Immune Deficiency Syndromes *71(4)*, 452–461, doi: 10.1097/QAI.0000000000000880.

Cornell, M., Cox, V. and Wilkinson, L., 2015. **Public health blindness towards men in HIV programmes in Africa**. Tropical Medicine & International Health *20(12)*, 1634–1635, doi: 10.1111/tmi.12593.

Cornell, M., McIntyre, J. and Myer, L., 2011. **Men and antiretroviral therapy in Africa: our blind spot**. Tropical Medicine & International Health *16(7)*, 828–829, doi: 10.1111/j.1365-3156.2011.02767.x.

Courtenay, W.H., 2000. **Constructions of masculinity and their influence on men's well-being: a theory of gender and health**. Social Science 50(10):1385-401, doi: 10.1016/s0277-9536(99)00390-1.

Cowan, F.M., Delany-Moretlwe, S., Sanders, E.J., Mugo, N.R., Guedou, F.A., Alary, M., Behanzin, L., Mugurungi, O. and Bekker, L.-G., 2016. **PrEP implementation research in Africa: what is new?** Journal of the International AIDS Society *19(7)(Suppl 6)*, 21101, doi: 10.7448/IAS.19.7.21101.

Creswell, J.W. and Creswell, J.D., 2018. **Research Design: Qualitative, Quantitative, and Mixed Methods Approaches**, 5th ed., Sage Publications, Thousand Oaks London New Delhi.

Criado, E., 2013. **King of Swaziland to Marry His 15th Wife**. The Independent. URL: https://www.independent.co.uk/news/world/africa/king-of-swaziland-to-marry-his-15th-wife-8820432.html, accessed [02.02.2019].

Croome, N., Ahluwalia, M., Hughes, L.D. and Abas, M., 2017. **Patient-reported barriers and facilitators to antiretroviral adherence in sub-Saharan Africa**. AIDS *31(7)*, 995–1007, doi:10.1097/QAD.0000000000001416.

Crowell, T.A., Pinyakorn, S., Sacdalan, C., Kroon, E., Colby, D.J., Puttamaswin, S., Ubolyam, S., Trichavaroj, R., Butterworth, O., Turk, E., Mccullough, C., Chomont, N., de Souza, M., Robb, M.L., Phanuphak, N., Ananworanich, J. and RV254/SEARCH010 Study Group, 2020. **Viral Blips After Treatment Initiation During Acute Human Immunodeficiency Virus Infection**. Clinical Infectious Diseases *70(12)*, 2706–2709, doi: 10.1093/cid/ciz936.

Dageid, W., Govender, K. and Gordon, S.F., 2012. **Masculinity and HIV disclosure among heterosexual South African men: implications for HIV/AIDS intervention**. Culture, Health & Sexuality *14(8)*, 925–940, doi: 10.1080/13691058.2012.710337.

Dalglish, S.L., Khalid, H. and McMahon, S.A., 2020. **Document analysis in health policy research: the READ approach**. Health Policy and Planning *35(10)*, 1424–1431, doi: 10.1093/heapol/czaa064.

Daskalopoulou, M., Lampe, F.C., Sherr, L., Phillips, A.N., Johnson, M.A., Gilson, R., Perry, N., Wilkins, E., Lascar, M., Collins, S., Hart, G., Speakman, A., Rodger, A.J. and ASTRA Study Group, 2017. **Non-Disclosure of HIV Status and Associations with Psychological Factors, ART Non-Adherence, and Viral Load Non-Suppression Among People Living with HIV in the UK**. AIDS Behav *21(1)*, 184–195, doi:10.1007/s10461-016-1541-4.

Davies, H.T.O., Crombie, I.K. and Tavakoli, M., 1998. **When can odds ratios mislead?** BMJ *316(7136)*, 989–991, doi: 10.1136/bmj.316.7136.989.

Delpierre, C., Cuzin, L., Lauwers-Cances, V., Marchou, B. and Lang, T., 2006. **High-Risk Groups for Late Diagnosis of HIV Infection: A Need for Rethinking Testing Policy in**

the General Population. AIDS Patient Care and STDs *20(12)*, 838–847, doi: 10.1089/apc.2006.20.838.

Demetriou, D.Z., 2001. **Connell's concept of hegemonic masculinity: A critique**. Theory Soc. *30*, 337–361, doi: 10.1023/A:1017596718715.

Deribe, K., Woldemichael, K., Njau, B. and Yakob, B., 2009. **Gender difference in HIV status disclosure among HIV positive service users**. East African journal of public health *6(3),* 248-55.

Derksen, L., Muula, A., Matengeni, A., van Lettow, M., Sodhi, S.D. and van Oosterhout, J.J., 2015. **Reducing stigma and increasing HIV testing with a health information intervention: a cluster-randomized trial from Malawi**. Poster presented at Eighth International AIDS Society Conference on HIV Pathogenesis, Treatment and Prevention, Vancouver, Canada: IAS.

Dessie, G., Wagnew, F., Mulugeta, H., Amare, D., Jara, D., Leshargie, C.T., Negesse, A., Rayasam, S. and Burrowes, S., 2019. **The effect of disclosure on adherence to antiretroviral therapy among adults living with HIV in Ethiopia: a systematic review and meta-analysis**. BMC Infectious Diseases *19(1)*, 1-8, doi: 10.1186/s12879-019-4148-3.

Devries, K.M. and Free, C., 2010. **"I told him not to use condoms": masculinities, femininities and sexual health of Aboriginal Canadian young people**. Sociol Health Illn *32(6)*, 827–842, doi:10.1111/j.1467-9566.2010.01242.x.

Dorman, R.M., Sutton, S.H. and Yee, L.M., 2019. **Understanding HIV-Related Pill Aversion as a Distinct Barrier to Medication Adherence**. Behavioral Medicine *45(4)*, 294–303, doi: 10.1080/08964289.2018.1534076.

Dorward, J., Msimango, L., Gibbs, A., Shozi, H., Tonkin-Crine, S., Hayward, G., Butler, C.C., Ngobese, H., Drain, P.K. and Garrett, N., 2020. **Understanding how community antiretroviral delivery influences engagement in HIV care: a qualitative assessment of the Centralised Chronic Medication Dispensing and Distribution programme in South Africa**. BMJ Open *10(5)*, e035412, doi: 10.1136/bmjopen-2019-035412.

Dovel, K., Phiri, K., Mphande, M., Mindry, D., Sanudi, E., Bellos, M. and Hoffman, R.M., 2020. **Optimizing Test and Treat in Malawi: health care worker perspectives on barriers and facilitators to ART initiation among HIV-infected clients who feel healthy.** Glob Health Action *13(1)*, 1728830, doi: 10.1080/16549716.2020.1728830.

Dubov, A., Galbo, P., Altice, F.L. and Fraenkel, L., 2018. **Stigma and Shame Experiences by MSM Who Take PrEP for HIV Prevention: A Qualitative Study**. Am J Mens Health *12(6)*, 1843–1854, doi: 10.1177/1557988318797437.

Dworkin, S.L., 2015. **Men at Risk: Masculinity, Heterosexuality and HIV Prevention**, volume 17, NYU Press.

Eakle, R., Gomez, G.B., Naicker, N., Bothma, R., Mbogua, J., Escobar, M.A.C., Saayman, E., Moorhouse, M., Venter, W.D.F. and Rees, H. on behalf of the TAPS Demonstration Project Team, 2017. **HIV pre-exposure prophylaxis and early antiretroviral treatment among female sex workers in South Africa: Results from a prospective observational demonstration project**. PLOS Medicine *14(11)*, e1002444, doi: 10.1371/journal.pmed.1002444.

Eaton, L.A. and Kalichman, S.C., 2007. **Risk compensation in HIV prevention: Implications for vaccines, microbicides, and other biomedical HIV prevention technologies**. Curr HIV/AIDS Rep *4(4)*, 165–172, doi: 10.1007/s11904-007-0024-7.

Eaton, L.A., Driffin, D.D., Bauermeister, J., Smith, H. and Conway-Washington, C., 2015. **Minimal Awareness and Stalled Uptake of Pre-Exposure Prophylaxis (PrEP) Among at Risk, HIV-Negative, Black Men Who Have Sex with Men**. AIDS Patient Care STDS *29(8)*, 423–430, doi: 10.1089/apc.2014.0303.

Eaton, L.A., Kalichman, S.C., Price, D., Finneran, S., Allen, A. and Maksut, J., 2017. **Stigma and Conspiracy Beliefs Related to Pre-exposure Prophylaxis (PrEP) and Interest in**

Using PrEP Among Black and White Men and Transgender Women Who Have Sex with Men. AIDS Behav *21(5)*, 1236–1246, doi: 10.1007/s10461-017-1690-0.

Eisinger, R.W., Folkers, G.K. and Fauci, A.S., 2019. **Ending the Human Immunodeficiency Virus Pandemic: Optimizing the Prevention and Treatment Toolkits**. Clin Infect Dis *69(12)*, 2212–2217, doi: 10.1093/cid/ciz998.

El-Krab, R. and Kalichman, S.C., 2021. **Alcohol-Antiretroviral Therapy Interactive Toxicity Beliefs and Intentional Medication Nonadherence: Review of Research with Implications for Interventions**. AIDS Behav *25*, 251–264, doi: 10.1007/s10461-021-03285-x.

Falcão, J.R.S.P., Bradshaw, C.C., Garrett, C.C., Bilardi, J.E., Chen, M.Y., Zablotska, I., Fairley, C.K. and Williams, H., 2016. **Views of HIV-negative partners in heterosexual serodiscordant relationships regarding HIV pre-exposure prophylaxis: a qualitative study**. Sex. Health *13(4)*, 345–352, doi: 10.1071/SH15143.

Farmer, A., Wang, X., Ganesan, A., Deiss, R.G., Agan, B.K., O'Bryan, T.A., Akers, K. and Okulicz, J.F., 2016. **Factors associated with HIV viral load "blips" and the relationship between self-reported adherence and efavirenz blood levels on blip occurrence: a case–control study**. AIDS Research and Therapy *13*, 16, doi: 10.1186/s12981-016-0100-4.

Fernández-Balbuena, S., Marcos, H., Pérez-Rubio, A., Hoyos, J., Belza, M.J. and Fuente, L. de la, 2015. **The rapid test in Spanish pharmacies: a novel programme to reach heterosexual men?** HIV Medicine *16*, 362–369, doi: 10.1111/hiv.12224.

Ferraz, D., Couto, M.T., Zucchi, E.M., Calazans, G.J., Santos, L.A. dos, Mathias, A. and Grangeiro, A., 2019. **AIDS- and sexuality-related stigmas underlying the use of post-exposure prophylaxis for HIV in Brazil: findings from a multicentric study**. Sexual and Reproductive Health Matters *27(3)*, 107–121, doi: 10.1080/26410397.2019.1650587.

FHI360, 2011. **Research Ethics Training Curriculum**, 2nd ed., URL: https://www.fhi360.org/sites/all/libraries/webpages/fhi-retc2/index.html, accessed [07.08.2019].

Fleming, P.J., DiClemente, R.J. and Barrington, C., 2016. **Masculinity and HIV: Dimensions of masculine norms that contribute to men's HIV-related sexual behaviors**. AIDS Behav *20(4)*, 788–798, doi:10.1007/s10461-015-1264-y.

Flood, Michael, 2002. **Between men and masculinity: an assessment of the term "masculinity" in recent scholarshipon men**., in: Manning the Next Millennium: Studies in Masculinities, Pearce, S. & Muller, V. (eds.), Black Swan Press, Bentley, WA, pp. 203–213.

Fonner, V.A., Dalglish, S.L., Kennedy, C.E., Baggaley, R., O'Reilly, K.R., Koechlin, F.M., Rodolph, M., Hodges-Mameletzis, I. and Grant, R.M., 2016. **Effectiveness and safety of oral HIV preexposure prophylaxis for all populations**. AIDS *30(12)*, 1973–1983, doi: 10.1097/QAD.0000000000001145.

Fowler, N., Arkell, P., Abouyannis, M., James, C. and Roberts, L., 2014. **Attitudes of serodiscordant couples towards antiretroviral-based HIV prevention strategies in Kenya: a qualitative study**. Journal of the International AIDS Society *17(4 Suppl 3)*, 19563, doi: 10.7448/IAS.17.4.19563.

Fox, M.P., Mazimba, A., Seidenberg, P., Crooks, D., Sikateyo, B. and Rosen, S., 2010. **Barriers to initiation of antiretroviral treatment in rural and urban areas of Zambia: a cross-sectional study of cost, stigma, and perceptions about ART**. J Int AIDS Soc *13(1)*, 8, doi: 10.1186/1758-2652-13-8.

Freeborn, K. and Portillo, C.J., 2018. **Does pre-exposure prophylaxis for HIV prevention in men who have sex with men change risk behaviour? A systematic review**. J Clin Nurs *27(17-18)*, 3254–3265, doi:10.1111/jocn.13990.

Gafos, M., Horne, R., Nutland, W., Bell, G., Rae, C., Wayal, S., Rayment, M., Carke, A., Schembri, G., Gilson, R., McOwan, A., Sullivan, A., Fox., J., Apea, V. , Dewsnap, C.,

Dolling,. D., White, E., Brodnicki, E., Wood, G., Dunn, D., McCormack, S., 2019. **The Context of Sexual Risk Behaviour Among Men Who Have Sex with Men Seeking PrEP, and the Impact of PrEP on Sexual Behaviour**. AIDS Behav *23(7)*, 1708–20, doi: 10.1007/s10461-018-2300-5.

Galdas, P.M., Cheater, F. and Marshall, P., 2005. **Men and health help-seeking behaviour: literature review**. Journal of Advanced Nursing *49(6)*, 616–623, doi:10.1111/j.1365-2648.2004.03331.x.

Galea, J.T., Kinsler, J.J., Salazar, X., Lee, S.-J., Giron, M., Sayles, J.N., Cáceres, C. and Cunningham, W.E., 2011. **Acceptability of Pre-Exposure Prophylaxis (PrEP) as an HIV prevention strategy: Barriers and facilitators to PrEP uptake among at-risk Peruvian populations**. Int J STD AIDS *22(5)*, 256–262, doi: 10.1258/ijsa.2009.009255.

Gallis, J.A. and Turner, E.L., 2019. **Relative Measures of Association for Binary Outcomes: Challenges and Recommendations for the Global Health Researcher**. Ann Glob Health *85(1)*, 137, doi:10.5334/aogh.2581.

Ganle, J.K., 2016. **Hegemonic Masculinity, HIV/AIDS Risk Perception, and Sexual Behavior Change Among Young People in Ghana**. Qual Health Res *26(6)*, 763–781, doi: 10.1177/1049732315573204.

Garfield, C.F., Isacco, A. and Rogers, T.E., 2008. **A Review of Men's Health and Masculinity.** American Journal of Lifestyle Medicine *2(6)*, 474–487, doi: 10.1177/1559827608323213.

Geldsetzer, P., Bärnighausen, K., Hettema, A., McMahon, S.A., Dalal, S., Chase, R.P., Oldenburg, C.E., Kohler, S., Chen, S., Dlamini, P., Mavuso, M., Hughey, A.B., Matse, S. and Bärnighausen, T., 2020. **A stepped-wedge randomized trial and qualitative survey of HIV pre-exposure prophylaxis uptake in the Eswatini population**. Sci Transl Med *12(562),* eaba4487, doi:10.1126/scitranslmed.aba4487

George, W.H., Blayney, J.A., Stappenbeck, C.A. and Davis, K.C., 2021. **The Role of Alcohol-Related Behavioral Risk in the Design of HIV Prevention Interventions in the Era of Antiretrovirals: Alcohol Challenge Studies and Research Agenda.** AIDS Behav *25(Suppl 3)*, 347–364, doi:10.1007/s10461-021-03351-4.

Geretti, A.M., Smith, C., Haberl, A., Garcia-Diaz, A., Nebbia, G., Johnson, M., Phillips, A. and Staszewski, S., 2008. **Determinants of virological failure after successful viral load suppression in first-line highly active antiretroviral therapy**. Antivir Ther *13(7)*, 927–36.

Glanz, K. and Rimer, B.K., 2005. **Theory at a glance: A guide for health promotion practice** . National Cancer Institute, NIH, Public Health Service, US Government Printing Office, Washington, DC.

Glaser, B.G. and Strauss, A.L., 2006. **The discovery of grounded theory: strategies for qualitative research**. Aldine Transaction, New Brunswick London.

Goffman, E., 1963. **Stigma: Notes on the management of spoiled identity**. Simon and Schuster, New York.

Golub, S.A., 2018. **PrEP Stigma: Implicit and Explicit Drivers of Disparity**. Curr HIV/AIDS Rep *15(2)*, 190–197, doi: 10.1007/s11904-018-0385-0.

Gombe, M.M., Cakouros, B.E., Ncube, G., Zwangobani, N., Mareke, P., Mkwamba, A., Prescott, M.R., Bhatasara, T., Murwira, M., Mangwiro, A.Z. and Prust, M.L., 2020. **Key barriers and enablers associated with uptake and continuation of oral pre-exposure prophylaxis (PrEP) in the public sector in Zimbabwe: Qualitative perspectives of general population clients at high risk for HIV**. PLOS ONE *15(1)*, e0227632, doi: 10.1371/journal.pone.0227632.

Govender, E. and Abdool Karim, Q., 2018. **Understanding women and men's acceptability of current and new HIV prevention technologies in KwaZulu-Natal, South Africa**. AIDS Care *30(10)*, 1311–1314, doi: 10.1080/09540121.2018.1488027.

Government of Malawi, 2019. **Integrated HIV Program Report, April to June 2019**, received per email [12.03.2021].

Government of Malawi, 2018. **HIV and AIDS (Prevention and Management) Act**, The Government Printer, Lilongwe. URL: http://www.aidsmalawi.org.mw/view-resource/HIV%20and%20AIDS%20%28Prevention%20and%20Management%29%20Act%2C%202018.pdf, accessed [29.11.2020].

Govindasamy, D., Meghij, J., Negussi, E.K., Baggaley, R.C., Ford, N. and Kranzer, K., 2014. **Interventions to improve or facilitate linkage to or retention in pre-ART (HIV) care and initiation of ART in low- and middle-income settings - a systematic review.** Journal of the International AIDS Society *17(1)*, 19032, doi: 10.7448/IAS.17.1.19032.

Grov, C., Rendina, H.J., John, S.A. and Parsons, J.T., 2019. **Determining the Roles that Club Drugs, Marijuana, and Heavy Drinking Play in PrEP Medication Adherence Among Gay and Bisexual Men: Implications for Treatment and Research**. AIDS Behav *23(5)*, 1277–1286, doi: 10.1007/s10461-018-2309-9.

Grov, C., Whitfield, T.H.F., Rendina, H.J., Ventuneac, A. and Parsons, J.T., 2015. **Willingness to Take PrEP and Potential for Risk Compensation Among Highly Sexually Active Gay and Bisexual Men**. AIDS Behav *19*, 2234–2244, doi: 10.1007/s10461-015-1030-1.

Grundlingh, L., 1999. **HIV/AIDS in South Africa: a case of failed responses because of stigmatization, discrimination and morality, 1983 - 1994**. New Contree, *46*, 55-81.

Gust, D.A., Soud, F., Hardnett, F., Malotte, C.K., Rose, C., Kebaabetswe, P., Makgekgenene, L., Henderson, F., Paxton, L., Segolodi, T. and Kilmarx, P.H., 2016. **Evaluation of sexual risk behavior among study participants in the TDF2 PrEP study among heterosexual adults in Botswana**. J Acquir Immune Defic Syndr *73(5)*, 556–563, doi: 10.1097/QAI.0000000000001143.

Haberer, J.E., Bangsberg, D., Baeten, J., Curran, K., Koechlin, F., Amico, K., Anderson, P., Mugo, N., Venter, F., Goicochea, P., Caceres, C. and O'Reilly, K., 2015. **Defining success with HIV pre-exposure prophylaxis: a prevention-effective adherence paradigm**. Aids *29*, 1277–1285, doi: 10.1097/QAD.0000000000000647.

Haffejee, F., Maughan-Brown, B., Buthelezi, T. and Kharsany, A.B.M., 2018. **Perceived HIV-related stigma among university students in South Africa: implications for HIV testing**. African journal of AIDS research *17(2)*, 109–118.

Hailemariam, T.G., Nathan, S., Seifu, C. and Rawstorne, P., 2019. **P007 Uptake of couples HIV testing and counselling in sub-saharan africa: a systematic review and meta-analysis**. Sex Transm Infect *95*, A85–A86, doi: 10.1136/sextrans-2019-sti.219

Hall, B.J., Sou, K.-L., Beanland, R., Lacky, M., Tso, L.S., Ma, Q., Doherty, M. and Tucker, J.D., 2017. **Barriers and Facilitators to Interventions Improving Retention in HIV Care: A Qualitative Evidence Meta-Synthesis.** AIDS Behav *21(6)*, 1755–1767, doi: 10.1007/s10461-016-1537-0.

Hallberg, L.R.-M., 2006. **The "core category" of grounded theory: Making constant comparisons**. International Journal of Qualitative Studies on Health and Well-being *1(3)*, 141–148, doi:10.1080/17482620600858399.

Hanington, B. and Martin, B., 2012. **Universal Methods of Design: 100 Ways to Research Complex Problems, Develop Innovative Ideas, and Design Effective Solutions**. Rockport Publishers, Beverly MA USA.

Hannaford, A., Khoza, B., Moll, A.P. and Shenoi, S.V., 2018. 1300. **Young Heterosexual Men in Rural South Africa Want Access to PrEP**. Open Forum Infect Dis *5(Suppl 1)*, S397. doi:10.1093/ofid/ofy210.1133.

Hannaford, A., Lim, J., Moll, A.P., Khoza, B. and Shenoi, S.V., 2020. **'PrEP should be for men only': Young heterosexual men's views on PrEP in rural South Africa**. Global Public Health *15(9*), 1337-1348.

Harris, T.G., Flören, S., Mantell, J.E., Nkambule, R., Lukhele, N.G., Malinga, B.P., Chekenyere, R. and Kidane, A., 2021. **HIV and aging among adults aged 50 years and older on**

antiretroviral therapy in Eswatini. Afr J AIDS Res *20(1)*, 107–115, doi: 10.2989/16085906.2021.1887301.

Hendricks, L., Eshun-Wilson, I. and Rohwer, A., 2021. **A mega-aggregation framework synthesis of the barriers and facilitators to linkage, adherence to ART and retention in care among people living with HIV**. Syst Rev *10(1)*, 1-28, doi: 10.1186/s13643-021-01582-z.

Hendrickson, Z.M., Naugle, D.A., Tibbels, N., Dosso, A., M Van Lith, L., Mallalieu, E.C., Kamara, D., Dailly-Ajavon, P., Cisse, A., Seifert Ahanda, K., Thaddeus, S., Babalola, S. and Hoffmann, C.J., 2019. **"You Take Medications, You Live Normally": The Role of Antiretroviral Therapy in Mitigating Men's Perceived Threats of HIV in Côte d'Ivoire.** AIDS Behav *23(9)*, 2600–2609, doi: 10.1007/s10461-019-02614-5.

Hensen, B., Taoka, S., Lewis, J.J., Weiss, H.A. and Hargreaves, J., 2014. **Systematic review of strategies to increase men's HIV-testing in sub-Saharan Africa.** AIDS (London, England) *28(14)*, 2133–2145, doi: 10.1097/QAD.0000000000000395.

Herek, G.M., 1999. **AIDS and Stigma**. American Behavioral Scientist *42(7)*, 1106–1116, doi: 10.1177/0002764299042007004.

Herek, G.M., Widaman, K.F. and Capitano, J.P., 2005. **When Sex Equals AIDS: Symbolic Stigma and Heterosexual Adults' Inaccurate Beliefs about Sexual Transmission of AIDS.** Social Problems *52(1)*, 15–37, doi: 10.1525/sp.2005.52.1.15.

Higgins, J.A., Hoffman, S. and Dworkin, S.L., 2010. **Rethinking gender, heterosexual men, and women's vulnerability to HIV/AIDS**. American journal of public health *100(3)*, 435–445.

Hill, L.M., Maseko, B., Chagomerana, M., Hosseinipour, M.C., Bekker, L.-G., Pettifor, A. and Rosenberg, N.E., 2020. **HIV risk, risk perception, and PrEP interest among adolescent girls and young women in Lilongwe, Malawi: operationalizing the PrEP cascade.** Journal of the International AIDS Society *23*, e25502, doi: 10.1002/jia2.25502.

Hillis, A., Germain, J., Hope, V., McVeigh, J. and Van Hout, M.C., 2020. **Pre-exposure Prophylaxis (PrEP) for HIV Prevention Among Men Who Have Sex with Men (MSM): A Scoping Review on PrEP Service Delivery and Programming.** AIDS Behav *24(11)*, 3056–3070, doi: 10.1007/s10461-020-02855-9.

Hirsch, D. and Kachtan, D.G., 2018. **Is "Hegemonic Masculinity" Hegemonic as Masculinity? Two Israeli Case Studies**. Men and Masculinities *21(5)*, 687–708, doi: 10.1177/1097184X17696186.

Hlongwa, M., Mashamba-Thompson, T., Makhunga, S., Murararaneza, C. and Hlongwana, K., 2020. **Men's perspectives on HIV self-testing in sub-Saharan Africa: a systematic review and meta-synthesis**. BMC Public Health *20(1)*, 1-13. doi: 10.1186/s12889-020-8184-0.

Hodges-Mameletzis, I., Dalal, S., Msimanga-Radebe, B., Rodolph, M. and Baggaley, R., 2018. **Going Global: The Adoption of the World Health Organization's Enabling Recommendation on Oral Pre-Exposure Prophylaxis for HIV**. Sexual Health *15(6)*, 489–500, doi:10.1071/SH18125.

Hoffman, R.M., Moyo, C., Balakasi, K.T., Siwale, Z., Hubbard, J., Bardon, A., Fox, M.P., Kakwesa, G., Kalua, T., Nyasa-Haambokoma, M., Dovel, K., Campbell, P.M., Tseng, C.-H., Pisa, P.T., Cele, R., Gupta, S., Benade, M., Long, L., Xulu, T., Sanne, I. and Rosen, S., 2021. **Multimonth dispensing of up to 6 months of antiretroviral therapy in Malawi and Zambia (INTERVAL): a cluster-randomised, non-blinded, non-inferiority trial.** Lancet Glob Health *9(5)*, e628–e638, doi: 10.1016/S2214-109X(21)00039-5.

Hoffmann, M., MacCarthy, S., Batson, A., Crawford-Roberts, A., Rasanathan, J., Nunn, A., Silva, L.A. and Dourado, I., 2016. **Barriers along the care cascade of HIV-infected men in a large urban center of Brazil**. AIDS Care *28(1)*, 57–62, doi: 10.1080/09540121.2015.1062462.

Hojilla, J.C., Koester, K.A., Cohen, S.E., Buchbinder, S., Ladzekpo, D., Matheson, T. and Liu, A.Y., 2016. **Sexual Behavior, Risk Compensation, and HIV Prevention Strategies Among Participants in the San Francisco PrEP Demonstration Project: A Qualitative Analysis of Counseling Notes**. AIDS Behav *20(7)*, 1461–1469. doi:10.1007/s10461-015-1055-5

Hojilla, J.C., Vlahov, D., Crouch, P.-C., Dawson-Rose, C., Freeborn, K. and Carrico, A., 2018. **HIV Pre-exposure Prophylaxis (PrEP) Uptake and Retention Among Men Who Have Sex with Men in a Community-Based Sexual Health Clinic**. AIDS Behav *22(4)*, 1096–1099, doi:10.1007/s10461-017-2009-x.

Holmes, D., 2012. **FDA paves the way for pre-exposure HIV prophylaxis**. The Lancet *380(9839)*, 325, doi: 10.1016/S0140-6736(12)61235-5.

Horter, S., Thabede, Z., Dlamini, V., Bernays, S., Stringer, B., Mazibuko, S., Dube, L., Rusch, B., and Jobanputra, K., 2017. **"Life is so easy on ART, once you accept it": Acceptance, denial and linkage to HIV care in Shiselweni, Swaziland**. Social Science & Medicine *176*, 52–59, doi: 10.1016/j.socscimed.2017.01.006.

Horter, S., Wringe, A., Thabede, Z., Dlamini, V., Kerschberger, B., Pasipamire, M., Lukhele, N., Rusch, B. and Seeley, J., 2019. **"Is it making any difference?" A qualitative study examining the treatment-taking experiences of asymptomatic people living with HIV in the context of Treat-all in Eswatini**. J Int AIDS Soc *22(1),* e25220, doi: 10.1002/jia2.25220.

Hosseinipour, M., Nelson, J.A.E., Trapence, C., Rutstein, S.E., Kasende, F., Kaunda-Khangamwa, B., Compliment, K., Stanley, C., Cataldo, F., Rosenberg, N.E., Tweya, H., Gugsa, S., Sampathkumar, V., Schouten, E., Eliya, M., Chimbwandira, F., Kapito-Tembo, A. and Phiri, S., 2017. **Viral Suppression and HIV Drug Resistance at 6 Months Among Women in Malawi's Option B+ Program: Results From the PURE Malawi Study**. J Acquir Immune Defic Syndr *75(Suppl 2)*, 149-155, doi: 10.1097/QAI.0000000000001368.

Houle, B., Mojola, S.A., Angotti, N., Schatz, E., Gómez-Olivé, F.X., Clark, S.J., Williams, J.R., Kabudula, C., Tollman, S. and Menken, J., 2018. **Sexual behavior and HIV risk across the life course in rural South Africa: trends and comparisons**. AIDS Care *30(11)*, 1435–1443, doi: 10.1080/09540121.2018.1468008.

Huber, A., Pascoe, S., Nichols, B.E., Long, L., Kuchukhidze, S., Phiri, B., Tchereni, T. and Rosen, S., 2021. **Differentiated service delivery models for HIV treatment in Malawi, South Africa, and Zambia: A landscape analysis**. Global Health: Science and Practice *9(2)* doi: 10.1101/2020.08.25.20181818.

Huerga, H., Van Cutsem, G., Ben Farhat, J., Reid, M., Bouhenia, M., Maman, D., Wiesner, L., Etard, J.-F. and Ellman, T., 2016. **Who Needs to Be Targeted for HIV Testing and Treatment in KwaZulu-Natal? Results From a Population-Based Survey**. J Acquir Immune Defic Syndr *73(4)*, 411–418, doi: 10.1097/QAI.0000000000001081.

Human Rights Watch, 2018. **World Report 2018: Rights Trends in Swaziland**. URL: https://www.hrw.org/world-report/2018/country-chapters/eswatini-formerly-swaziland, accessed [02.02.2019].

Huntingdon, B., de Wit, J., Duracinsky, M. and Juraskova, I., 2020. **Belief, Covariates, and Impact of the "Undetectable = Untransmittable" Message Among People Living with HIV in Australia**. AIDS Patient Care STDS *34(5)*, 205–212, doi: 10.1089/apc.2019.0300.

Hussein, M., Dibaba, B. and Wondu, Y., 2020. **Factors Influencing Effectiveness of Peer Education Against Nonadherence to Antiretroviral Therapy Among Adult People Living with HIV/AIDS: A Pre-Post Intervention Study in Arsi Zone, Ethiopia**. HIV AIDS (Auckl) *12*, 1–7, doi: 10.2147/HIV.S228330.

Ihonvbere, J.O., 1997. **From Despotism to Democracy: The Rise of Multiparty Politics in Malawi**. Third World Quarterly *18(2)*, 225–247.

Irungu, E.M. and Baeten, J.M., 2020. **PrEP rollout in Africa: status and opportunity**. Nature Medicine *26(5)*, 655–664, doi: 10.1038/s41591-020-0872-x.

Iwuji, C., Chimukuche, R.S., Zuma, T., Plazy, M., Larmarange, J., Orne-Gliemann, J., Siedner, M., Shahmanesh, M. and Seeley, J., 2020. **Test but not treat: Community members' experiences with barriers and facilitators to universal antiretroviral therapy uptake in rural KwaZulu-Natal, South Africa**. PLOS ONE *15(9)*, e0239513. doi: 10.1371/journal.pone.0239513.

Izudi, J., Alioni, S., Kerukadho, E. and Ndungutse, D., 2016. **Virological failure reduced with HIV-serostatus disclosure, extra baseline weight and rising CD4 cells among HIV-positive adults in Northwestern Uganda**. BMC Infectious Diseases *16*, 614, 1-8. doi: 10.1186/s12879-016-1952-x.

Jani, N., Mathur, S., Kahabuka, C., Makyao, N. and Pilgrim, N., 2021. **Relationship dynamics and anticipated stigma: Key considerations for PrEP use among Tanzanian adolescent girls and young women and male partners**. PLOS ONE *16(2)*, e0246717, doi: 10.1371/journal.pone.0246717.

Janz, N. and Becker, M., 1984. **The Health Belief Model: A Decade Later.** Health education quarterly, *11(1)*, 1-47, doi: 10.1177/109019818401100101.

Johnson, C., Kumwenda, M., Meghji, J., Choko, A.T., Phiri, M., Hatzold, K., Baggaley, R., Taegtmeyer, M., Terris-Prestholt, F., Desmond, N. and Corbett, E.L., 2021. **"Too old to test?": A life course approach to HIV-related risk and self-testing among midlife-older adults in Malawi**. BMC Public Health *21(1)*, 650, 1-13, doi: 10.1186/s12889-021-10573-7.

Johnson, J., 2018a. **Feminine futures: female initiation and aspiration in matrilineal Malawi.** Journal of the Royal Anthropological Institute *24(4)*, 786–803, doi: 10.1111/1467-9655.12917.

Johnson, J., 2018b. **In Search of Gender Justice: Rights and Relationships in Matrilineal Malawi**. Cambridge University Press, Cambridge New York Melbourne.

Johnson, L.F., 2015. **Rates of HIV testing and diagnosis in South Africa: successes and challenges**. Aids *29(11)*, 1401–1409, doi: 10.1097/QAD.0000000000000721.

Justman, J., Reed, J.B., Bicego, G., Donnell, D., Li, K., Bock, N., Koler, A., Philip, N.M., Mlambo, C.K., Parekh, B.S., Duong, Y.T., Ellenberger, D.L., El-Sadr, W.M. and Nkambule, R., 2017. **Swaziland HIV Incidence Measurement Survey (SHIMS): a prospective national cohort study**. The Lancet HIV *4*, e83–e92, doi: 10.1016/S2352-3018(16)30190-4.

Kalichman, S.C. and Eaton, L., 2017. **Alcohol-antiretroviral interactive toxicity beliefs as a potential barrier to HIV pre-exposure prophylaxis among men who have sex with men**. J Int AIDS Soc *20(1)*, 21534, doi:10.7448/IAS.20.1.21534.

Kalichman, S., Mathews, C., Banas, E. and Kalichman, M., 2019. **Alcohol-related intentional nonadherence to antiretroviral therapy among people living with HIV, Cape Town, South Africa**. AIDS Care *31(8)*, 951–957, doi: 10.1080/09540121.2019.1587357.

Kalichman, S.C., Shkembi, B., Wanyenze, R.K., Naigino, R., Bateganya, M.H., Menzies, N.A., Lin, C.-D., Lule, H. and Kiene, S.M., 2020. **Perceived HIV stigma and HIV testing among men and women in rural Uganda: a population-based study**. The Lancet HIV, 7(12), e817-e824, doi: 10.1016/S2352-3018(20)30198-3.

Kalichman, S.C., Simbayi, L.C., Jooste, S., Toefy, Y., Cain, D., Cherry, C. and Kagee, A., 2005. **Development of a brief scale to measure AIDS-related stigma in South Africa**. AIDS Behav *9(2)*, 135–143, doi:10.1007/s10461-005-3895-x.

Kalinga, O.J.M., 1998. **The Production of History in Malawi in the 1960s: The Legacy of Sir Harry Johnston, the Influence of the Society of Malawi and the Role of Dr Kamuzu Banda and His Malawi Congress Party**. African Affairs *97*(389), 523–549.

Katz, M.H., Douglas, J.M., Bolan, G.A., Marx, R., Sweat, M., Park, M.-S. and Buchbinder, S.P., 1996. **Depression and use of mental health services among HIV-infected men**. AIDS Care *8(4)*, 433–442, doi: 10.1080/09540129650125623.

Kaufman, M.R., Cornish, F., Zimmerman, R.S. and Johnson, B.T., 2014. **Health Behavior Change Models for HIV Prevention and AIDS Care: Practical Recommendations for a Multi-Level Approach**. J Acquir Immune Defic Syndr *66(Suppl 3)*, S250–S258, doi: 10.1097/QAI.0000000000000236.

Kebaabetswe, P., Manyake, K., Kadima, E., Auletta-Young, C., Chakalisa, U., Sekoto, T., Dintwa, O.M., Mmalane, M., Makhema, J., Lebelonyane, R., Bachanas, P., Plank, R., Gaolathe, T., Lockman, S. and Holme, M.P., 2020. **Barriers and facilitators to linkage to care and ART initiation in the setting of high ART coverage in Botswana.** AIDS Care *32(6)*, 722–728, doi: 10.1080/09540121.2019.1640843.

Kennedy, T., Regehr, G., Rosenfield, J., Roberts, S.W. and Lingard, L., 2004. **Exploring the Gap Between Knowledge and Behavior: A Qualitative Study of Clinician Action Following an Educational Intervention**. Academic Medicine *79(5)*, 386–393.

Khawcharoenporn, T., Kendrick, S. and Smith, K., 2012. **HIV Risk Perception and Preexposure Prophylaxis Interest Among a Heterosexual Population Visiting a Sexually Transmitted Infection Clinic**. AIDS Patient Care and STDs *26(4)*, 222–233, doi: 10.1089/apc.2011.0202.

Kilanowski, J.F., 2017. **Breadth of the Socio-Ecological Model**. Journal of Agromedicine *22(4)*, 295–297, doi: 10.1080/1059924X.2017.1358971.

Klein, H. and Washington, T.A., 2020. **Older Versus Younger Men Who Have Sex with Men: Awareness of and Potential Barriers to the Use of Pre-Exposure Prophylaxis (PrEP) Medication to Prevent the Transmission of HIV**. J AIDS HIV Treat *2(2)*, 42–50, doi:10.33696/aids.2.006.

Knol, M.J., Cessie, S.L., Algra, A., Vandenbroucke, J.P. and Groenwold, R.H.H., 2012. **Overestimation of risk ratios by odds ratios in trials and cohort studies: alternatives to logistic regression.** Canadian Medical Association Journal *184(8)*, 895–899, doi: 10.1503/cmaj.101715.

Koechlin, F.M., Fonner, V.A., Dalglish, S.L., O'Reilly, K.R., Baggaley, R., Grant, R.M., Rodolph, M., Hodges-Mameletzis, I. and Kennedy, C.E., 2017. **Values and Preferences on the Use of Oral Pre-exposure Prophylaxis (PrEP) for HIV Prevention Among Multiple Populations: A Systematic Review of the Literature**. AIDS Behav *21(5)*, 1325–1335, doi: 10.1007/s10461-016-1627-z.

Koss, C.A., Charlebois, E.D., Ayieko, J., Kwarisiima, D., Kabami, J., Balzer, L.B., Atukunda, M., Mwangwa, F., Peng, J., Mwinike, Y., Owaraganise, A., Chamie, G., Jain, V., Sang, N., Olilo, W., Brown, L.B., Marquez, C., Zhang, K., Ruel, T.D., Camlin, C.S., Rooney, J.F., Black, D., Clark, T.D., Gandhi, M., Cohen, C.R., Bukusi, E.A., Petersen, M.L., Kamya, M.R. and Havlir, D.V., 2020. **Uptake, engagement, and adherence to pre-exposure prophylaxis offered after population HIV testing in rural Kenya and Uganda: 72-week interim analysis of observational data from the SEARCH study**. The Lancet HIV *7(4)*, e249–e261, doi: 10.1016/S2352-3018(19)30433-3.

Koss, C.A., Liu, A.Y., Castillo-Mancilla, J., Bacchetti, P., McHugh, C., Kuncze, K., Morrow, M., Louie, A., Seifert, S., Okochi, H., MaWhinney, S., Gandhi, M. and Anderson, P.L., 2018. **Similar tenofovir hair concentrations in men and women after directly observed dosing of tenofovir disoproxil fumarate/emtricitabine: implications for preexposure prophylaxis adherence monitoring**. AIDS *32(15)*, 2189–2194, doi: 10.1097/QAD.0000000000001935.

Kou, N., Djiometio, J.N., Agha, A., Tynan, A.-M. and Antoniou, T., 2017. **Examining the health and health service utilization of heterosexual men with HIV: a community-informed scoping review**. AIDS Care *29(5)*, 552–558, doi: 10.1080/09540121.2016.1224306.

Kumwenda, M.K., Corbett, E.L., Chikovore, J., Phiri, M., Mwale, D., Choko, A.T., Nliwasa, M., Sambakunsi, R., Taegtmeyer, M. and Gutteberg, T.J., 2018. **Discordance, disclosure and normative gender roles: barriers to couple testing within a community-level**

HIV self-testing intervention in urban Blantyre, Malawi. AIDS Behav *22(8)*, 2491–2499, doi: 10.1007/s10461-018-2038-0.

Kun, K.E., Couto, A., Jobarteh, K., Zulliger, R., Pedro, E., Malimane, I., Auld, A. and Meldonian, M., 2019. **Mozambique's Community Antiretroviral Therapy Support Group Program: The Role of Social Relationships in Facilitating HIV/AIDS Treatment Retention**. AIDS Behav *23(9)*, 2477–2485, doi: 10.1007/s10461-019-02419-6.

Kusemererwa, S., Akena, D., Nakanjako, D., Kigozi, J., Nanyunja, R., Nanfuka, M., Kizito, B., Okello, J.M. and Sewankambo, N.K., 2021. **Strategies for retention of heterosexual men in HIV care in sub-Saharan Africa: A systematic review**. PLOS ONE *16(2)*, e0246471, doi: 10.1371/journal.pone.0246471.

Kwan, T.H. and Lee, S.S., 2018. **Predictors of HIV Testing and Their Influence on PrEP Acceptance in Men Who Have Sex with Men: A Cross-Sectional Study**. AIDS Behav *22(4)*, 1150–1157. doi:10.1007/s10461-017-1978-0

Lamptey, P., Merson, M., Piot, P., Reddy, K.S. and Dirks, R., 2011. **Informing the 2011 UN Session on Noncommunicable Diseases: Applying Lessons from the AIDS Response**. PLOS Medicine *8(9)*, e1001086, doi: 10.1371/journal.pmed.1001086.

Lankowski, A.J., Siedner, M.J., Bangsberg, D.R. and Tsai, A.C., 2014. I**mpact of Geographic and Transportation-Related Barriers on HIV Outcomes in Sub-Saharan Africa: A Systematic Review**. AIDS Behav *18(7)*, 1199–1223, doi: 10.1007/s10461-014-0729-8.

Launiala, A. **How much can a KAP survey tell us about people's knowledge, attitudes and practices? Some observations from medical anthropology research on malaria in pregnancy in Malawi**, 2009. Anthropology Matters *11(1), 1-13.*

Leddy, A.M., Hahn, J.A., Getahun, M., Emenyonu, N.I., Woolf-King, S.E., Sanyu, N., Katusiime, A., Fatch, R., Chander, G., Hutton, H.E., Muyindike, W.R. and Camlin, C.S., 2021. **Cultural Adaptation of an Intervention to Reduce Hazardous Alcohol Use Among People Living with HIV in Southwestern Uganda**. AIDS Behav *25*, 237–250, doi: 10.1007/s10461-021-03186-z

Léegaré, F. and Zhang, P., 2013. **Barriers and facilitators: Strategies for Identification and Measurement**, in: Straus, S.E., Tetroe, J., Graham, I.D. (Eds.), Knowledge Translation in Health Care. John Wiley & Sons, Ltd, Chichester, UK, 121–136. doi:10.1002/9781118413555.ch11

Leichliter, J.S., Paz-Bailey, G., Friedman, A.L., Habel, M.A., Vezi, A., Sello, M., Farirai, T. and Lewis, D.A., 2011. **'Clinics aren't meant for men': Sexual health care access and seeking behaviours among men in Gauteng province, South Africa**. SAHARA-J: Journal of Social Aspects of HIV/AIDS *8(2),* 82-88.

Lenahan, J.L., McCarthy, D.M., Davis, T.C., Curtis, L.M., Serper, M. and Wolf, M.S., 2013. **A Drug by Any Other Name: Patients' Ability to Identify Medication Regimens and Its Association with Adherence and Health Outcomes**. Journal of Health Communication *18(Suppl 1)*, 31–39, doi: 10.1080/10810730.2013.825671.

Lewis, M.A., McBride, C.M., Pollak, K.I., Puleo, E., Butterfield, R.M. and Emmons, K.M., 2006. **Understanding health behavior change among couples: an interdependence and communal coping approach**. Soc Sci Med *62(6)*, 1369–1380, doi: 10.1016/j.socscimed.2005.08.006.

Lincoln, Y. S. and Guba, E.G., 1986. **But is it rigorous? Trustworthiness and authenticity in naturalistic evaluation.** New directions for program evaluation *30*, 73–84, doi: 10.1002/ev.1427.

Link, B.G., Wells, J., Phelan, J.C. and Yang, L., 2015. **Understanding the importance of "symbolic interaction stigma": How expectations about the reactions of others adds to the burden of mental illness stigma**. Psychiatric Rehabilitation Journal *38(2)*, 117–124, doi: 10.1037/prj0000142.

Liu, A.Y., Vittinghoff, E., Chillag, K., Mayer, K., Thompson, M., Grohskopf, L., Colfax, G., Pathak, S., Gvetadze, R., O'Hara, B., Collins, B., Ackers, M., Paxton, L. and Buchbinder, S.P., 2013. **Sexual risk behavior among HIV-uninfected men who have sex with men (MSM) participating in a tenofovir pre-exposure prophylaxis (PrEP) randomized trial in the United States**. J Acquir Immune Defic Syndr *64(1)*, 87–94, doi: 10.1097/QAI.0b013e31828f097a.

Long, L., Kuchukhidze, S., Pascoe, S., Nichols, B.E., Fox, M.P., Cele, R., Govathson, C., Huber, A.N., Flynn, D. and Rosen, S., 2020. **Retention in Care and Viral Suppression in Differentiated Service Delivery Models for HIV Treatment in Sub-Saharan Africa: A Rapid Systematic Review**. **Preprint**. doi: 10.20944/preprints202005.0314.v1

Mabuza, K. and Dlamini, T., 2017. **History of the HIV epidemic and response in Swaziland**. African Journal of AIDS Research *16(4)*, v-ix, doi: 10.2989/16085906.2017.1402493.

MacCarthy, S., Brignol, S., Reddy, M., Nunn, A. and Dourado, I., 2016. **Late presentation to HIV/AIDS care in Brazil among men who self-identify as heterosexual.** Rev. Saúde Pública *50(54)*, 1-10, doi:10.1590/S1518-8787.2016050006352

Mack, N., Evens, E.M., Tolley, E.E., Brelsford, K., Mackenzie, C., Milford, C., Smit, J.A., Kimani, J., 2014a. **The importance of choice in the rollout of ARV-based prevention to user groups in Kenya and South Africa: a qualitative study**. Journal of the International AIDS Society *17(Suppl 2)*, 1-6, doi: 10.7448/IAS.17.3.19157.

Mack, N., Odhiambo, J., Wong, C.M. and Agot, K., 2014b. **Barriers and facilitators to pre-exposure prophylaxis (PrEP) eligibility screening and ongoing HIV testing among target populations in Bondo and Rarieda, Kenya: results of a consultation with community stakeholders**. BMC Health Serv Res *14(1)*, 1-12, doi: 10.1186/1472-6963-14-231.

MacPhail, C., 2003. **Challenging dominant norms of masculinity for HIV prevention**. African Journal of AIDS Research *2(2)*, 141–149, doi: 10.2989/16085906.2003.9626568.

Madiba, S. and Josiah, U., 2019. **Perceived Stigma and Fear of Unintended Disclosure are Barriers in Medication Adherence in Adolescents with Perinatal HIV in Botswana: A Qualitative Study**. Biomed Res Int *2019(9623159)*, 1-9, doi: 10.1155/2019/9623159.

Madise, S., 2015. **The Ngoni of Malawi (A History Revisited)**. SSRN Electronic Journal, 1-12, doi: 10.2139/ssrn.2587050.

Maduka, O. and Tobin-West, C.I., 2013. **Adherence counseling and reminder text messages improve uptake of antiretroviral therapy in a tertiary hospital in Nigeria**. Nigerian Journal of Clinical Practice *16(3)*, 302–308.

Magaço, A., Dovel, K., Cataldo, F., Nhassengo, P., Hoffman, R., Nerua, L., Tique, J., Saide, M., Couto, A., Mbofana, F., Gudo, E., Cuco, R.M. and Chicumbe, S., 2019. **"Good health" as a barrier and facilitator to ART initiation: a qualitative study in the era of test-and-treat in Mozambique.** Cult Health Sex *21(9)*, 1059–1073, doi: 10.1080/13691058.2018.1535091.

Mahalik, J.R., Burns, S.M. and Syzdek, M., 2007. **Masculinity and perceived normative health behaviors as predictors of men's health behaviors.** Social Science & Medicine *64(11)*, 2201–2209, doi: 10.1016/j.socscimed.2007.02.035.

Malavé, S., Ramakrishna, J., Heylen, E., Bharat, S. and Ekstrand, M.L., 2014. **Differences in testing, stigma, and perceived consequences of stigmatization among heterosexual men and women living with HIV in Bengaluru, India**. AIDS Care *26(3)*, 396–403, doi:10.1080/09540121.2013.819409.

Manavi, K., McMillan, A., Ogilvie, M. and Scott, G., 2004. **Heterosexual men and women with HIV test positive at a later stage of infection than homo- or bisexual men.** Int J STD AIDS *15(12)*, 811–814, doi: 10.1258/0956462042563585.

Mandiwa, C. and Namondwe, B., 2019. **Uptake and correlates of HIV testing among men in Malawi: evidence from a national population–based household survey.** BMC Health Serv Res *19(1)*, 1-8, doi:10.1186/s12913-019-4031-3.

Mantell, J.E., Masvawure, T.B., Mapingure, M., Apollo, T., Gwanzura, C., Block, L., Bennett, E., Preko, P., Musuka, G. and Rabkin, M., 2019. **Engaging men in HIV programmes: a qualitative study of male engagement in community-based antiretroviral refill groups in Zimbabwe.** Journal of the International AIDS Society *22(10)*, e25403, doi: 10.1002/jia2.25403.

Manthey, J., Shield, K.D., Rylett, M., Hasan, O.S., Probst, C. and Rehm, J., 2019. **Global alcohol exposure between 1990 and 2017 and forecasts until 2030: a modelling study.** The Lancet *393(10190)*, 2493–2502.

Maoulidi, M., 2013. **Health Needs Assessment for Blantyre City, Malawi (No. 29)**, Millennium Cities Initiative, Social Sector Working Paper Series, Columbia University, New York. URL: http://mci.ei.columbia.edu/files/2014/04/Blantyre-Health-NA-Dec20132.pdf

Marcus, J.L., Glidden, D.V., Mayer, K.H., Liu, A.Y., Buchbinder, S.P., Amico, K.R., McMahan, V., Kallas, E.G., Montoya-Herrera, O., Pilotto, J. and Grant, R.M., 2013. **No Evidence of Sexual Risk Compensation in the iPrEx Trial of Daily Oral HIV Preexposure Prophylaxis.** PLOS ONE *8(12)*, e81997, doi: 10.1371/journal.pone.0081997

Marcus, J.L., Hurley, L.B., Hare, C.B., Nguyen, D.P., Phengrasamy, T., Silverberg, M.J., Stoltey, J.E., and Volk, J.E, 2016. **Preexposure Prophylaxis for HIV Prevention in a Large Integrated Health Care System: Adherence, Renal Safety, and Discontinuation**. Journal of acquired immune deficiency syndromes *73(5)*, 540–46, doi: 10.1097/QAI.0000000000001129.

Maughan-Brown, B. and Nyblade, L., 2014. **Different dimensions of HIV-related stigma may have opposite effects on HIV testing: evidence among young men and women in South Africa**. AIDS Behav *18(5)*, 958–965 doi: doi:10.1007/s10461-013-0636-4.

Mavundla, S.D., Strode, A. and Dlamini, D.C., 2020. **Marital Power Finally Obliterated: The History of the Abolition of the Marital Power in Civil Marriages in Eswatini.** Potchefstroom Electronic Law Journal *23(1)*, 1–19, doi:10.17159/1727-3781/2020/v23i0a7504.

Mayer, C.M., Owaraganise, A., Kabami, J., Kwarisiima, D., Koss, C.A., Charlebois, E.D., Kamya, M.R., Petersen, M.L., Havlir, D.V. and Jewell, B.L., 2019. **Distance to clinic is a barrier to PrEP uptake and visit attendance in a community in rural Uganda**. Journal of the International AIDS Society *22(4)*, e25276, 1-8, doi:10.1002/jia2.25276.

Mbalinda, S.N., Bakeera-Kitaka, S., Lusota, D.A., Magongo, E.N., Musoke, P. and Kaye, D.K., 2020. **Barriers and facilitators for transitioning of young people from adolescent clinics to adult ART clinics in Uganda: unintended consequences of successful adolescent ART clinics.** BMC Health Serv Res *20(1),* 1-12*,* doi: 10.1186/s12913-020-05701-9.

Mbonu, N.C., van den Borne, B. and De Vries, N.K., 2009. **Stigma of People with HIV/AIDS in Sub-Saharan Africa: A Literature Review**. J Trop Med *2009(145891)*, 1-14, doi: 10.1155/2009/145891.

McCree, D.H., Beer, L., Fugerson, A.G., Tie, Y. and Bradley, E.L.P., 2020. **Social and Structural Factors Associated with Sustained Viral Suppression Among Heterosexual Black Men with Diagnosed HIV in the United States, 2015-2017**. AIDS Behav *24(8)*, 2451–2460, doi: 10.1007/s10461-020-02805-5.

McMahon, J.M., Braksmajer, A., Zhang, C., Leblanc, N., Chen, M., Aidala, A. and Simmons, J., 2019. **Syndemic factors associated with adherence to antiretroviral therapy among HIV-positive adult heterosexual men.** AIDS Research and Therapy *16(1)*, 1-10, doi: 10.1186/s12981-019-0248-9.

McMahon, S.A. and Winch, P.J., 2018. **Systematic debriefing after qualitative encounters: an essential analysis step in applied qualitative research.** BMJ Global Health *3(5)*, e000837, 1-6, doi: 10.1136/bmjgh-2018-000837.

Meadowbrooke, C.C., Veinot, T.C., Loveluck, J., Hickok, A. and Bauermeister, J.A., 2014. **Information Behavior and HIV Testing Intentions Among Young Men at Risk for HIV/AIDS**. J Assoc Inf Sci Technol *65(3)*, 609–620, doi: 10.1002/asi.23001.

Mehrotra, M.L., Glidden, D.V., McMahan, V., Amico, K.R., Hosek, S., Defechereux, P., Mayer, K.H., Veloso, V.G., Bekker, L.-G., Avelino-Silva, V.I., Schechter, M. and Grant, R.M., 2016. **The Effect of Depressive Symptoms on Adherence to Daily Oral PrEP in Men who have Sex with Men and Transgender Women: A Marginal Structural Model Analysis of The iPrEx OLE Study**. AIDS Behav *20(7)*, 1527–1534, doi: 10.1007/s10461-016-1415-9.

Meireles, M.V., Pascom, A.R.P. and Duarte, E.C., 2018. **Factors associated with early virological response in HIV-infected individuals starting antiretroviral therapy in Brazil (2014–2015): results from a large HIV surveillance cohort**. Journal of acquired immune deficiency syndromes, *78(4)*, e19-e27.

Mfecane, S., 2008. **Living with HIV as a man: Implications for masculinity**. Psychology in Society *(36)*, 45–59.

Mijiti, P., Yahepu, D., Zhong, X., Sun, Y., Zhao, T., Zhao, Z., Abuduaili, Z., Zhou, H., Meng, F., Dai, J. and Huang, A., 2013. **Awareness of and Willingness to Use Oral Pre-Exposure Prophylaxis for HIV Prevention among HIV-Serodiscordant Heterosexual Couples: A Cross-Sectional Survey in Xinjiang, China**. PLOS ONE *8(7)*, e67392, 1-8, doi: 10.1371/journal.pone.0067392.

Miller, S. J., Harrison, S. E., and Sanasi-Bhola, K, 2021. **A scoping review investigating relationships between depression, anxiety, and the PrEP care continuum in the United States.** International journal of environmental research and public health, 18(21), 11431, doi: 10.3390/ijerph182111431.

Mills, E.J., Beyrer, C., Birungi, J. and Dybul, M.R., 2012. **Engaging Men in Prevention and Care for HIV/AIDS in Africa**. PLOS Medicine *9(2)*, e1001167, 1-4, doi: 10.1371/journal.pmed.1001167.

Mimiaga, M.J., August Oddleifson, D., Meersman, S.C., Silvia, A., Hughto, J.M.W., Landers, S., Brown, E., Loberti, P., 2020. **Multilevel Barriers to Engagement in the HIV Care Continuum Among Residents of the State of Rhode Island Living with HIV**. AIDS Behav *24(4)*, 1133–1150, doi: 10.1007/s10461-019-02677-4.

Ministry of Health, 2019. **Swaziland HIV Incidence Measurement Survey 2 - 2016-2017**. Final Report. Mbabane. URL: https://phia.icap.columbia.edu/wp-content/uploads/2019/05/SHIMS2_Final-Report_05.03.2019_forWEB.pdf, accessed [04.11.2020]

Ministry of Health and Population, Malawi, 2018. **Clinical Management of HIV in Children and Adults**. Lilongwe. URL: https://differentiatedservicedelivery.org/Portals/0/adam/Content/yb4xSSLvE0SW98_z7wTm_w/File/Malawi%20Clinical%20HIV%20Guidelines%202018%20(1).pdf, accessed [18.06.2020]

Ministry of Health, Malawi, 2019. **2019 Policy Updates. Addendum to the 4th Edition of the Malawi Integrated Guidelines and Standard Operating Procedures for Clinical HIV Services**. Lilongwe.URL: https://differentiatedservicedelivery.org/Portals/0/adam/Content/xc8bFLkQfECqbTEpxM8C9Q/File/Malawi%20Clinical%20HIV%20Guidelines%202019%20Addendumversion%208.1.pdf, accessed [05.08.2020]

Ministry of Health, Malawi, 2018. **Malawi Population Based HIV Impact Assessment MPHIA 2015-2016**. Ministry of Health, Lilongwe. URL: https://phia.icap.columbia.edu/wp-content/uploads/2019/08/MPHIA-Final-Report_web.pdf, accessed [01.08.2019]

Ministry of Health, Malawi, 2016. **Malawi Guidelines for Clinical Management of HIV in Children and Adults**. Lilongwe. URL: https://hivstar.lshtm.ac.uk/files/2017/11/2016-Clinical-management-of-HIV-in-children-and-adults-MALAWI.pdf, accessed [29.11.2020]

Ministry of Health, Swaziland National AIDS Programme, Eswatini, 2019. **Clinical Implementation Guide for PrEP Provision in Eswatini,** Mbabane.

Mitchell, E., Kelly-Hanku, A., Mek, A., Trumb, R.N., Persson, A., Worth, H. and Bell, S., 2019. **Caring Masculinities in the Context of HIV Serodiscordant Relationships in Papua New Guinea**. Men and Masculinities *24(2)*, 326-344, doi: 10.1177/1097184X19889659.

Mojola, S.A., Williams, J., Angotti, N. and Gómez-Olivé, F.X., 2015. **HIV after 40 in rural South Africa: A life course approach to HIV vulnerability among middle aged and older adults.** Social science & medicine *143*, 204–212.

Moller, M., 2007. **Exploiting Patterns: A Critique of Hegemonic Masculinity.** Journal of Gender Studies *16(3)*, 263–276, doi: 10.1080/09589230701562970.

Mongo-Delis, A., Mombo, L.E., Mickala, P., Bouassa, W., Bouedy, W.S., M'batchi, B. and Bisseye, C., 2019. **Factors associated with adherence to ARV treatment in people living with HIV/AIDS in a rural area (Koula-Moutou) in East Gabon.** Afr J AIDS Res *18(1)*, 51–57, doi: 10.2989/16085906.2018.1552878.

Mooney, A.C., Gottert, A., Khoza, N., Rebombo, D., Hove, J., Suárez, A.J., Twine, R., MacPhail, C., Treves-Kagan, S., Kahn, K., Pettifor, A. and Lippman, S.A., 2017. **Men's Perceptions of Treatment as Prevention in South Africa: Implications for Engagement in HIV Care and Treatment**. AIDS Education and Prevention *29(3)*, 274–287, doi: 10.1521/aeap.2017.29.3.274.

Moosa, A., Gengiah, T.N., Lewis, L. and Naidoo, K., 2019. **Long-term adherence to antiretroviral therapy in a South African adult patient cohort: a retrospective study**. BMC Infectious Diseases *19(1)*, 1-12, doi: 10.1186/s12879-019-4410-8.

Morrell, R., Jewkes, R. and Lindegger, G., 2012. **Hegemonic Masculinity/Masculinities in South Africa: Culture, Power, and Gender Politics.** Men and Masculinities *15(1)*, 11–30, doi: 10.1177/1097184X12438001.

Morse, J.M., 2015. **Critical analysis of strategies for determining rigor in qualitative inquiry.** Qualitative health research *25(9)*, 1212–22, doi: 10.1177/1049732315588501.

Morse, J.M., 2000. **Determining sample size**. Qualitative health research, *10(1),* 3-5.

Morse, J.M., 1997. **'Perfectly Healthy, but Dead': The Myth of Inter-Rater Reliability.** *Qualitative Health Research 7(4)*, 445–47, doi: 10.1177/104973239700700401.

Motswapong, E.P., 2016. **Zero Stigma, Zero Discrimination and Zero Infection: A Farfetched Dream for Botswana.** Alternation Journal *23(2)*, 105–119.

Mugoya, G.C.T. and Ernst, K., 2014. **Gender differences in HIV-related stigma in Kenya**. AIDS Care *26(2)*, 206–213, doi:10.1080/09540121.2013.808733.

Muhumuza, R., Ssemata, A.S., Kakande, A., Ahmed, N., Atujuna, M., Nomvuyo, M., Bekker, L.-G., Dietrich, J.J., Tshabalala, G., Hornschuh, S., Maluadzi, M., Chibanda-Stranix, L., Nematadzira, T., Weiss, H.A., Nash, S., Fox, J. and Seeley, J., 2021. **Exploring Perceived Barriers and Facilitators of PrEP Uptake among Young People in Uganda, Zimbabwe, and South Africa**. Arch Sex Behav, *50*, 1729–1742, doi:10.1007/s10508-020-01880-y.

Mujugira, A., Celum, C., Coombs, R.W., Campbell, J.D., Ndase, P., Ronald, A., Were, E., Bukusi, E.A., Mugo, N., Kiarie, J. and Baeten, J.M., Partners PrEP Study Team, 2016. **HIV Transmission Risk Persists During the First 6 Months of Antiretroviral Therapy**. J Acquir Immune Defic Syndr *72(5)*, 579–584, doi: 10.1097/QAI.0000000000001019.

Muwonge, T.R., Nsubuga, R., Brown, C., Nakyanzi, A., Bagaya, M., Bambia, F., Katabira, E., Kyambadde, P., Baeten, J.M., Heffron, R., Celum, C., Mujugira A. and Haberer, J.E., 2020. **Knowledge and barriers of PrEP delivery among diverse groups of potential PrEP users in Central Uganda.** PLOS ONE *15(10)*, e0241399, 1-15, doi: 10.1371/journal.pone.0241399

Mwambene, L., 2005. **Divorce in matrilineal Customary Law marriage in Malawi: A comparative analysis with the patrilineal Customary Law marriage in South Africa (Doctoral dissertation)**. University of the Western Cape.

Nachega, J.B., Parienti, J.-J., Uthman, O.A., Gross, R., Dowdy, D.W., Sax, P.E., Gallant, J.E., Mugavero, M.J., Mills, E.J. and Giordano, T.P., 2014. **Lower Pill Burden and Once-Daily Antiretroviral Treatment Regimens for HIV Infection: A Meta-Analysis of Randomized Controlled Trials.** Clinical Infectious Diseases *58(9)*, 1297–1307, doi: 10.1093/cid/ciu046.

Nakamanya, S., Mayanja, B.N., Muhumuza, R., Bukenya, D. and Seeley, J., 2019. **Are treatment supporters relevant in long-term Antiretroviral Therapy (ART) adherence? Experiences from a long-term ART cohort in Uganda**. Global Public Health *14(3)*, 469–480, doi: 10.1080/17441692.2018.1514418.

Nakku-Joloba, E., Pisarski, E.E., Wyatt, M.A., Muwonge, T.R., Asiimwe, S., Celum, C.L., Baeten, J.M., Katabira, E.T. and Ware, N.C., 2019. **Beyond HIV prevention: everyday life priorities and demand for PrEP among Ugandan HIV serodiscordant couples.** Journal of the International AIDS Society *22(1)*, 1-8, doi: 10.1002/jia2.25225.

Nam, S.L., Fielding, K., Avalos, A., Dickinson, D., Gaolathe, T. and Geissler, P.W., 2008. **The relationship of acceptance or denial of HIV-status to antiretroviral adherence among adult HIV patients in urban Botswana.** Social Science & Medicine *67(2)*, 301–310, doi: 10.1016/j.socscimed.2008.03.042.

Nardell, M.F., Lee, Y.S., Rousseau, E., Julies, R., Klaas, P., Vundhla, P., Butler, L., Bassett, I.V., Mellins, C.A., Bekker, L.-G. and Katz, I.T., 2020. **"You are not alone": a qualitative study to explore barriers to ART initiation and implications for a proposed community-based youth treatment club among young adults newly diagnosed with HIV in South Africa.** AIDS Care *33(7)*, 952-961, doi:10.1080/09540121.2020.1861179

Nascimento, M. and Connell, R., 2017. **Reflecting on twenty years of Masculinities: an interview with Raewyn Connell**. Saúde Coletiva *22*, 3975–3980, doi: 10.1590/1413-812320172212.27242016.

National Statistical Office, 2019. **2018 Malawi Population and Housing Census. Main Report.** Zomba. URL: https://malawi.unfpa.org/sites/default/files/resource-pdf/2018%20Malawi%20Population%20and%20Housing%20Census%20Main%20Report%20%281%29.pdf, accessed [08.08.2020].

Negin, J., Martiniuk, A., Cumming, R.G., Naidoo, N., Phaswana-Mafuya, N., Madurai, L., Williams, S. and Kowal, P., 2012. **Prevalence of HIV and chronic comorbidities among older adults**. AIDS *26(0 1)*, S55–S63, doi:10.1097/QAD.0b013e3283558459.

NERCHA, 2018. **National Multisectoral HIV and AIDS Strategic Framework 2018-2023.** Mbabane. URL: https://www.nercha.org.sz/publications/national-multisectoral-hiv-and-aids-strategic-framework-2018-2023, accessed [21.06.2021]

Neuman, M., Obermeyer, C.M. and MATCH Study Group, 2013. **Experiences of stigma, discrimination, care and support among people living with HIV: a four country study.** AIDS Behav *17(5)*, 1796–1808, doi: 10.1007/s10461-013-0432-1.

Ngure, K., Heffron, R., Mugo, N., Irungu, E., Njuguna, N., Mwaniki, L., Thompson, K., Celum, C. and Baeten, J.M., 2014. **Uptake of HIV Self-testing among People Receiving PrEP in Kenya**. AIDS Research and Human Retroviruses *30(S 1)*, A70, doi: 10.1089/aid.2014.5128.abstract

Ngure, K., Ongolly, F., Dolla, A., Awour, M., Mugwanya, K.K., Irungu, E., Mugo, N., Bukusi, E.A., Morton, J., Odoyo, J., Wamoni, E., Barnabee, G., Peebles, K., O'Malley, G., Baeten, J.M. and Partners Scale-Up Project Team, 2020. **"I just believe there is a risk" understanding of undetectable equals untransmissible (U = U) among health providers and HIV-negative partners in serodiscordant relationships in Kenya.** J Int AIDS Soc *23(3)*, e25466, 1-6, doi: 10.1002/jia2.25466.

Nhassengo, P., Cataldo, F., Magaço, A., Hoffman, R.M., Nerua, L., Saide, M., Cuco, R., Hoek, R., Mbofana, F., Couto, A., Gudo, E., Chicumbe, S. and Dovel, K., 2018. **Barriers and facilitators to the uptake of Test and Treat in Mozambique: A qualitative study on patient and provider perceptions**. PLOS ONE *13(12)*, e0205919, 1-17, doi: 10.1371/journal.pone.0205919.

Novitsky, V., Bussmann, H., Okui, L., Logan, A., Moyo, S., Widenfelt, E. van, Mmalane, M., Lei, Q., Holme, M.P., Makhema, J., Lockman, S., Degruttola, V. and Essex, M., 2015. **Estimated age and gender profile of individuals missed by a home-based HIV testing and counselling campaign in a Botswana community.** Journal of the International AIDS Society *18(1)*, 19918, 1-12, doi:10.7448/IAS.18.1.19918

Nyanzi, S., Nyanzi-Wakholi, B. and Kalina, B., 2009. **Male promiscuity: the negotiation of masculinities by motorbike taxi-riders in Masaka, Uganda.** Men and Masculinities *12(1)*, 73–89.

Nyondo-Mipando, A.L., Kapesa, L.S., Salimu, S., Kazuma, T. and Mwapasa, V., 2021. **"Dispense antiretrovirals daily!" restructuring the delivery of HIV services to optimize antiretroviral initiation among men in Malawi**. PLOS ONE *16(2)*, e0247409, 1-17.

Nyoni, T., Sallah, Y.H., Okumu, M., Byansi, W., Lipsey, K. and Small, E., 2020. **The effectiveness of treatment supporter interventions in antiretroviral treatment adherence in sub-Saharan Africa: a systematic review and meta-Analysis**. AIDS Care *32(Suppl 2)*, 214–227, doi: 10.1080/09540121.2020.1742870.

O'Connor, J., Smith, C., Lampe, F., Johnson, M., Sabin, C. and Phillips, A., 2014. **Rate of viral load failure over time in people on ART in the UK Collaborative HIV Cohort (CHIC) study.** J Int AIDS Soc *17(Suppl 3)*, 19527, doi: 10.7448/IAS.17.4.19527.

Okoli, C., Velde, N.V. de, Richman, B., Allan, B., Castellanos, E., Young, B., Brough, G., Eremin, A., Corbelli, G.M., Britton, M.M., Hardy, W.D. and Rios, P. de los, 2020. **Undetectable equals untransmittable (U = U): awareness and associations with health outcomes among people living with HIV in 25 countries.** Sex Transm Infect. *97(1)*, 18-26, doi: 10.1136/sextrans-2020-054551.

Okoror, T.A., Falade, C.O., Walker, E.M., Olorunlana, A. and Anaele, A., 2016. **Social context surrounding HIV diagnosis and construction of masculinity: a qualitative study of stigma experiences of heterosexual HIV positive men in southwest Nigeria.** BMC Public Health *16(1),* 1-10, doi: 10.1186/s12889-016-3165-z.

O'Malley, G., Barnabee, G. and Mugwanya, K., 2019. **Scaling-up PrEP Delivery in Sub-Saharan Africa: What Can We Learn from the Scale-up of ART?** Curr HIV/AIDS Rep *16(2)*, 141–150, doi:10.1007/s11904-019-00437-6.

Ongolly, F.K., Dolla, A., Ngure, K., Irungu, E.M., Odoyo, J., Wamoni, E., Peebles, K., Mugwanya, K., Mugo, N.R., Bukusi, E.A., Morton, J., Baeten, J.M. and O'Malley, G., 2021. **"I Just Decided to Stop:" Understanding PrEP Discontinuation Among Individuals Initiating PrEP in HIV Care Centers in Kenya**. JAIDS Journal of Acquired Immune Deficiency Syndromes *87(1)*, e150-e158, doi: 10.1097/QAI.0000000000002625.

Parsons, J.T., Rendina, H.J., Lassiter, J.M., Whitfield, T.H.F., Starks, T.J. and Grov, C., 2017. **Uptake of HIV Pre-Exposure Prophylaxis (PrEP) in a National Cohort of Gay and Bisexual Men in the United States**. JAIDS Journal of Acquired Immune Deficiency Syndromes *74(3)*, 285–292, doi: 10.1097/QAI.0000000000001251.

Patel, R.C., Stanford-Moore, G., Odoyo, J., Pyra, M., Wakhungu, I., Anand, K., Bukusi, E.A., Baeten, J.M. and Brown, J.M., 2016. **"Since both of us are using antiretrovirals, we have been supportive to each other": facilitators and barriers of pre-exposure prophylaxis use in heterosexual HIV serodiscordant couples in Kisumu, Kenya**. J Int AIDS Soc *19(1)*, 1-10, doi: 10.7448/IAS.19.1.21134

Patton, M.Q., 1990. **Qualitative evaluation and research methods, 2nd ed,** Sage Publications Inc, Beverly Hills, CA, US.

Petrak, J.A., Doyle, A.-M., Smith, A., Skinner, C. and Hedge, B., 2001. **Factors associated with self-disclosure of HIV serostatus to significant others**. British Journal of Health Psychology *6(1)*, 69–79, doi: 10.1348/135910701169061.

Porche, D.J. and Willis, D.G., 2006. **Depression in HIV-Infected Men.** Issues in Mental Health Nursing *27(4)*, 391–401, doi: 10.1080/01612840600569658.

Prem Kumar, S. G., Kumar, G.A., Poluru, R., Schneider, J.A., Dandona, L., Vemu, L., Sudha, T., Mayer, K.H. and Dandona, R., 2013. **Contact with HIV prevention programmes & willingness for new interventions among truckers in India**. Indian Journal of Medical Research *137(6)*, 1061–1071.

PrEPwatch, URL: https://data.prepwatch.org/, accessed [27.11.2021].

Psaros, C., Haberer, J.E., Katabira, E., Ronald, A., Tumwesigye, E., Campbell, J.D., Wangisi, J., Mugwanya, K., Kintu, A., Enyakoit, M., Thomas, K.K., Donnell, D., Krows, M., Kidoguchi, L., Ware, N., Baeten, J.M., Celum, C., Bangsberg, D.R. and Safren, S.A., 2014. **An intervention to support HIV preexposure prophylaxis adherence in HIV-serodiscordant couples in Uganda**. J. Acquir. Immune Defic. Syndr. *66(5)*, 522–529, doi: 10.1097/QAI.0000000000000212.

Pulerwitz, J., Michaelis, A., Verma, R. and Weiss, E., 2010. **Addressing Gender Dynamics and Engaging Men in HIV Programs: Lessons Learned from Horizons Research.** Public Health Reports *125(2)*, 282–292, doi: 10.1177/003335491012500219.

Renju, J., Moshabela, M., McLean, E., Ddaaki, W., Skovdal, M., Odongo, F., Bukenya, D., Wamoyi, J., Bonnington, O., Seeley, J., Zaba, B. and Wringe, A., 2017. '**Side effects' are 'central effects' that challenge retention in HIV treatment programmes in six sub-Saharan African countries: a multicountry qualitative study.** Sex Transm Infect *93(Suppl 3)*, e052971, 1-5, doi: 10.1136/sextrans-2016-052971

Ritchwood, T.D., Malo, V., Jones, C., Metzger, I.W., Atujuna, M., Marcus, R., Conserve, D.F., Handler, L. and Bekker, L.-G., 2020. **Healthcare retention and clinical outcomes among adolescents living with HIV after transition from pediatric to adult care: a systematic review.** BMC Public Health *20(1)*, 1-15, doi: 10.1186/s12889-020-09312-1.

Robinson, T., 2008. **Applying the Socio-ecological Model to Improving Fruit and Vegetable Intake Among Low-Income African Americans**. J Community Health *33(6)*, 395–406, doi: 10.1007/s10900-008-9109-5.

Rodger, A.J., Cambiano, V., Bruun, T., Vernazza, P., Collins, S., Lunzen, J. van, Corbelli, G.M., Estrada, V., Geretti, A.M., Beloukas, A., Asboe, D., Viciana, P., Gutiérrez, F., Clotet, B., Pradier, C., Gerstoft, J., Weber, R., Westling, K., Wandeler, G., Prins, J.M., Rieger, A., Stoeckle, M., Kümmerle, T., Bini, T., Ammassari, A., Gilson, R., Krznaric, I., Ristola, M., Zangerle, R., Handberg, P., Antela, A., Allan, S., Phillips, A.N. and Lundgren, J., 2016. **Sexual Activity Without Condoms and Risk of HIV Transmission in Serodifferent Couples When the HIV-Positive Partner Is Using Suppressive Antiretroviral Therapy**. J Am Med Assoc *16(2)*, 171–181, doi: 10.1001/jama.2016.5148.

Rogers, A.J., Achiro, L., Bukusi, E.A., Hatcher, A.M., Kwena, Z., Musoke, P.L., Turan, J.M., Weke, E. and Darbes, L.A., 2016. **Couple interdependence impacts HIV-related health behaviours among pregnant couples in southwestern Kenya: a qualitative analysis**. J Int AIDS Soc *19(1)*, 21224, 1-10, doi: 10.7448/IAS.19.1.21224.

Rojas Castro, D., Delabre, R.M. and Molina, J.-M., 2019. **Give PrEP a chance: moving on from the "risk compensation" concept.** Journal of the International AIDS Society *22*, e25351, 50-56, doi: 10.1002/jia2.25351.

Rubin, H.J. and Rubin, I.S., 2012. **Qualitative Interviewing: The Art of Hearing Data**, 3rd ed., Sage Publications, Thousand Oaks London New Delhi.

Schatz, E., Seeley, J., Negin, J., Weiss, H.A., Tumwekwase, G., Kabunga, E., Nalubega, P. and Mugisha, J., 2019. **"For us here, we remind ourselves": strategies and barriers to**

ART access and adherence among older Ugandans. BMC Public Health *19(1)*, 1-13, doi: 10.1186/s12889-019-6463-4.

Schneider, J.A., Dandona, R., Pasupneti, S., Lakshmi, V., Chuanhong Liao, Yeldandi, V. and Mayer, K.H., 2010. **Initial Commitment to Pre-Exposure Prophylaxis and Circumcision for HIV Prevention amongst Indian Truck Drivers**. PLOS ONE *5(7)*, e11922, 1–10.

Schüle, E. and Berner-Rodoreda, A., 2010. **HIV & AIDS Gender, and Domestic Violence**. Brot für die Welt, Stuttgart.

Scottish Government, S.A.H., 2009. **Deliberative Methods - Guide 1 in the Social Science Methods Briefings series**. URL: http://www.gov.scot/Topics/Research/About/Social-Research/Methods-Guides/Guide-1, accessed [15.03.2018].

Semitala, F.C., Camlin, C.S., Wallenta, J., Kampiire, L., Katuramu, R., Amanyire, G., Namusobya, J., Chang, W., Kahn, J.G., Charlebois, E.D., Havlir, D.V., Kamya, M.R. and Geng, E.H., 2017. **Understanding uptake of an intervention to accelerate antiretroviral therapy initiation in Uganda via qualitative inquiry.** Journal of the International AIDS Society *20(4)*, e25033, 1-8, doi: 10.1002/jia2.25033

Seymour-Smith, S., Wetherell, M. and Phoenix, A., 2002. '**My Wife Ordered Me to Come!': A Discursive Analysis of Doctors' and Nurses' Accounts of Men's Use of General Practitioners.** Journal of Health Psychology *7(3)*, 253–267, doi: 10.1177/1359105302007003220.

Shamu, S., Shamu, P., Khupakonke, S., Farirai, T., Chidarikire, T., Guloba, G. and Nkhwashu, N., 2021. **Pre-exposure prophylaxis (PrEP) awareness, attitudes and uptake willingness among young people: gender differences and associated factors in two South African districts.** Global Health Action *14(1)*, 1886455, 1-11, doi: 10.1080/16549716.2021.1886455.

Shoakena, B., 2011. **Knowledge-behavior gap in condom use to prevent HIV infection: a case study of Ethiopian urban youth.** (M.A. Thesis), University of Minnesota.

Shuper, P.A., Joharchi, N., Bogoch, I.I., Loutfy, M., Crouzat, F., El-Helou, P., Knox, D.C., Woodward, K. and Rehm, J., 2020. **Alcohol consumption, substance use, and depression in relation to HIV Pre-Exposure Prophylaxis (PrEP) nonadherence among gay, bisexual, and other men-who-have-sex-with-men**. BMC Public Health *20(1)*, 1-12, doi: 10.1186/s12889-020-09883-z.

Sileo, K.M., Fielding-Miller, R., Dworkin, S.L. and Fleming, P.J., 2018. **What Role Do Masculine Norms Play in Men's HIV Testing in Sub-Saharan Africa?: A Scoping Review**. AIDS Behav *22(8)*, 2468–2479, doi:10.1007/s10461-018-2160-z.

Simpson, A., 2007. **Learning Sex and Gender in Zambia: Masculinities and HIV/AIDS Risk**. Sexualities *10(2)*, 173–188, doi: 10.1177/1363460707075799.

Siqueira, B.P. de J., Teixeira, J.R.B., Valença Neto, P. da F., Boery, E.N., Boery, R.N.S. de O., Vilela, A.B.A., Siqueira, B.P. de J., Teixeira, J.R.B., Valença Neto, P. da F., Boery, E.N., Boery, R.N.S. de O. and Vilela, A.B.A., 2014. **Men and health care in the social representations of health professionals**. Escola Anna Nery *18*, 690–696, doi: 10.5935/1414-8145.20140098.

Skinner, D. and Mfecane, S., 2004. **Stigma, discrimination and the implications for people living with HIV/AIDS in South Africa**. SAHARA-J: Journal of Social Aspects of HIV/AIDS *1(3)*, 157–164, doi: 10.1080/17290376.2004.9724838.

Sligo, F.X. and Jameson, A.M., 2000. **The knowledge—behavior gap in use of health information**. Journal of the American Society for Information Science *51(9)*, 858–869, doi:10.1002/(SICI)1097-4571(2000)51:9<858::AID-ASI80>3.0.CO;2-Q.

Sloan, C., Gough, B. and Conner, M., 2010. **Healthy masculinities? How ostensibly healthy men talk about lifestyle, health and gender.** Psychology & Health *25(7)*, 783–803, doi: 10.1080/08870440902883204.

Smith, B. and McGannon, K.R. 2018. **Developing rigor in qualitative research: problems and opportunities within sport and exercise psychology**. International Review of Sport and Exercise Psychology *11(1)*, 101–21, doi: 10.1080/1750984X.2017.1317357.

Smith, D.K., Toledo, L., Smith, D.J., Adams, M.A. and Rothenberg, R., 2012. **Attitudes and program preferences of African-American urban young adults about pre-exposure prophylaxis (PrEP)**. AIDS Educ Prev *24(5)*, 408–421, doi: 10.1521/aeap.2012.24.5.408.

Smith, R., Rossetto, K. and Peterson, B.L., 2008. **A meta-analysis of disclosure of one's HIV-positive status, stigma and social support.** AIDS Care *20(10)*, 1266–1275.

Smith, V., 2012. **A Qualitative Analysis: Using the Health Belief Model to explain dengue fever in two communities in Trinidad and Tobago.** Journal of the Department of Behavioural Sciences *2(1)*, 90-101.

Soni, K., Aggarwal, An., Aggarwal, Am., Sharma, R. and Goel, A., 2018. **Pill burden and profile in older person.** Journal of the Indian Academy of Geriatrics *14*, 176–177.

Spinelli, M.A., Glidden, D.V., Anderson, P.L., Gandhi, M., Cohen, S., Vittinghoff, E., Coleman, M.E., Scott, H., Bacon, O., Elion, R., Kolber, M.A., Buchbinder, S.P. and Liu, A.Y., 2019. **Short-Term Adherence Marker to PrEP Predicts Future Non-Retention in a Large PrEP Demo Project: Implications for Point-of-Care Adherence Testing.** J Acquir Immune Defic Syndr *81(2)*, 158–162, doi: 10.1097/QAI.0000000000002005.

Spinner, C.D., Boesecke, C., Zink, A. Jessen, H., Stellbrink, H.-J., Rockstroh, J.K. and Esser S., 2016. **HIV pre-exposure prophylaxis (PrEP): a review of current knowledge of oral systemic HIV PrEP in humans.** Infection *44(2)*, 151–158.

Ssali, S.N., Atuyambe, L., Tumwine, C., Segujja, E., Nekesa, N., Nannungi, A., Ryan, G. and Wagner, G., 2010. **Reasons for disclosure of HIV status by people living with HIV/AIDS and in HIV care in Uganda: an exploratory study.** AIDS patient care and STDs *24(10)*, 675–681.

Stephenson, R., Darbes, L.A., Chavanduka, T., Essack, Z. and van Rooyen, H., 2021. **HIV Testing, Knowledge and Willingness to Use PrEP Among Partnered Men Who Have Sex With Men in South Africa and Namibia**. AIDS Behav. *25(7)*, 1993-2004, doi: 10.1007/s10461-020-03129-0.

Swaziland National Aids Programme (SNAP), 2016. **Pre-exposure prophylaxis (PrEP) for the prevention of HIV infection in Swaziland.**

Sweileh, W.M., 2019. **Bibliometric analysis of literature in AIDS-related stigma and discrimination**. Translational Behavioral Medicine *9(4)*, 617–628, doi: 10.1093/tbm/iby072.

Swidler, A., 1986. **Culture in action: Symbols and strategies**. American sociological review 273–286.

Tenthani, L., Cataldo, F., Chan, A.K., Bedell, R., Martiniuk, A.L. and van Lettow, M., 2012. **Involving expert patients in antiretroviral treatment provision in a tertiary referral hospital HIV clinic in Malawi**. BMC Health Services Research *12(1)*, 1-8, doi: 10.1186/1472-6963-12-140.

Tibbels, N.J., Hendrickson, Z.M., Naugle, D.A., Dosso, A., Van Lith, L., Mallalieu, E.C., Kouadio, A.M., Kra, W., Kamara, D., Dailly-Ajavon, P., Cisse, A., Seifert-Ahanda, K., Thaddeus, S., Babalola, S. and Hoffmann, C.J., 2019. **Men's perceptions of HIV care engagement at the facility- and provider-levels: Experiences in Cote d'Ivoire.** PLOS ONE *14(3)*, e0211385, 1-12, doi: 10.1371/journal.pone.0211385.

Tobias, B.Q., 2001. **A descriptive study of the cultural mores and beliefs toward HIV/AIDS in Swaziland, Southern Africa**. International Journal for the Advancement of Counselling *23(2)*, 99–113.

Toledo, L., McLellan-Lemal, E., Henderson, F.L. and Kebaabetswe, P.M., 2015. **Knowledge, Attitudes, and Experiences of HIV Pre-Exposure Prophylaxis (PrEP) Trial Participants in Botswana**. World J AIDS *5(2)*, 10–20, doi: 10.4236/wja.2015.51002.

Tong A, Sainsbury P, Craig J.2007. **Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups.** International Journal for Quality in Healthcare, *19(6)*, 349 – 357, doi: 10.1093/intqhc/mzm042.

Tracy, S.J., 2010. **Qualitative Quality: Eight "Big-Tent" Criteria for Excellent Qualitative Research**. Qualitative Inquiry, *16(10)*, 837–51, doi: 10.1177/1077800410383121.

Traeger, M.W., Schroeder, S.E., Wright, E.J., Hellard, M.E., Cornelisse, V.J., Doyle, J.S. and Stoové, M.A., 2018. **Effects of Pre-exposure Prophylaxis for the Prevention of Human Immunodeficiency Virus Infection on Sexual Risk Behavior in Men Who Have Sex With Men: A Systematic Review and Meta-analysis.** Clin. Infect. Dis. *67*, 676–686, doi: 10.1093/cid/ciy182.

Tschirhart, N., Kabanga L. and Nichols S., 2015. **The convergence of HIV/AIDS and customary tenure on women's access to land in rural Malawi**, SAHARA-J: Journal of Social Aspects of HIV/AIDS *12(1)*, 134-146, doi: 10.1080/17290376.2015.1124049.

Tucker, J.D., Tso, L.S., Hall, B., Ma, Q., Beanland, R., Best, J., Li, H., Lackey, M., Marley, G., Rich, Z.C., Sou, K.-L. and Doherty, M., 2017. **Enhancing Public Health HIV Interventions: A Qualitative Meta-Synthesis and Systematic Review of Studies to Improve Linkage to Care, Adherence, and Retention**. EBioMedicine *17*, 163–171, doi: 10.1016/j.ebiom.2017.01.036

Tweed, A. and Charmaz, K., 2012. **Grounded theory methods for mental health practitioners.** In Qualitative research methods in mental health and psychotherapy ed. by Harper, D.& Thompson A.R., John Wiley & Sons, West Sussex, 131–146.

UN General Assembly, 2021. **Political Declaration on HIV and AIDS: Ending Inequalities and Getting on Track to End AIDS by 2030.** URL: https://www.unaids.org/en/resources/documents/2021/2021_political-declaration-on-hiv-and-aids, accessed [09.06.2021]

UN General Assembly, 2016. **Political Declaration on HIV and AIDS: On the Fast Track to Accelerating the Fight against HIV and to Ending the AIDS Epidemic by 2030. Resolution adopted by the General Assembly on 8 June 2016.** URL: https://www.unaids.org/sites/default/files/media_asset/2016-political-declaration-HIV-AIDS_en.pdf, accessed [16.12.2020]

UN General Assembly, 2015. **Transforming our world: The 2030 agenda for sustainable development**. URL: https://www.unfpa.org/resources/transforming-our-world-2030-agenda-sustainable-development, accessed [01.03.2019]

UN General Assembly, 2011. **Political Declaration on HIV and AIDS: Intensifying Our Efforts to Eliminate HIV and AIDS**. URL: https://www.unaids.org/sites/default/files/sub_landing/files/20110610_UN_A-RES-65-277_en.pdf, accessed [09.06.2021]

UNAIDS, 2021a. **Global AIDS Update — Confronting inequalities — Lessons for pandemic responses from 40 years of AIDS,** UNAIDS, Geneva. URL: https://www.unaids.org/en/resources/documents/2021/2021-global-aids-update, accessed [08.06.2021]

UNAIDS, 2021b. **Message from the UNAIDS Executive Director on Zero Discrimination Day 2021**. URL: https://www.unaids.org/en/resources/presscentre/pressreleaseandstatementarchive/2021/march/zdd-exd-message, accessed [15.07.2021].

UNAIDS, 2020. **Global AIDS Update — Seizing the moment — Tackling entrenched inequalities to end epidemics,** UNAIDS, Geneva. URL: https://www.unaids.org/en/resources/documents/2020/global-aids-report, accessed [19.07.2020]

UNAIDS, 2019. **UNAIDS data 2019**. URL: https://www.unaids.org/en/resources/documents/2019/2019-UNAIDS-data, accessed [01.08.2019].

UNAIDS, 2017a. **Blind Spot: Reaching out to men and boys**. UNAIDS, Geneva. URL: https://www.unaids.org/en/resources/documents/2017/blind_spot, accessed [04.08.2018].

UNAIDS, 2017b. **HIV Prevention 2020 Road Map - Accelerating HIV prevention to reduce new infections by 75%**. UNAIDS, Geneva. URL: https://www.unaids.org/en/resources/documents/2017/hiv-prevention-2020-road-map, accessed [24.11.2021].

UNAIDS, 2014a. **Fast Track - Ending the AIDS Epidemic by 2030.** UNAIDS, Geneva. URL: https://www.unaids.org/en/resources/documents/2014/JC2686_WAD2014report. accessed [14.02.2020].

UNAIDS, 2014b. **90-90-90: An ambitious treatment target to help end the AIDS epidemic.** UNAIDS, Geneva. URL: https://www.unaids.org/sites/default/files/media_asset/90-90-90_en.pdf, accessed [04.08.2019].

UNAIDS, 2010. **Getting to Zero - 2011–2015 Strategy**. UNAIDS, Geneva.URL: https://www.unaids.org/en/resources/documents/2010/20101221_JC2034_UNAIDS_Strategy, accessed [23.07.2021].

UNDP, 2020. **The next frontier: human development and the Anthropocene, Human development report.** United Nations Development Programme, New York, NY. URL: http://hdr.undp.org/sites/default/files/hdr2020.pdf, accessed [17.11.2021].

van den Berg, W., Hendricks, L., Hatcher, A., Peacock, D., Godana, P. and Dworkin, S., 2013. **"One Man Can": shifts in fatherhood beliefs and parenting practices following a gender-transformative programme in Eastern Cape, South Africa**. Gender and Development *21(1)*, 111–125.

Van der Elst, E.M., Mbogua, J., Operario, D., Mutua, G., Kuo, C., Mugo, P., Kanungi, J., Singh, S., Haberer, J., Priddy, F. and Sanders, E.J., 2013. **High Acceptability of HIV Pre-exposure Prophylaxis but Challenges in Adherence and Use: Qualitative Insights from a Phase I Trial of Intermittent and Daily PrEP in At-Risk Populations in Kenya**. AIDS Behav *17(6)*, 2162–2172, doi: 10.1007/s10461-012-0317-8.

Van Hook, M.P., Ngwenya, B.N., 1996. **The majority legal status of women in Southern Africa: Implications for women and families**. Journal of Family and Economic Issues *17(2)*, 173–188, doi: 10.1007/BF02267045.

van Rooyen, H., Makusha, T., Joseph, P., Ngubane, T., Kulich, M., Sweat, M. and Coates, T., 2019. **Zwakala Ndoda: a cluster and individually randomized trial aimed at improving testing, linkage, and adherence to treatment for hard-to reach men in KwaZulu-Natal, South Africa**. Trials *20(1)*, 1-14, doi: 10.1186/s13063-019-3908-0.

Varga, C.A., 2001. **The Forgotten Fifty Per Cent: A Review of Sexual and Reproductive Health Research and Programs Focused on Boys and Young Men in Sub-Saharan Africa.** African Journal of Reproductive Health / La Revue Africaine de la Santé Reproductive *5(3)*, 175–195, doi: 10.2307/3583334.

Velloza, J., Kemp, C.G., Aunon, F.M., Ramaiya, M.K., Creegan, E. and Simoni, J.M., 2020. **Alcohol Use and Antiretroviral Therapy Non-Adherence Among Adults Living with HIV/AIDS in Sub-Saharan Africa: A Systematic Review and Meta-Analysis**. AIDS Behav *24(6)*, 1727–1742, doi: 10.1007/s10461-019-02716-0.

Venables, E., Towriss, C., Rini, Z., Nxiba, X., Cassidy, T., Tutu, S., Grimsrud, A., Myer, L. and Wilkinson, L., 2019. **Patient experiences of ART adherence clubs in Khayelitsha and Gugulethu, Cape Town, South Africa: A qualitative study**. PLOS One *14(6)*, e0218340, 1-18, doi: 10.1371/journal.pone.0218340.

Wanga, V., Omollo, V., Bukusi, E.A., Odoyo, J.B., Morton, J.F., Kidoguchi, L., Johnson, R., Hughes, J.P., Celum, C. and Baeten, J.M., 2020. **Uptake and impact of facility-based HIV self-testing on PrEP delivery: a pilot study among young women in Kisumu, Kenya**. Journal of the International AIDS Society *23(8)*, 1-9. doi: 10.1002/jia2.25561.

Ware, N.C., Wyatt, M.A., Haberer, J.E., Baeten, J.M., Kintu, A., Psaros, C., Safren, S., Tumwesigye, E., Celum, C.L. and Bangsberg, D.R., 2012. **What's Love Got to Do With**

It? Explaining Adherence to Oral Antiretroviral Pre-exposure Prophylaxis (PrEP) for HIV Serodiscordant Couples. J Acquir Immune Defic Syndr (1999) *59(5),* 1-10, doi: 10.1097/QAI.0b013e31824a060b.

Ware, N.C., Wyatt, M.A., Pisarski, E.E., Bwana, B.M., Orrell, C., Asiimwe, S., Amanyire, G., Musinguzi, N., Bangsberg, D.R., Haberer, J.E. and META Study Team, 2020. **Influences on Adherence to Antiretroviral Therapy (ART) in Early-Stage HIV Disease: Qualitative Study from Uganda and South Africa**. AIDS Behav. 24(9), 2624-2636, doi: 10.1007/s10461-020-02819-z.

Wegwarth, O., Kurzenhäuser-Carstens, S. and Gigerenzer, G., 2014. **Overcoming the knowledge–behavior gap: The effect of evidence-based HPV vaccination leaflets on understanding, intention, and actual vaccination decision**. Vaccine *32(12)*, 1388–1393, doi: 10.1016/j.vaccine.2013.12.038

Wehner, N., Baumgarten, D., Luck, F., Maihofer, A. and Zemp, E., 2015. **„Mir geht es gut!". Gesundheitsvorstellungen von Männern in der Schweiz. Ergebnisse aus einem empirischen Projekt.** Freiburger Zeitschrift für GeschlechterStudien *21(2)*, 33–49, doi: 10.3224/fzg.v21i2.20935.

Whitfield, T.H.F., John, S.A., Rendina, H.J., Grov, C. and Parsons, J.T., 2018. **Why I Quit Pre-Exposure Prophylaxis (PrEP)? A Mixed-Method Study Exploring Reasons for PrEP Discontinuation and Potential Re-initiation Among Gay and Bisexual Men.** AIDS Behav *22(11)*, 3566–3575, doi: 10.1007/s10461-018-2045-1.

Wilkinson, L. and Grimsrud, A., 2020. **The time is now: expedited HIV differentiated service delivery during the COVID-19 pandemic.** Journal of the International AIDS Society *23(5)*, e25503, doi: 10.1002/jia2.25503.

Witzel, T.C., Nutland, W. and Bourne, A., 2019. **What are the motivations and barriers to pre-exposure prophylaxis (PrEP) use among black men who have sex with men aged 18–45 in London? Results from a qualitative study**. Sex Transm Infect *95(4)*, 262–266, doi: 10.1136/sextrans-2018-053773.

Wood, S., Gross, R., Shea, J.A., Bauermeister, J.A., Franklin, J., Petsis, D., Swyryn, M., Lalley-Chareczko, L., Koenig, H.C. and Dowshen, N., 2019. **Barriers and Facilitators of PrEP Adherence for Young Men and Transgender Women of Color.** AIDS Behav *23(10)*, 2719–2729, doi: 10.1007/s10461-019-02502-y.

Woolf-King, S.E., Fatch, R., Cheng, D.M., Muyindike, W., Ngabirano, C., Kekibiina, A., Emenyonu, N. and Hahn, J.A., 2018. **Alcohol Use and Unprotected Sex Among HIV-Infected Ugandan Adults: Findings from an Event-Level Study**. Arch Sex Behav *47(7)*, 1937–1948, doi: 10.1007/s10508-017-1131-1.

World Bank, 2011. **Swaziland Rural Sector Review.** URL: https://documents1.worldbank.org/curated/en/417071468120839245/pdf/702010ESW0P11900PN200June0270020110.pdf, accessed [02.02.2019].

World Bank, **Country and Lending Groups**. URL: https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups, accessed [17.11.2020]

World Bank, **Country Malawi. Overview**. URL: https://www.worldbank.org/en/country/malawi/overview#1, accessed [10.10.2020].

World Economic Forum, 2018. **Global Gender Gap Report 2018**. Geneva.URL: https://www3.weforum.org/docs/WEF_GGGR_2018.pdf, accessed [10.04.2019].

World Health Organization, 2021. **World health statistics 2021: monitoring health for the SDGs, sustainable development goals.** World Health Organization, Geneva. URL: https://www.who.int/data/gho/publications/world-health-statistics, accessed [17.11.2021].

World Health Organization, 2016. **Consolidated guidelines on the use of antiretroviral drugs for treating and preventing HIV infection: recommendations for a public**

health approach. URL: https://apps.who.int/iris/handle/10665/208825, accessed [09.02.2018].

World Health Organization, 2015a. **WHO expands Recommendation on oral Pre-Exposure Prophylaxis of HIV Infection (PrEP) - Policy Brief. WHO, Geneva**. URL: https://apps.who.int/iris/bitstream/handle/10665/197906/WHO_HIV_2015.48_eng.pdf?sequence=1&isAllowed=y, accessed [14.02.2020].

World Health Organization, 2015b. **Guideline on when to start antiretroviral therapy and on pre-exposure prophylaxis for HIV.** URL: http://apps.who.int/iris/bitstream/handle/10665/186275/9789241509565_eng.pdf?sequence=1, accessed [09.06.2018].

World Health Organization, 2007. **WHO Case Definitions of HIV for Surveillance and Revised Clinical Staging and Immunological Classification of HIV-Related Disease in Adults and Children.** Geneva: World Health Organization. URL: https://www.who.int/hiv/pub/guidelines/HIVstaging150307.pdf, accessed [20.02.2021]

Wu, F., Zhang, A., Babbitt, A., Ma, Q., Eyal, N., Pan, X., Cai, W., Hu, F., Yu, C. and Tucker, J., 2018. **Overcoming HIV Stigma? A Qualitative Analysis of HIV Cure Research and Stigma Among Men Who Have Sex with Men Living with HIV**. Archives of Sexual Behavior *47(7),* 2061-2069, doi: 10.1007/s10508-017-1062-x.

Yeatman, S., Chamberlin, S. and Dovel, K., 2018. **Women's (health) work: A population-based, cross-sectional study of gender differences in time spent seeking health care in Malawi**. PLOS ONE *13(12)*, e0209586, 1-14.

Yeo, T.E.D. and Chu, T.H., 2017. **Social-cultural factors of HIV-related stigma among the Chinese general population in Hong Kong.** AIDS Care *29(10)*, 1255–1259, doi: 10.1080/09540121.2017.1282601

Yimer, Y.T. and Yalew, A.W., 2015. **Magnitude and Predictors of Anti-Retroviral Treatment (ART) Failure in Private Health Facilities in Addis Ababa, Ethiopia.** PLOS ONE *10(5)*, e0126026, 1-17, doi:10.1371/journal.pone.0126026.

Yoshioka, E., Giovenco, D., Kuo, C., Underhill, K., Hoare, J. and Operario, D., 2020. **"I'm doing this test so I can benefit from PrEP": exploring HIV testing barriers/facilitators and implementation of pre-exposure prophylaxis among South African adolescents.** Afr J AIDS Res *19(2)*, 101–108, doi: 10.2989/16085906.2020.1743726.

Young, I., Flowers, P. and McDaid, L.M., 2014. **Barriers to uptake and use of pre-exposure prophylaxis (PrEP) among communities most affected by HIV in the UK: findings from a qualitative study in Scotland.** BMJ Open *4(11)*, e005717.

Zigira, C.A.B., 2000. **Religion, Culture and Gender: A Study of Women's Search for Gender Equality in Swaziland.** Doctoral thesis. University of South Africa.

OWN PUBLICATIONS

Core and closely related publications for dissertation

Berner-Rodoreda, A., Ngwira, E., Alhassan, Y., Chione, B., Dambe, R., Bärnighausen, T., Phiri, S., Taegtmeyer, M., Neuhann, F., 2021. **"Deadly", "fierce", "shameful": notions of anti-retroviral therapy, stigma and masculinities intersecting men's life-course in Blantyre, Malawi**. BMC Public Health *21*, 2247, doi: 10.1186/s12889-021-12314-2.
own contribution: planning, data collection, analysis, interpretation, writing/editing of article

Berner-Rodoreda, A., Geldsetzer, P., Bärnighausen, K., Hettema, A., Bärnighausen, T., Matse, S., McMahon, S.A., 2020c. **"It's hard for us men to go to the clinic. We naturally have a fear of hospitals." Men's risk perceptions, experiences and program preferences for PrEP: A mixed methods study in Eswatini.** PLOS ONE *15*, e0237427, doi: 10.1371/journal.pone.0237427.
own contribution: qualitative analysis, interpretation, writing/editing of article

Berner-Rodoreda, A., Bärnighausen, T., Kennedy, C., Brinkmann, S., Sarker, M., Wikler, D., Eyal, N., McMahon, S.A., 2020a. **From Doxastic to Epistemic: A Typology and Critique of Qualitative Interview Styles.** Qualitative Inquiry *26*, 291–305, doi: 10.1177/1077800418810724.
own contribution: literature review, analysis, interpretation, writing/editing of article

Berner-Rodoreda, A., Bärnighausen, T., Eyal, N., Sarker, M., Hossain, P., Leshabari, M., Metta, E., Mmbaga, E., Wikler, D., McMahon, S.A., 2021a. **"Thought provoking", "interactive", and "more like a peer talk": Testing the deliberative interview style in Germany.** SSM - Qualitative Research in Health *1*, 100007, doi: 10.1016/j.ssmqr.2021.100007.
own contribution: planning, data collection, analysis, interpretation, writing/editing of article

Berner-Rodoreda, A., Vandormael, A., Bärnighausen, K., Mavuso M., Dlamini P., Matse, S., Hettema, A., Bärnighausen, T. **Cultural repertoires and situated selections as an alternative framework to Hegemonic Masculinities – Findings from Eswatini.** Prepared for submission to American Journal of Men's Health.
Own contribution: review of literature, analysis of PrEP data, interpretation, writing/editing of manuscript

Other global health related publications

Berner-Rodoreda, A. and Jahn, A. 2021. **Commercial influence on political declarations: the crucial distinction between consultation and negotiation and the need for transparency in lobbying** — comment on 'Competing Frames in Global Health Governance: An Analysis of Stakeholder Influence on the Political Declaration on Non-communicable Diseases'. International Journal of Health Policy Management, doi: 10.34172/ijhpm.2021.132.

Villa, S., van Leeuwen, R., Craig Gray, C., van der Sande, M., Konradsen, F., Fröschl, G., Gisselsson Nord, D, Prazeres da Costa, C., Ramirez-Rubio, O., Abubakar, I., Bärnighausen, T., Casamitjana, N., **Berner-Rodoreda, A.**, Cobelens, F., Plasència, A., Raviglione, M. 2021. **HERA: A New Era for Health Emergency Preparedness in Europe?** The Lancet *397*, 10290, 2145–47, doi: 10.1016/S0140-6736(21)01107-7.

Berner-Rodoreda, A, Rehfuess, E.A., Klipstein-Grobusch K., Cobelens, F., Raviglione, M., Fláhaut, A., Casamitjana, N., Fröschl, G., Skordis-Warral, J., Abubakar, I., Ashrafian, H., Agardh, A., Visser, L., Schultsz, C., Plasència, A., Jahn, A., Norton, R., van Leeuwen, R., Hagander, L., Bärnighausen, T., 2019. **Where Is the 'Global' in the European Union's Health Research and Innovation Agenda?** BMJ Global Health *4(5),* e001559. doi: 10.1136/bmjgh-2019-001559.

Berner-Rodoreda, A., McMahon, S., Eyal, N., Hossain, P., Rabbani, A., Barua, M., Sarker, M., Metta, E., Mmbaga, E., Leshabari, M., Wikler, D., Bärnighausen, T., 2022. **Consent requirements for testing health policies: an intercontinental comparison of expert opinions** Journal of Empirical Research on Human Research Ethics, doi:10.1177/15562646221076764.

Engelbert Bain, L, **Berner-Rodoreda, A.**, McMahon, S.A., Sarker, M., Tanser, F., Baernighausen, T.W., Wikler, D., Eyal, N. **COVID-19 and health policy trials: A missed opportunity for continuous learning?** Tracking #: 2021-19887, PNAS, in review.

Schnieders, E, Röhr, F., Mbewe, M., Shanzi, A., **Berner Rodoreda, A.,** Barteit, S., Louis, V., Andreadis, P., Syakantu, G. and Neuhann, F. 2022. **Real-life Evaluation of an Interactive vs. Non-interactive E-learning module on Chronic Obstructive Pulmonary Disease for Medical Licentiate Students in Zambia: Pilot Web-based Mixed Methods Randomized Controlled Trial.** Journal of Medical Internet Research Med Educ. *8(1)*: e34751. doi: 10.2196/34751.

Conferences

Oral Presentation

Berner-Rodoreda, A. Global Health – A concept not yet fully embraced by the new European Research and Innovation Framework*,* Conference on Tropical Medicine and Global Health, München, April 4-6,2019, S4-1: Global Health

Core conference poster presentations (dissertation)

Berner-Rodoreda, A., Dambe R., Ngwira E., Neuhann F., Bärnighausen T., and Phiri S. **U=U – Catalyst or barrier for men's engagement in ART? Stakeholder views from Blantyre, Malawi**, #50, INTEREST 2020 virtual, Nov 30 – Dec 3, 2020.

Berner-Rodoreda, A., Dambe R., Ngwira E., Neuhann F., Bärnighausen T., and Phiri S. **"One size does not fit all" – views by stakeholders, men on ART and men in communities on improving men's access to and continued engagement in ART in Malawi**, #80, INTEREST 2020 virtual, Nov 30 – Dec 3, 2020.

Berner-Rodoreda, A., Dambe R., Ngwira E., Neuhann F., Bärnighausen T., and Phiri S. **U=U – Catalyst or barrier for men's engagement in ART? Stakeholder views from Blantyre, Malawi**, PED 1184, International AIDS Conference virtual, 2020, July 6-10, 2020.

Berner-Rodoreda, A., Dlamini, P., Mnisi, B., Hettema, A., Hughey, AB, Baernighausen, K., Lejeune, C., Matse, S., Baernighausen, T., and McMahon, SA. **Might this pill decrease my libido?** #137 INTEREST Conference. Kigali, Rwanda, May 29 - June 1, 2018.

Dissertation abstracts submitted to International AIDS Conference 2022, Montreal

Berner-Rodoreda, A., Ngwira, E., Bärnighausen, K., Dambe, R., McMahon, S.A., Chione, B., Hettema, A., Matse, S., Taegtmeyer, M., Alhassan, Y., Phiri, S., Bärnighausen, T., Neuhann, F.

1. **Similarities and differences in men's experience of antiretroviral therapy (ART) and pre-exposure prophylaxis (PrEP) in Southern African high-prevalence settings** and
2. **The intersectionality of stigma, masculinity and the life-course in men's experiences of pre-exposure prophylaxis (PrEP) in Eswatini and antiretroviral therapy (ART) in Malawi**

APPENDICES

Appendix 1: Ministry of Health Data Collection for Clinics, 2019

Ministry of Health

LABEL MASTER CARD [Version 2.0]

Transfer-In Date:...../...../.....

ARV Number:.....

YEAR:.....

Patient/Guardian Details

Patient Name

Sex, Birth Date: M F DOB

Patient Phone

Phys Address

Guardian Name: Y N

Agrees to FUP: Y N Guardian Relationship

Guardian Phone

Status at ART Initiation

Clin Stage: 1 2 3 4 PSHD

WHO Clin condition

CD4 /TLC: CD4 /TLC Date

Location

TB Status: Never/ <2yrs Last 2yrs Curr

KS: Y N

Preg/Lact: N Preg Lact

Ever taken ARVs: Y N

Age at Initiation: Ht,Wt CM KG

Last ARVs drugs,Date

Last ARVs Drugs

Last taken Date

Confirmatory HIV Test

Site

HIV test type: Rapid PCR

HIV test Date

HTC serial No.

Location

ART Edu. done: Y N

ART Edu. Date

TB Treatment: Registration No.

Registration Date

ART Regimens: 1P 2P 3P 4P Oth / 1A 2A 3A 4A 5A 6A 7A 8A Oth

Start Date

January: Visit Date

Side Effects: NO PN HP SK Lip Oth

TB Status: N Y C Rx

Weight / Height

Dosses Missed / Pill Count / Viral Load / Bled / Result

Regimen: 1A 2A 3A 4A 5A 6A 7A 8A 1P 2P 3P 4P 9P Oth

ARV Given: CPT / INH / Depo / Condoms

Adv Outcome: D Def Stop TO / Outcm Date / Next Appt Date

February: Visit Date

Side Effects: NO PN HP SK Lip Oth

TB Status: N Y C Rx

Weight / Height

Dosses Missed / Pill Count / Viral Load / Bled / Result

Regimen: 1A 2A 3A 4A 5A 6A 7A 8A 1P 2P 3P 4P 9P Oth

ARV Given: CPT / INH / Depo / Condoms

Adv Outcome: D Def Stop TO / Outcm Date / Next Appt Date

March: Visit Date

Side Effects: NO PN HP SK Lip Oth

TB Status: N Y C Rx

Weight / Height

Dosses Missed / Pill Count / Viral Load / Bled / Result

Regimen: 1A 2A 3A 4A 5A 6A 7A 8A 1P 2P 3P 4P 9P Oth

ARV Given: CPT / INH / Depo / Condoms

Adv Outcome: D Def Stop TO / Outcm Date / Next Appt Date

April: Visit Date

Side Effects: NO PN HP SK Lip Oth

TB Status: N Y C Rx

Weight / Height

Dosses Missed / Pill Count / Viral Load / Bled / Result

Regimen: 1A 2A 3A 4A 5A 6A 7A 8A 1P 2P 3P 4P 9P Oth

ARV Given: CPT / INH / Depo / Condoms

Adv Outcome: D Def Stop TO / Outcm Date / Next Appt Date

May: Visit Date

Side Effects: NO PN HP SK Lip Oth

TB Status: N Y C Rx

Weight / Height

Dosses Missed / Pill Count / Viral Load / Bled / Result

Regimen: 1A 2A 3A 4A 5A 6A 7A 8A 1P 2P 3P 4P 9P Oth

ARV Given: CPT / INH / Depo / Condoms

Adv Outcome: D Def Stop TO / Outcm Date / Next Appt Date

June: Visit Date

Side Effects: NO PN HP SK Lip Oth

TB Status: N Y C Rx

Weight / Height

Dosses Missed / Pill Count / Viral Load / Bled / Result

Regimen: 1A 2A 3A 4A 5A 6A 7A 8A 1P 2P 3P 4P 9P Oth

ARV Given: CPT / INH / Depo / Condoms

Adv Outcome: D Def Stop TO / Outcm Date / Next Appt Date

July: Visit Date

Side Effects: NO PN HP SK Lip Oth

TB Status: N Y C Rx

Weight / Height

Dosses Missed / Pill Count / Viral Load / Bled / Result

Regimen: 1A 2A 3A 4A 5A 6A 7A 8A 1P 2P 3P 4P 9P Oth

ARV Given: CPT / INH / Depo / Condoms

Adv Outcome: D Def Stop TO / Outcm Date / Next Appt Date

August: Visit Date

Side Effects: NO PN HP SK Lip Oth

TB Status: N Y C Rx

Weight / Height

Dosses Missed / Pill Count / Viral Load / Bled / Result

Regimen: 1A 2A 3A 4A 5A 6A 7A 8A 1P 2P 3P 4P 9P Oth

ARV Given: CPT / INH / Depo / Condoms

Adv Outcome: D Def Stop TO / Outcm Date / Next Appt Date

September: Visit Date

Side Effects: NO PN HP SK Lip Oth

TB Status: N Y C Rx

Weight / Height

Dosses Missed / Pill Count / Viral Load / Bled / Result

Regimen: 1A 2A 3A 4A 5A 6A 7A 8A 1P 2P 3P 4P 9P Oth

ARV Given: CPT / INH / Depo / Condoms

Adv Outcome: D Def Stop TO / Outcm Date / Next Appt Date

October: Visit Date

Side Effects: NO PN HP SK Lip Oth

TB Status: N Y C Rx

Weight / Height

Dosses Missed / Pill Count / Viral Load / Bled / Result

Regimen: 1A 2A 3A 4A 5A 6A 7A 8A 1P 2P 3P 4P 9P Oth

ARV Given: CPT / INH / Depo / Condoms

Adv Outcome: D Def Stop TO / Outcm Date / Next Appt Date

November: Visit Date

Side Effects: NO PN HP SK Lip Oth

TB Status: N Y C Rx

Weight / Height

Dosses Missed / Pill Count / Viral Load / Bled / Result

Regimen: 1A 2A 3A 4A 5A 6A 7A 8A 1P 2P 3P 4P 9P Oth

ARV Given: CPT / INH / Depo / Condoms

Adv Outcome: D Def Stop TO / Outcm Date / Next Appt Date

December: Visit Date

Side Effects: NO PN HP SK Lip Oth

TB Status: N Y C Rx

Weight / Height

Dosses Missed / Pill Count / Viral Load / Bled / Result

Regimen: 1A 2A 3A 4A 5A 6A 7A 8A 1P 2P 3P 4P 9P Oth

ARV Given: CPT / INH / Depo / Condoms

Adv Outcome: D Def Stop TO / Outcm Date / Next Appt Date

Appendix 2 – Training Guide for research assistants, Malawi				
	MALAWI TRAINING on MEN AND ART DATA COLLECTION			
Time	**Day 1: Introduction**	**Day 2: Tools**	**Day 3: Piloting**	**Day 4: Piloting**
9 – 10:30h	**Introduction** Welcome Introduction Getting to know each other Overview of training Overview of Study and Research Questions Presentation of preliminary Quant Findings	**IDI Men on ART, IDI Men in Community, IDI with stakeholders (each guide dealt with separately)** Read IDI guide Clarification of Questions See, if translation may need adaptations.	**IDIs with Stakeholders, Men on ART and Men in Community** Piloting Interviews	**IDIs with Stakeholders, Men on ART and Men in Community** Piloting Interviews
10 :30-10 :45h	**Coffee break**			
10:45- 12:15h	**Qualitative Research and IDIs** Presentation on Qualitative Research Methods and IDIs Questions/Discussion	**Practical Exercise - Men on ART** IDI (Interviewer, interviewee, observer) swapping roles		
12 :15-13 :15h	**Lunch Break**			
13:15-14:45h	**Brainstorming and Practical Exercise** Formulating questions and probes	**Practical Exercise - Men in Community** IDI (Interviewer, interviewee, observer) swapping roles	**Debriefing** What worked well? What didn't work well? Where could things be improved?	**Debriefing** What worked well? What didn't work well? Where could things be improved?
14 :45-15 :00h	**Coffee Break**			
15 – 16:30h	**Ethics Input and familiarization with information sheet, consent forms, debriefs, organizing data and recording equipment**. Questions Homework: Read IDI guides	**Practical Exercise Stakeholders** IDI (Interviewer, interviewee, observer) swapping roles	**Transcriptions, Organizing Data**	**Open Session for Questions**

Appendix 3 - IDI Guide Men on ART in English

Men on ART in Malawi

As we went over in the consent, we will record the interview and delete the recording after it has been transcribed. Our interview will probably last around 45-60 minutes. Do you have any questions before we begin?

Can I ask you some personal questions before we begin recording? As mentioned before, only the research team will have access to this information. (Go to Information about respondent)

IDI WITH MEN ON ART	
The interviews will be saved under a pseudonym containing information on date of interview, no. of interviews per day and interviewer as well as the particular group of men interviewed: A* men with good VLS, A# men with poor VLS, B- men in community, C- stakeholders Example: IDI.A*.AB.1.12.6.2019	
Interview Date (Day-Month-Year	
Location	
IDI Interviewer	
IDI Transcriber/Translator	
Length of IDI (in minutes)	
Interview pseudonym	
Information about Respondent	
Age	
Education No formal education Up to primary Secondary Tertiary	
Relationship Status Single Married/partner Living together Not living together	
No. of children Living in household Living elsewhere	

May I start recording? *[Start recording]*

Good [afternoon/morning] thank you for participating today. I have asked you to meet with me in the hope of learning more about men's experience with anti-retroviral treatment. Some of the

questions I will ask you may not want to answer and that is fine. Remember that your participation is completely voluntary. Also please keep in mind that there are no right or wrong answers, I am interested in anything you can share with me.

Questions – Men on ART
1. To begin with I was hoping you could tell me a bit about yourself. • Where you live, how is HIV perceived by people? • And what do people think about anti-retroviral treatment (ART)? • Do you think women and men think about ART differently? (If so, in what way?) • Do you notice a difference between older and younger men in the way they see ART? • Can you tell me about the time you found out that you were HIV-positive? • Can you take me through what happened then? • Did you share your result with anyone? • Did you have anybody to support you? • (If so, how did they support you?)
2. How did you get into the treatment program? • How did you feel about starting treatment? • What were your hopes? • What were your fears? • Can you take me through the process of being put on anti-retroviral treatment(ART)? • How did you find the procedure? • Did you experience any challenges? • Would the challenges have been the same in your opinion, if you were a woman? • Would the challenges have been different, if you were older/younger?
3. How long have you been on ART? • How is your experience with ART? • Are there things that make it easy to take the medication? • Are there things that make it difficult to take the medication? • When do you take your medication? • Do you have any issues with that? • Do you get any support in taking ART?
4. How do you find the service at the treatment center? • What do you like about the service? • What do you not like about the service? • Do you think it is a good service for men and women? • How far is it from where you live? • How do you get to the treatment center? • How long does it take at the treatment center? • How long do you have to wait? • How often do you go there?
5. In a perfect setting how would a treatment service for men look like? • Can you think of anything else that would facilitate the uptake of ART by men?
6. Is there anything you would have liked to say that I did not ask you about? We have come to the conclusion of the topics I had prepared to discuss today. **THANK YOU VERY MUCH FOR YOUR TIME AND INSIGHTS!**

Appendix 4 - IDI Guide Men from Community in English

IDI Guide Malawi: Men in Community

As we went over in the consent, we will record the interview and delete the recording after it has been transcribed. Our interview will probably last around 45-60 minutes. Do you have any questions before we begin?

Can I ask you some personal questions before we begin recording? As mentioned before, only the research team will have access to this information. (Go to Information about respondent)

IDI WITH MEN IN COMMUNITY	
The interviews will be saved under a pseudonym containing information on date of interview, no. of interviews per day and interviewer as well as the particular group of men interviewed: A* men with good VLS, A# men with poor VLS, B- men in community, C- stakeholders Example: IDI.B.AB.1.12.6.2019	
Interview Date (Day-Month-Year	
Location	
IDI Interviewer	
IDI Transcriber/Translator	
Length of IDI (in minutes)	
Interview pseudonym	
Information about Respondent	
Age	
Education No formal education Up to primary Secondary Tertiary	
Relationship Status Single Married/partner Living together Not living together	
No. of children Living in household Living elsewhere	

May I start recording? *[Start recording]*

Good [afternoon/morning] thank you for participating today. I have asked you to meet with me in the hope of learning more about men's experience in relation to HIV and anti-retroviral treatment. Some of the questions I will ask you may not want to answer and that is fine. Remember that your participation is completely voluntary. Also, please keep in mind that there are no right or wrong answers, I am interested in anything you can share with me.

Questions – Men in Community
1.To begin with I was hoping you could tell me a bit about the way you deal with health issues as a man. • In general, when you have a medical problem what do you do? • What are your reasons for going to….? • Do you ever go to the hospital? • What are your reasons for going/not going to the hospital?
2.Where you live, how is HIV perceived by people? • Are there people who live openly with HIV? • Are men among them? • Do men and women deal differently with HIV? • How are men who live with HIV seen in the community? • Is there a difference how men and women living with HIV are seen in the community?
3.Where is the nearest HIV testing site? • Do men make use of it? • Would you yourself go and test there? • Why? Why not? • What would be your preferred way of testing for HIV? • If you could choose between VCT or self-testing what would you prefer? • If you tested HIV-positive, what would be your next step/what would you do?
4.And what do people think about anti-retroviral treatment? • Where is the nearest treatment site? • Do you think men go to this site? • Why do you think they do/do not go? • Do you know the treatment site? • What do you like/not like about it? • If you were HIV positive and needed ART – where would you prefer to go?
5.What challenges do you think men who are on ART face? • How could these challenges be overcome? • Do women face the same challenges?
6.If you could offer a new treatment model for men – what would that look like? • Can you think of anything else that would facilitate the uptake of ART by men?
7.Is there anything you would have liked to say that I did not ask you about? We have come to the conclusion of the topics I had prepared to discuss today. **THANK YOU VERY MUCH FOR YOUR TIME AND INSIGHTS!**

Appendix 5 - IDI Guide Stakeholders in English

Stakeholders in Malawi

As we went over in the consent, we will record the interview and delete the recording after it has been transcribed. Our interview will probably last around 45-60 minutes. Do you have any questions before we begin?

Can I ask you some personal questions before we begin recording? As mentioned before, only the research team will have access to this information. (Go to Information about respondent)

IDI WITH STAKEHOLDERS	
The interviews will be saved under a pseudonym containing information on date of interview, no. of interviews per day and interviewer as well as the particular group of men interviewed: A* men with good VLS, A# men with poor VLS, B- men in community, C- stakeholders Example: IDI.C.AB.1.12.6.2019	
Interview Date (Day-Month-Year	
Location	
IDI Interviewer	
IDI Transcriber/Translator	
Length of IDI (in minutes)	
Interview pseudonym	
Information about Respondent	
Age	
Education Up to primary Secondary Tertiary	
Profession	
How long have you worked in the field of HIV?	
In what capacities have you worked in HIV?	

May I start recording? *[Start recording]*

Good [afternoon/morning] thank you for participating today. I have asked you to meet with me in the hope of learning more about men's experience in relation to HIV and anti-retroviral treatment. Some of the questions I will ask you may not want to answer and that is fine. Remember that your

participation is completely voluntary. Also, please keep in mind that there are no right or wrong answers, I am interested in anything you can share with me.

Questions – Stakeholders
1.To begin with I was hoping you could tell me a bit about your work on HIV and health. • Can you tell me, what do men do, if they face medical problems? • Where do they go?
2.How is HIV perceived in the communities? • Are there people who live openly with HIV? • Are men among them? • Have you seen changes over the years? • How do others see men living with HIV?
3.What do you think has worked well with regard to getting men to test for HIV? • Has this worked for young and older men? • And what do you think has not worked? • To what extent do men make use of existing testing sites? • Would you yourself go and test there? • Why? Why not? • How do you think most men would prefer to test for HIV?
4.What do people think about anti-retroviral treatment? • Has the message u=u any appeal to men? • Who does it appeal to – younger or older men? • Where are the nearest treatment sites around here? • Do you think men go to this site? • Why do you think they do/do not go? • Would you yourself go there? • Why/Why not?
5.What challenges do you think men face in accessing ART? • What could be done to improve this in terms of service delivery? • Once men are on ART what makes adherence and retention difficult for men? • What would help to improve adherence and retention?
6.If you could offer a new treatment and retention model for men – what would that look like? • Can you think of anything else that would facilitate the uptake of ART by men?
7.Is there anything you would have liked to say that I did not ask you about? We have come to the conclusion of the topics I had prepared to discuss today. **THANK YOU VERY MUCH FOR YOUR TIME AND INSIGHTS!**

Appendix 6: Consolidated Criteria for Reporting Qualitative Research

based on (Tong et al., 2017) with slight adaptation of guide question 1 for dissertation

	Guide questions/description	Reported on Page #
Domain 1: Research team and reflexivity		
1. Interviewer/facilitator	Who conducted the interviews? (Original: Which author/s conducted the interview?)	19. 25. 27-28. 36-37
2. Credentials	What were the researcher's credentials?	Researcher: 40-41 Team: 25. 27. 36
3. Occupation	What was their occupation at the time of the study?	Researcher: 40-41 Team: 27. 36
4. Gender	Was the researcher male or female?	Researcher: 42 Team: 27. 36
5. Experience and training	What experience or training did the researcher have?	Researcher: 40-41 Team: 27. 36
6. Relationship with participants established	Was a relationship established prior to study commencement?	26-27.31-32
7. Participant knowledge of the interviewer	What did the participants know about the researcher?	Researcher & Team: 28. 37
8. Interviewer Characteristics	What characteristics were reported about the interviewer/facilitator?	Researcher: 40-41 Team: 27. 36-37
Domain 2: Study design		
9. Methodological orientation and Theory	What methodological orientation was stated to underpin the study?	19-21
10. Sampling	How were participants selected?	26-27. 36-37
11. Method of approach	How were participants approached?	26. 36
12. Sample size	How many participants were in the study?	28. 37-38
13. Non-participation	How many people refused to participate or dropped out? Reasons?	-
14. Setting of data collection	Where was the data collected?	27. 37
15. Presence of non-participants	Was anyone else present besides the participants and researchers?	27-28
16. Description of sample	What are the important characteristics of the sample?	28-29; 37-38
17. Interview guide	Were questions, prompts, guides provided by the authors?	26. 28. 36. 38. Appendices 3-5. 9-17
18. Repeat interviews	Were repeat interviews carried out?	-
19. Audio/visual recording	Did the research use audio or visual recording to collect the data?	29. 37
20. Field notes	Were field notes made during and/or after the interview?	20.22.28.36-37

21. Duration	What was the duration of the interviews?	27. 37
22. Data saturation	Was data saturation discussed?	20. 27
23. Transcripts returned	Were transcripts returned to participants for comment and/or correction?	-
Domain 3: analysis and findings		
24. Number of data coders	How many data coders coded the data?	29. 39
25. Description of the coding tree	Did authors provide a description of the coding tree?	30-31. 39-40
26. Derivation of themes	Were themes identified in advance or derived from the data?	19-20. 29-30. 38-39
27. Software	What software, if applicable, was used to manage the data?	29. 38
28. Participant checking	Did participants provide feedback on the findings?	32
29. Quotations presented	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified?	50-117. 128-180
30. Data and findings consistent	Was there consistency between the data presented and the findings?	183-222
31. Clarity of major themes	Were major themes clearly presented in the findings?	183-222
32. Clarity of minor themes	Is there a description of diverse cases or discussion of minor themes?	183-222, see in particular: 188. 192-193. 199. 201. 208-209

Appendix 7 – Risk Assessment Guide, PrEP ESWATINI

PrEP for HIV Prevention: Part A Risk assessment
Facility name: _____

[insert serial number]
Date: DD MM YYYY

Consent for screening:	☐ Yes →	☐ First time PrEP Screening	☐ Repeat screening		
	☐ No				
Sex:	☐ Male	☐ Female	☐ Transgender		
DOB: DD MM YYYY					
Reason for visit:	☐ PrEP	☐ VCT	☐ OPD	☐ STI treatment	☐ ANC ☐ PNC
	☐ FP	☐ Other, _____		☐ Referral # _____	
Relationship status:	☐ Single, no relationship		☐ One partner, living together		
	☐ Multiple partners		☐ One partner, not living together		
Partner HIV status:	☐ Negative	☐ Positive	☐ Unknown	☐ No answer	
If partner HIV-positive:	☐ Partner on ART	☐ Partner **NOT** on ART	☐ Unknown partner ART status		
Education:	☐ None		☐ Secondary		
	☐ Primary		☐ Tertiary		
HIV test date: DD MM YYYY	☐ Non-reactive	☐ Indeterminate	☐ Reactive →	☐ Linked to ART	
HTS register #: _____					

Perceived risk: On a scale of 1-5, how high does the client perceive his/ her risk to get HIV. Circle the correct number.
1: No risk 2: Low risk 3: Some risk 4: High risk 5: Very high risk

In the past SIX months:		
1. Have you had unprotected (condom-less) sex?	☐ Yes	☐ No
2. Have you had sex with partners who are HIV positive or whose HIV status you did not know?	☐ Yes	☐ No
3. Have you had a sexually transmitted infection?	☐ Yes	☐ No
4. Have you been using post-exposure prophylaxis (PEP)?	☐ Yes	☐ No
5. Have you had sex under the influence of alcohol and/or drugs?	☐ Yes	☐ No
6. Have you experienced or do you expect any situations which you consider to be risky for acquiring HIV? If yes, specify: _____	☐ Yes	☐ No

If known, indicate if the client belongs to any of the following target populations (tick any that apply**):**

Young woman 16 – 25 years	☐ Yes	☐ No	
In sero-discordant relationship:	☐ Yes	☐ No	☐ Unknown
Sex worker:	☐ Yes	☐ No	☐ Unknown
MSM:	☐ Yes	☐ No	☐ Unknown
Client with current STI:	☐ Yes	☐ No	☐ Unknown
Pregnant:	☐ Yes	**EDD:** DD MM YYYY	
	☐ No	**LMP:** DD MM YYYY	
Lactating:	☐ Yes	☐ No	

Other at risk as per risk assessment:
☐ Yes ☐ No
If yes, specify:

Comments: _____

Conclusion:

☐ Client at substantial risk for HIV infection and interested in PrEP
→ Continue with eligibility assessment on next page

☐ Client at substantial risk for HIV infection and **NO** interest in PrEP
→ Discuss, offer and/ or refer for other HIV prevention services

☐ Client not at substantial risk for HIV infection
→ Discuss, offer and/ or refer for other HIV prevention services

Provided counselling on:
☐ Condoms
☐ VMMC → ☐ Referred for VMMC
☐ Delayed sexual debut
☐ Reducing # of sexual partners
☐ STIs
☐ Partner testing
☐ Test and Start
☐ Other, specify: _____

Initial & Date (Clinic Staff): _____ Initial & Date (Data Staff): _____

PrEP for HIV Prevention: Part B Eligibility assessment

Acute HIV Infection (AHI)

In the past 3 days have you had any of the following symptoms?

Sore throat	☐ Yes	☐ No
Fever	☐ Yes	☐ No
Night sweats	☐ Yes	☐ No
Swollen glands	☐ Yes	☐ No
Mouth ulcers	☐ Yes	☐ No
Headache	☐ Yes	☐ No
Rash	☐ Yes	☐ No
Generalized body pain	☐ Yes	☐ No
Intense fatigue	☐ Yes	☐ No

Possible exposure to HIV in the last **14** days: ☐ Yes ☐ No

☐ ≥1 symptom + possible exposure
→ Suspect AHI, defer PrEP initiation

☐ ≥1 symptom + no exposure
→ Differential diagnosis: _____

TB screening: ☐ Neg. ☐ Pos. ☐ Active TB

STI symptom screening

In the past 3 days have you had any symptoms of an STI?

Genital sore or ulcer	☐ Yes	☐ No
Vaginal/penile/anal discharge	☐ Yes	☐ No
Vulval/penile itching /burning	☐ Yes	☐ No
Lower abdominal pain	☐ Yes	☐ No
Scrotal swelling	☐ Yes	☐ No
Inguinal bubo	☐ Yes	☐ No

Differential diagnosis: _____

RPR / Syphilis (if symptomatic) ☐ Yes ☐ No

Date tested: DD MM YYYY

Result: ☐ Non-reactive ☐ Reactive → ☐ Rx given

Hepatitis B test and vaccination

HBsAg test date: DD MM YYYY Result: ☐ Neg. ☐ Pos.

If HBsAg positive: AST result_____ ALT result_____

Management_____

Vaccination: ☐ Not done ☐ Reported ☐ Documented

Known NCDs:

HPT: ☐ Yes ☐ No

BP: _____

DM: ☐ Yes ☐ No

Serum creatinine

Date sample drawn: DD MM YYYY Result: _____ µmol/ L

Age : _____ years CrCl: _____mL/min

Weight: _____ kg

(140 – Age) x weight in kg x 1.23
Serum creatinine (in µmol/L

(140 – Age) x weight in kg x 1.04
Serum creatinine (in µmol/L

Eligibility checklist (tick all that apply)		
1. Participant is ≥16 years	☐ Yes	☐ No
2. HIV test is non-reactive	☐ Yes	☐ No
3. At substantial risk for HIV infection	☐ Yes	☐ No
4. Do not suspect acute HIV infection	☐ Yes	☐ No
5. Baseline creatinine taken	☐ Yes	☐ No
6. Baseline HBsAg taken	☐ Yes	☐ No
7. Participant is > 40 kg	☐ Yes	☐ No
8. Participant is willing/ able to come of follow up appointments	☐ Yes	☐ No
9. No contraindications to TDF (see guidelines)	☐ Yes	☐ No

Eligible for PrEP: ☐ Yes ☐ No ☐ Pending

Informed consent signed: ☐ Yes ☐ No

PrEP initiation: ☐ Yes ☐ No ☐ Deferred

If PrEP deferred next review date: DD MM YYYY

Other services offered/ provided:

Comments:_____

_____

Initial & Date (Clinic Staff): _____ Initial & Date (Data Staff): _____

Appendix 8 Self-assessment

AM I AT RISK FOR HIV?

DATE: DD / MM / YYYY

Complete the self-risk assessment below by ticking 'yes' or 'no' to the questions about your HIV risk behaviour **in the past 6 months.**

Age: _____ *Gender:* ☐*Female* ☐ *Male* ☐*Transgender*

What do you think is your level of HIV risk currently? ☐1: No risk ☐2: Low risk ☐3: Some risk ☐4: High risk ☐5: Very high risk

In the past SIX months:	Yes	No
1. Have you had unprotected (condom-less) sex?		
2. Have you had sex with partners who are HIV positive or whose HIV status you did not know?		
3. Have you had a sexually transmitted infection (STI)?		
4. Have you been using post-exposure prophylaxis (PEP)?		
5. Have you had sex under the influence of alcohol and/or drugs?		
6. Have you experienced or do you expect any situations, which you consider to be risky for getting HIV?		

Any 'yes' answer may mean that you are at risk for HIV infection.

Are you interested in learning more about PrEP to prevent HIV? ☐**Yes** ☐**No**

Give this card to your counsellor or nurse to discuss your HIV risk and determine if PrEP may be the right option for you -- See the back of this card for more information about HIV prevention methods.

Appendix 9 PrEP Focus Group Discussion Guide

As we went over in the consent, all of the information you provide will be kept confidential and your names will not be recorded. Just as a reminder our discussion will probably last around 60 minutes. Some of the questions I will ask you may not want to answer and that is fine. Remember that your participation is completely voluntary. Also, please keep in mind that there are no right or wrong answers, I am interested in anything you can share with me. Does anyone have any questions before we begin? May I start the recording? *[Start recording]*

Good [afternoon/morning] thank you for participating today! The Ministry of Health has recently started to pilot a new HIV prevention method called PrEP in some selected facilities in the country. PrEP stands for Pre-exposure prophylaxis and is a HIV prevention method. It is recommended for people who are at very high risk of contracting HIV. PrEP is a pill that needs to be taken everyday in order for it to work properly. When taken daily, PrEP has been shown to reduce the risk of HIV infection in people who are at high risk by up to 92%. There are, however, side-effects that may be associated with taking PrEP. PrEP is much less effective if it is not taken consistently. People who use PrEP must commit to taking the drug every day and seeing their health care provider for follow-up every 3 months. PREP does not prevent pregnancy or other sexually transmitted infections.

I have asked you to meet with me in the hopes of learning more about the best way to promote this new HIV prevention method and educate people who could potentially benefit from PrEP. We will use the information learned from this group discussion to design a feasible, understandable, effective and culturally sensitive PrEP promotion package (PPP) that will be tested in the health facilities participating in the study. Each of you was invited to participate in this discussion as you are all representing different groups of the community and your opinions can inform us to develop the best PPP. Your comments and opinions will be strictly confidential. We will be taking notes and also recording our conversations so that we can accurately capture and report your views. Your comments will be combined with those from other meetings as well as information gathered from interviews with clients at facilities, health care workers and policy makers and implementers.

Questions for Focus Group Discussion:	
1.	We're going to be talking today a lot about HIV and HIV prevention campaigns. To begin, how do you think HIV is viewed in Swaziland today? How does this compare with the past?
2.	Think of a health campaign around HIV prevention that, in your opinion or in the opinion of others in the community, was done well. It could be something that you have heard on the radio, read on a poster, seen in a dramatized play, learned about from a friend or during a community event. Think broadly. Do you have one in mind (interviewer pauses for confirmation) Good. Now please tell me about that. What makes you feel that this communication message was well done? What did people in the community like about the message? What made it effective?
3.	Now, think of a communication initiative around HIV prevention that, in your opinion or in that of others, was not done well. What makes you feel that this communication message was not done well? What did people in the community not like about the message or the method?
4.	How and where do you and others in the community normally receive information around HIV prevention services?
5.	Where would you and others in this community like to receive information about HIV prevention services? Why?
6.	What can be done to promote access and utilization of HIV prevention services? *(Probe for men/ women/young people/ couples/ key populations)*
7.	"Now I would like to show you some educational materials about PrEP that you might or might not have seen before. (Interviewer shows the current MoH PrEP material to the respondent). Please tell me some words that come to your mind when you see this (INSERT WORD e.g. poster, flyer, palm card). There are no right or wrong words; I am looking to learn from your first impressions and thoughts. All thoughts are welcome
a.	PROBES- Is there anything you like about this? Please tell me more about that.

b.	PROBES- Is there anything you don't like about this. Please tell me more about that.
c.	PROBES- What do you read as the main message from this? Please tell me more about that. PROBES- If you would be able to change this material, is there anything you would change/ add. Please explain?
8.	Thank you for your thoughts about this flyer/ poster/palm card. Thinking back to the communication message you mentioned you liked in the beginning, do you think similar material/ methods can be adopted for PrEP? Why or why not?
9.	Do you talk about health messages with your friends and family or others you know? How does the conversation typically go?
10.	Do you think you would be comfortable to talk about PrEP with your friends, family or other people you know? Please explain?
11.	We are trying to make the most effective, informative PrEP messaging possible and to make it easier for people to access PrEP. Can you think of anything else that we should consider in order to inform and educate more people about PrEP?
12.	Are there other things you would like to say before we wind up?

***

Appendix 10 PrEP Interview Guide - PrEP Uptake

Client experiences with uptake and use of HIV pre-exposure prophylaxis in Eswatini

As we went over in the consent, all of the information you provide will be kept confidential. Just as a reminder our interview will probably last around 45-60 minutes. Do you have any questions before we begin? May I start the recording? *[Start recording]*

Good [afternoon/morning] thank you for participating today! I have asked you to meet with me in the hopes of learning more about your experience with pre-exposure prophylaxis (PrEP) and themes related to how to improve your experience learning about, accessing and taking PrEP. Some of the questions I will ask you may not want to answer and that is fine. Remember that your answers are confidential and participation is completely voluntary. Also please keep in mind that there are no right or wrong answers, I am interested in anything you can share with me.

Questions for PrEP uptake:	
1.	I'd like to ask you a few questions about PrEP in general.
a.	What did you think when you heard about this pill?
b.	Were there any things that you wondered about when you first heard about this pill?
c.	If you could have had more information, what would you have liked to know?
d.	What made you think that PrEP might make sense for you?
2.	Now please walk me through your story from when you heard about PrEP until now. If you don't mind, I'll interrupt sometimes to get more details.
a.	Probe on what made you think that PrEP would be effective?
b.	Probe on what makes you feel good about starting on PrEP?
c.	Probe on what makes you think you will be able to take the pill every day?
3.	Please tell me about any hesitations, concerns or worries you have regarding starting PrEP?
4.	When you need to collect your pills for PrEP, what will be the steps you need to take?
a.	Are there some things that you can imagine will make it hard to collect the pills?
b.	Are there some things that will make it easy to collect the pills?
c.	What do you think the health facility or others who design health promotion programs could do to make it easier for you to collect your PrEP pills?
d.	Can you tell me about how you feel asking for PrEP here?
5.	In your opinion, what are the reasons that someone would not take PrEP?
6.	Please tell me whether you think PrEP is more useful for men or for women or is there no difference?

7.	Please tell me about some things that would make it hard for people like you and people you know to get PrEP?
a.	How could things be changed to make it easier for you and others in Swaziland to get and routinely take PrEP?
8.	Do you know anyone else who is currently taking PrEP?
a.	How was their experience starting on PrEP different or similar to yours?
b.	How did you and this person come to start talking about PrEP?
9.	Now you are going to start taking PrEP, can you tell me about who else will benefit in your family or your friends as a result of this?
a.	Probe on why they think they will/will not benefit?
b.	Probe on thoughts regarding children benefiting.
c.	Probe on thoughts regarding other family members benefiting.
d.	Probe on community and society benefit.
10.	Some people are taking PrEP because a family member, friend or colleague advised them to. Did anyone advise you to take PrEP?
a.	Did anyone tell you not to take PrEP?
b.	If yes, can you tell me about who they are?
c.	Please tell me about any family members, friend or colleagues that would try to stop you from taking PrEP?
11.	Do you think PrEP is a topic that men and women in Swaziland feel comfortable discussing with friends and/or partners? Why or why not?
a.	Probe on discussing health
b.	Probe on discussing HIV
c.	Probe on discussing sex
12.	Now, I would like to discuss something a bit more intimate. Please remember that all information you share is confidential and will only be shared with the research team for purposes of improving access to PrEP. Ok? (pause). I would like to talk about your intimate life in relation to PrEP (pause). How do you think PrEP may affect your sexual life?
a.	Has it affected or might it affect, whether or how you discuss HIV status with partners?
b.	How might it effect whether you use condoms?
c.	How might it effect on the number of sexual partners you may have?
13.	Lots of people are HIV positive in Swaziland. Can you tell me about how you have remained HIV negative?
a.	Probe on sexual creativity
b.	Probe on any other forms of protection
c.	Probe on conversations with partners
14.	Thinking about your sexual partner/s, how do you think they will feel about you taking PrEP?
a.	How would you feel if you found that your partner/s were taking PrEP?
15.	Please tell me about how you feel about PrEP in comparison with other HIV prevention methods?
16.	Now let's think about the future. How do you envision plans in the coming months in relation to PrEP, if at all? What is your view of how you will take PrEP in the coming months?
a.	What are some life events or other factors that would influence whether you would continue to take PrEP in the future?
b.	What are some circumstances that you could imagine would make it very hard for you to stay on PrEP?
c.	What could people do to help you overcome this challenge?
17.	Thinking about the future, please tell me what you think remaining HIV negative means for your future aspirations?
a.	Probe on future education plans.
b.	Probe on future work plans.
c.	Probe on plans in relation to having a family/ adding to family.
18.	Please tell me about whether you feel at high or low risk for HIV.
a.	Probe on why
19.	Please tell me about how important it is for you to remain HIV negative.

20.	Can you tell me about other health concerns you have generally?
21.	Is there a time earlier in life when, looking back now, you wish you would have had access to PrEP? Please tell me about it.
22.	I'd like to ask you about some of the PrEP promotion materials which are being used.
a.	When you came to the facility, did you watch a video on PrEP? If yes, can you tell me how you felt about the video?
b.	Please tell me what you think about the counselling flip chart. Can you tell me how this has influenced how you feel about PrEP?
c.	What do you think about the risk assessment form?
d.	Please tell me about what you like and why
e.	Please tell me about what you don't like and why
f.	Please tell me about what you would change
23.	To conclude, what would be your recommendation to improve your experience with PrEP?
24.	What do you think is the biggest challenge to preventing new HIV infections in Swaziland?
25.	And finally, is there anything that I didn't ask you that I should have asked you?
26.	Is there anything else that you would like to add?

We have come to the conclusion of the topics I had prepared to discuss today. **THANK YOU FOR YOUR TIME!**

****

Appendix 11 PrEP Interview Guide - PrEP Decline

Client motivations to decline PrEP offer

As we went over in the consent, all of the information you provide will be kept confidential. Just as a reminder our interview will probably last around 45-60 minutes. Do you have any questions before we begin? May I start the recording? *[Start recording]*

Good [afternoon/morning] thank you for participating today! I have asked you to meet with me in the hopes of learning more about your experience with HIV prevention services offered in this facility and more specific about pre-exposure prophylaxis (PrEP). Some of the questions I will ask, you may not want to answer and that is fine. Remember that your answers are confidential and participation is completely voluntary. Also please keep in mind that there are no right or wrong answers, I am interested in anything you can share with me.

Questions for PrEP decliners:	
1.	I'd like to ask you a few questions about PrEP in general.
a.	What did you think when you heard about PrEP?
b.	Were there any things that you wondered about when you first heard about PrEP?
c.	If you could have had more information, what would you have liked to know?
d.	What made you think that PrEP doesn't make sense for you?
e.	What are your concerns regarding PrEP?
2.	Let us imagine that there is a woman. She does not know her husband's HIV status. She thinks he may have other sexual partners.
a.	Would it make sense for her to take PrEP?
b.	What would be some of the benefits for a person like her taking PrEP?
c.	What would be some of the drawbacks?
3.	Let us imagine that there is a man. He knows his wife is HIV positive. He is negative.
a.	Would it make sense for him to take PrEP?
b.	What would be some of the benefits for a person like him taking PrEP?
a.	What would be some of the drawbacks of him taking PrEP?

4.	Do you think PrEP is a topic that men and women in Swaziland feel comfortable discussing with friends and/or partners? Why or why not?
a.	Probe on discussing health.
b.	Probe on discussing HIV
c.	Probe on discussing sex.
5.	Please tell me whether you think PrEP is more useful for men or for women or is there no difference?
6.	Some people are taking PrEP because a family member, friend or colleague advised them to. Did anyone advise you to take PrEP?
a.	Did anyone advise you not to take PrEP?
b.	If yes, can you tell me about who they are?
c.	Please tell me about any family members, friend or colleagues that would try to stop you from taking PrEP?
d.	Why did they advise you not to take PrEP?
7.	In your opinion, what are the reasons that someone would not take PrEP?
8.	Do you know anyone who is currently taking PrEP?
a.	Have you ever discussed PrEP with another person?
b.	How did the conversation go?
9.	Lots of people are HIV positive in Swaziland. Can you tell me about how you have remained HIV negative?
a.	Probe on sexual creativity.
b.	Probe on using any other forms of protection.
c.	Probe on conversations with partners.
10.	Please tell me about how at risk of acquiring HIV you feel.
a.	Probe on whether a risk assessment form was completed
b.	Probe on what the client thinks about the risk assessment form
11.	Now that you have declined PrEP, how will you remain HIV negative?
12.	Is there a time earlier in life when, looking back now, you wish you would have had access to PrEP? Please tell me about it.
13.	Can you imagine a time in the coming months or years when you might be willing to come back to learn more about PrEP or to request PrEP medicines?
14.	I'd like to ask you about some of the PrEP promotion materials which are being used.
a.	When you came to the facility, did you watch a video on PrEP? If yes, can you tell me how you felt about the video?
b.	Please tell me what you think about the counselling flip chart. Can you tell me how this has influenced how you feel about PrEP?
c.	Please tell me about any of the materials that have made you think that PrEP is not right for you
d.	Please tell me about what you like and why
e.	Please tell me about what you don't like and why
f.	Please tell me about what you would change
15.	To conclude, what would be your recommendation to improve your experience with PrEP?
16.	And finally, is there anything that I didn't ask you that I should have asked you?
17.	Is there anything else that you would like to add?

We have come to the conclusion of the topics I had prepared to discuss today. **THANK YOU FOR YOUR TIME!**

Appendix 12 PrEP Interview Guide - PrEP Continued Use

Client experiences with use of HIV pre-exposure prophylaxis in Eswatini

As we went over in the consent, all of the information you provide will be kept confidential. Just as a reminder our interview will probably last around 45-60 minutes. Do you have any questions before we begin? May I start the recording? *[Start recording]*

Good [afternoon/morning] thank you for participating today! I have asked you to meet with me in the hopes of learning more about your experience with pre-exposure prophylaxis (PrEP) and themes related to how to improve your experience learning about, accessing and taking PrEP. Some of the questions I will ask you may not want to answer and that is fine. Remember that your answers are confidential and participation is completely voluntary. Also please keep in mind that there are no right or wrong answers, I am interested in anything you can share with me.

Questions for PrEP continuers:	
1.	I'd like to ask you a few questions about PrEP in general.
a.	What did you think when you heard about this pill?
b.	Were there any things that you wondered about when you first heard about this pill?
c.	If you could have had more information, what would you have liked to know?
d.	What made you think that PrEP might make sense for you?
2.	Now please walk me through your story from when you heard about PrEP until now. If you don't mind, I'll interrupt sometimes to get more details.
a.	What made you feel good about starting on PrEP?
b.	What made you feel concerned or worried about starting PrEP?
c.	What has helped you take the pill every day?
3.	Now that you have been on PrEP for a while, what has been your experience?
a.	What have been some of the good experiences?
b.	What have been some of the challenges?
c.	Any medical challenges?
d.	Any adverse effects or side-effects from the pill?
e.	Please tell me about how you dealt with the side-effects?
f.	Any challenges in terms of taking the pill every day?
g.	Any tips or tricks that have made it easy for you to remember to take the pill every day?
h.	Any challenges in terms of getting a refill?
i.	Any tips or tricks that have made it easy for you to come back to get refills from the health facility?
j.	What do you think the health facility or others who design health promotion programs could do to make it easier for you and people like you to start and stay on PrEP?
k.	Can you tell me about how you feel asking for PrEP here?
l.	Have you had any health tests since you started PrEP?
m.	How do you feel about these regular health check-ups?
4.	Can you think of reasons why people would not want to take PrEP?
5.	Now, I would like to discuss something a bit more intimate. Please remember that all information you share is confidential and will only be shared with the research team for purposes of improving access to PrEP. Ok? (pause). I would like to talk about your intimate life in relation to PrEP (pause). Have you discussed PrEP with your partner?
a.	Probe on how the conversation went
b.	Probe on whether they were supportive / not supportive
6.	How (if at all) has PrEP affected your sexual life?
a.	Has it affected whether or how you discuss HIV status with partners?
b.	Has it had any effect on whether you use condoms or other prevention methods?
c.	Has it had any effect on the number of sexual partners you may have?
7.	Is PrEP a topic that men and women in Swaziland feel comfortable discussing with friends and/or partners? Why or why not?
a.	Probe on discussing health
b.	Probe on discussing HIV
c.	Probe on discussing sex

8.	Do you know anyone else who is currently taking PrEP?
a.	Probe on how did they and the person come to start talking about PrEP
b.	Probe on how their experience starting on PrEP similar of different to the person
c.	Probe on any challenges they faced and what they do to overcome these challenges
9.	Please tell me about how you feel about PrEP in comparison with other HIV prevention methods? a. Probe on other HIV prevention methods being used - if any - in addition to PrEP.
10.	Some people are taking PrEP because a family member, friend or colleague advised them to. Did anyone advise you to take PrEP?
a.	Did anyone tell you not to take PrEP?
b.	Probe on who they are
c.	Probe on any family members, friends or colleagues that would try to stop them from taking PrEP
11.	Now you have been taking PrEP, can you tell me about who else will benefit or has benefited as a result of this? Why do you think they will/will not benefit?
a.	Probe regarding children benefiting.
b.	Probe regarding other family members benefiting.
c.	Probe regarding community and society benefit.
12.	Now let's think about the future. How do you envision plans in the coming months in relation to PrEP, if at all? Some people who start PrEP view it as a drug that they will take forever, others view it differently. What is your view of how you will take PrEP in the coming months?
a.	What are some life events or other factors that would influence whether you would continue to take PrEP in the future?
b.	What are some circumstances that you could imagine would make it very hard for you to stay on PrEP?
c.	What could be done to help you overcome this challenge?
13.	Thinking about the future, please tell me what you think remaining HIV negative means for your future aspirations?
a.	Probe regarding future education plans.
b.	Probe regarding future work plans.
c.	Probe regarding plans in relation to having a family/ adding to family.
14.	Please tell me about what you think your HIV risk was before you started taking PrEP.
a.	Probe on what they think their risk is now that they have PrEP
15.	Is there a time earlier in life when, looking back now, you wish you would have had access to PrEP? Please tell me about it.
16.	Lots of people are HIV positive in Swaziland. Can you tell me about how you remained HIV negative before PrEP?
a.	Probe on sexual creativity
b.	Probe on any other forms of protection
c.	Probe on conversations with partners
17.	Please tell me about any other HIV prevention methods you are using.
18.	I'd like to ask you about some of the PrEP promotion materials which are being used.
a.	Please tell me what you think about the video or counselling flip chart. Have they influenced how you feel about PrEP?
b.	Please tell me about any of the materials that have helped you adhere.
c.	Please tell me about what you like and why
d.	Please tell me about what you don't like and why
e.	Please tell me about what you would change
f.	Please tell me what you think about the risk assessment form
19.	To conclude, what would be your recommendation to improve your experience with PrEP? What would you recommend to improve others' experience and access to PrEP?
20.	And finally, is there anything that I didn't ask you that I should have asked you?
21.	Is there anything else that you would like to add?

We have come to the conclusion of the topics I had prepared to discuss today. **THANK YOU FOR YOUR TIME!**

Appendix 13 PrEP Interview Guide - PrEP Discontinued

Client experiences with uptake and use of HIV pre-exposure prophylaxis in Eswatini

As we went over in the consent, all of the information you provide will be kept confidential. Just as a reminder our interview will probably last around 45-60 minutes. Do you have any questions before we begin? May I start the recording? *[Start recording]*

Good [afternoon/morning] thank you for participating today! I have asked you to meet with me in the hopes of learning more about your experience with pre-exposure prophylaxis (PrEP) and themes related to how to improve your experience learning about, accessing and taking PrEP. Some of the questions I will ask you may not want to answer and that is fine. Remember that your answers are confidential and participation is completely voluntary. Also please keep in mind that there are no right or wrong answers, I am interested in anything you can share with me.

Questions for PrEP discontinuers:	
1.	I'd like to ask you a few questions about PrEP in general.
a.	What did you think when you heard about PrEP?
b.	Were there any things that you wondered about when you first heard about PrEP?
c.	If you could have had more information, what would you have liked to know?
d.	What made you think that PrEP might make sense for you?
2.	Can you share your story of PrEP with me? From when you first heard about it until now?
a.	Probe on which month/year
b.	Probe on different characters that influenced PrEP use
c.	Probe on any circumstances that may have changed over the past weeks/months
d.	Probe on why stopped PrEP.
e.	Probe on whether there was there anybody who they talked to about PrEP and their decision to discontinue.
3.	Please tell me about any concerns or worries you have regarding PrEP.
4.	Please tell me about the story of getting the PrEP tablets. Where were you when this happened? Ok, you were in (this hallway, at that dispensary etc.), and who gave you the PrEP pills? Ok, the (nurse, pharmacist, doctor) gave you the pills. Now please walk me through those moments. You were waiting here and then what happened?
a.	Were there some things that have made it hard to collect the tablets?
b.	Were there some things that have made it easy to collect the tablets?
c.	What could have made it easier for you to collect your PrEP tablets?
d.	Can you tell me about how you feel asking for PrEP here?
e.	Have you had any health check-ups since you started on PrEP?
f.	When was your last check-up and what was checked?
g.	How do you view these check-ups?
5.	Please tell me about the time you left the facility to the first few days you were at home with the PrEP pills.
a.	Where did you keep your PrEP?
b.	Did anyone help you take your PrEP?
c.	When did you start taking them, if at all?
d.	How did it feel after the first few days of taking PrEP? Please tell me about your experience taking PrEP.
e.	Did you manage to integrate taking your PrEP into your daily routine?
f.	Can you tell me about how the pills made you feel?
g.	How do you feel about your health since taking PrEP?
6.	Do you think you will take PrEP again and why?
7.	Please tell me about what influenced your ability to take PrEP?
a.	Can you tell me about anything that could have been done to make this better for you?
8.	Can you tell me about other HIV prevention methods you use?
a.	Probe on if they are preferred
b.	Probe on how often they are used

9.	Thanks for telling me about your personal experience. Now, I'd like to get your insights about your own experience and the experience of Swazis more generally. Please tell me about things that might make it hard for people to get PrEP? How could things be changed to make it easier for you and others in Swaziland to get and routinely take PrEP?
10.	Please tell me about anyone else you know that is taking PrEP.
a.	What was their experience getting PrEP?
b.	How did you come to talk about PrEP?
c.	Are they happy with PrEP?
11.	Some people are taking PrEP because a family member, friend or colleague advised them to. Did anyone advise you to take PrEP?
a.	Did anyone tell you not to take PrEP or to discontinue PrEP?
b.	If yes, can you tell me about who they are?
c.	What do they think about PrEP?
d.	Please tell me about any family members, friend or colleagues that would try to stop you from taking PrEP?
12.	Now PrEP has been in Swaziland for a while, do you think PrEP is a topic that men and women feel comfortable discussing with friends, family and/or partners? Why or why not?
a.	Probe on discussing health
b.	Probe on discussing HIV
c.	Probe on discussing sex
13.	Now, I would like to discuss something a bit more intimate. Please remember that all information you share is confidential and will only be shared with the research team for purposes of improving access to PrEP. Ok? (pause). I would like to talk about your intimate life in relation to PrEP (pause). How do you think PrEP may or has affected your sexual life?
a.	Has it affected or might it affect, whether or how you discuss HIV status with partners?
b.	Did it effect whether you use condoms?
c.	Did it effect the number of sexual partners you had/have?
14.	Thinking about your sexual partner/s, how do you think they feel about you discontinuing PrEP?
a.	How would you feel if you found that your partner/s were taking PrEP?
b.	How would you feel if your partner was taking PrEP and then discontinued?
15.	Lots of people are HIV positive in Swaziland. Can you tell me about how you have remained HIV negative until now?
a.	Probe on sexual creativity
b.	Probe on any other forms of protection
c.	Probe on conversations with partners
16.	Please tell me about how you feel about PrEP in comparison with other HIV prevention methods?
17.	Please tell me about how important it is for you to remain HIV negative.
18.	Now you have stopped taking PrEP, how will you remain negative?
19.	Thinking about the future, please tell me what you think remaining HIV negative means for your future aspirations?
a.	Probe on future education plans.
b.	Probe on future work plans.
c.	Probe on plans in relation to having a family/ adding to family.
20.	Is there a time earlier in life when, looking back now, you wish you would have had access to PrEP? Please tell me about it.
21.	To conclude, what would be your recommendation to improve your experience with PrEP?
22.	Can you tell me about other health concerns you have generally?
a.	Probe on what they are
b.	Probe on how important they are
23.	And finally, is there anything that I didn't ask you that I should have asked you?
24.	Is there anything else that you would like to add?

We have come to the conclusion of the topics I had prepared to discuss today.
THANK YOU FOR YOUR TIME!

***

Appendix 14 PrEP Interview guide – PrEP Provider

PrEP providers' experiences with HIV pre-exposure prophylaxis in Eswatini
As we went over in the consent, all of the information you provide will be kept confidential. Just as a reminder our interview will probably last around 45 minutes. Do you have any questions before we begin? May I start the recording? *[Start recording]*

Good [afternoon/morning], thank you for participating today! I have asked you to meet with me in the hopes of learning more about your experience providing pre-exposure prophylaxis (PrEP). Remember that your answers are confidential and participation is completely voluntary. Also please keep in mind that there are no right or wrong answers, I am interested in anything you can share with me.

Questions for healthcare workers involved in PrEP provision	
1.	Can you tell me a little bit about yourself?
a.	How long have you worked in healthcare?
b.	What do you enjoy about your job?
c.	What is it that makes your job difficult?
2.	As I mentioned earlier, the main focus of our discussion is PrEP. This facility has been implementing PrEP for a few months now. What has been your role in PrEP provision at this facility?
3.	Do you feel your perceptions of PrEP have changed since you first started to offer PrEP? If yes, in which way?
4.	How do you feel about PrEP?
5.	How do you feel PrEP compares with other HIV prevention methods?
a.	Probe on ease of use
b.	Probe on effectiveness
c.	Probe on desirability
d.	Probe on availability
6.	Now I want to talk about offering PrEP to patients.
a.	For whom does PrEP make sense?
b.	What is your personal opinion about who should be offered PrEP?
c.	What are some of the things that you have to think about as a provider in this facility when to offer PrEP?
d.	What are some of the things that you have to think about as a provider in this facility how to offer PrEP?
e.	What are some of the things that you have to think about as a provider in this facility to whom to offer PrEP?
7.	Who should not be offered PrEP?
8.	Has there been a time when you or colleagues hesitated or decided against offering PrEP?
9.	This facility has started using the PrEP promotion packages. Do you feel the PPP has influenced the way you are providing PrEP to clients? If yes, in which way?
10.	Can you tell me your experience in using the following PPP components? Please tell me what you like or not like about it and what is easy or difficult about it:
-	PrEP video
-	HIV self- risk assessment card
-	PrEP counselling card
-	PrEP client information booklet
-	PrEP T-shirt

11.	PrEP is offered at your clinic and other clinics. Do you see the clinic-centred approach as the best way of delivering PrEP?
a.	Probe on who is and who is not reached by clinics
12.	How has offering PrEP services affected your day-to-day workload in the facility, if at all?
13.	What do you think the long term effect of PrEP will mean for your workload?
14.	Please tell me about how you feel about your job. Do you think having PrEP will change this?
15.	Is there anything you feel you need (that you currently do not have) that could support you to adequately implement PrEP at your facility?
16.	Can you walk me through / describe a time when you had a particularly interesting or difficult client that you were advising or initiating regarding PrEP?
a.	Probe on sexual partners
b.	Probe on home / social situation
c.	Probe on how they advised them
17.	How have clients responded when you recommend that they use PrEP?
a.	Have clients that you have interacted with had a positive experience with it?
b.	What benefits and challenges did they highlight?
18.	How do you think we can improve retention of clients on PrEP?
19.	What do you do when a client misses an appointment/s?
20.	How do you think we can help clients adhere?
21.	Is PrEP a topic that men and women in Swaziland feel comfortable discussing with friends and/or partners? Why or why not?
a.	Probe on discussing health
b.	Probe on discussing sex
c.	Probe on discussing HIV
22.	Some people are taking PrEP because a family member, friend or colleague advised them to. Do you know if any of your clients were advised to take PrEP? Did anyone tell them not to take PrEP?
a.	If yes, can you tell me about who they are?
b.	Please tell me about any family members, friend or colleagues that would try to stop your clients from taking PrEP?
23.	Do you feel that offering PrEP has changed your perceptions or awareness about your own HIV risk?
24.	Can you tell me about your own personal HIV prevention strategy and if you would/are taking PrEP and why?
25.	What do you think is the biggest challenge to preventing new HIV infections in Swaziland?
26.	Do you have any suggestion on how to improve PrEP uptake in your facility?
27.	Is there anything I didn't ask you that I should have asked you in relation to PrEP?
28.	Is there anything else you would like to tell me?

We have come to the conclusion of the topics I had prepared to discuss today. Are there any further comments you would like to add? **THANK YOU FOR YOUR TIME!**

***

Appendix 15 PrEP Interview guide – PrEP Stakeholder

PrEP stakeholders in Eswatini

As we went over in the consent, all of the information you provide will be kept confidential. Just as a reminder our interview will probably last around 45-60 minutes. Do you have any questions before we begin? May I start the recording? *[Start recording]*

Good [afternoon/morning] thank you for participating today! I have asked you to meet with me in the hopes of learning more about your experience with health education, information and communication material related to pre-exposure prophylaxis (PrEP), and to learn your thoughts

about PrEP in general. As an intervention for the PrEP demonstration project in Hhohho region, we are trying to have some initial information gathering on the design for the most feasible, acceptable and sustainable PrEP Promotion Package. Some of the questions I will ask you may not want to answer and that is fine. Remember that your answers are confidential and participation is completely voluntary. Also please keep in mind that there are no right or wrong answers, I am interested in anything you can share with me.

Questions for PrEP stakeholders:	
1.	To begin, I was hoping you could tell me a bit more about yourself?
a.	Can you tell me a bit more about your position and responsibilities?
b.	How do you fit within the PrEP "world"?
2.	Can you tell me where you first heard about PrEP?
a.	What were your very first thoughts upon hearing about this prevention regimen?
3.	Sadly, HIV has been around a long time. And in recent decades, a lot of interventions and programs to address HIV have been introduced in Swaziland. How do you feel about PrEP as an additional HIV prevention strategy?
a.	What are some things about PrEP that make you feel hopeful?
b.	What are some things about PrEP that make you feel skeptical?
4.	Now I would like to show you some of the information, education and communication material that are available at select facilities in relation to PrEP.
a.	Have you seen this before?
b.	Please tell me some words that come to your mind when you see this flyer/poster. There are no right or wrong words.
c.	Is there anything you like about this? Please tell me more about that.
d.	Is there anything you don't like about this. Please tell me more about that.
e.	If you could change the message/ content, is there anything you would like to change? What would you add? What would you remove? Please explain.
5.	From your experience, which methods have you seen working in other health related interventions in the past? When I say "working," I mean that the interventions compelled patients to seek the care that the message intended.
a.	What do you think it was about those interventions that made them work well?
b.	How could we adapt the effective ingredients of that intervention for PrEP? Please provide as much detail as possible.
6.	Thanks for this lively conversation. I want to now talk about some bigger picture issues in relation to PrEP. By bigger picture, I mean some of the larger forces that can affect the day-to-day routines of getting a treatment regimen like PrEP introduced as part and parcel of care provided in facilities. Please tell me about some of the "bigger forces" that have affected the introduction and uptake of PrEP.
a.	Probe on novelty or newness of PrEP
b.	Probe on PrEP and issues of morality/ social mores/ social pressure
c.	Probe on PrEP and risk compensation
d.	Probe on economic situation in country
e.	Probe on political situation in country
f.	What do you feel is needed in order to get PrEP adopted in Swaziland as a National policy?
7.	We are nearing the end. Now, I'd like to think about the future in relation to PrEP. What do you envision as the future of PrEP?
a.	If we assume for a moment that PrEP would continue what are some of your hopes, plans, concerns in relation to PrEP?
8.	We are trying to make the most effective, informative PrEP messaging possible and to make it easier for people to access PrEP. Can you think of anything else that we should consider (whether a big issue in relation to PrEP as a topic or a specific suggestion in relation to the IEC materials) in order to make PrEP accessible, affordable and available to people in Swaziland?
9.	Is there anything I haven't asked you that I should have asked you?

We have come to the conclusion of the topics I had prepared to discuss today. Are there any further comments you would like to add? **THANK YOU FOR YOUR TIME!**

Appendix 16 PrEP Interview guide – Community leader

Community leaders in Eswatini

As we went over in the consent, all of the information you provide will be kept confidential. Just as a reminder our interview will probably last around 45-60 minutes. Do you have any questions before we begin? May I start the recording? *[Start recording]*

Good [afternoon/morning] thank you for participating today! I have asked you to meet with me in the hopes of learning more about your experience and perceptions related to a new HIV prevention strategy called pre-exposure prophylaxis (PrEP), You have been identified by men and women in your community as a key figure and community leader. We are interested to learn your thoughts regarding PrEP because you may have some influence regarding how PrEP is seen within your community. Some of the questions I will ask you may not want to answer and that is fine. Remember that your answers are confidential and participation is completely voluntary. Also please keep in mind that there are no right or wrong answers, I am interested in anything you can share with me.

Questions for community leaders:	
1.	To begin, I was hoping you could tell me a bit more about yourself?
a.	Can you tell me a bit more about your position and responsibilities?
b.	How do you represent your community?
c.	Please give me an example of a health matter you have discussed with a community member or the community generally.
2.	Can you talk me through how you have spoken with your community regarding HIV prevention strategies?
3.	Please tell me about what makes advising your community regarding matters relating to HIV and sex difficult.
a.	Probe on culture
b.	Probe on religion
c.	Probe on gender
d.	Probe on age
e.	Probe on knowledge levels
f.	Probe on stigma
4.	Please tell me about what makes advising your community regarding matters relating to HIV and sex easy.
5.	What have you heard about PrEP?
6.	How do you feel about PrEP as an HIV prevention method?
7.	Who do you think PrEP should be for?
8.	Who do you think PrEP shouldn't be for?
9.	Can you tell me what you think PrEP means for your community?
10.	Can you tell me about who you think will benefit the most from PrEP in your community?
11.	Some of the PrEP clients we have spoken to in the clinic say they were advised to take PrEP by a family member, friend or someone else in the community. Can you tell me about;
a.	What things you would consider when advising someone to take PrEP or not?
b.	Who you would not advise to take PrEP?
c.	Who you would advise to take PrEP?
12.	How do you feel about PrEP in comparison to other HIV prevention strategies?
a.	What are some things about PrEP that make you feel hopeful?
b.	What are some things about PrEP that make you feel skeptical?
13.	Can you tell me about any training or information you have received regarding PrEP?
a.	Probe on whether it was informative
b.	Probe on where and from whom they had training
c.	Probe on would they like training / more training
14.	Where do you think PrEP should be delivered?

15.	Have you already been approached by someone who wanted to talk about PrEP? How did that conversation go?
a.	Probe on what they discussed
b.	Probe on whether they referred them to a clinic
c.	Probe on why they discussed this with them
16.	How do you think the conversation would go when trying to discuss PrEP with a member of your community?
a.	Probe on where would the conversation take place
b.	Probe on adolescents
c.	Probe on men
17.	If someone was uncomfortable discussing PrEP with you, where would you advise them to go?
18.	What can you do to inform your community better about the different HIV prevention methods available, including PrEP?
19.	Please tell us about whether you would support community engagement with PrEP.
a.	Probe on promoting materials
b.	Probe on helping with the risk assessments
c.	Probe on referral to clinics
20.	Thinking about the future, can you tell me about how PrEP will affect your community?
a.	Probe on education
b.	Probe on Children
c.	Probe on Jobs
d.	Probe on Illness
21.	What do you think is the biggest challenge to preventing new HIV infections in Swaziland?
22.	Is there anything I haven't asked you that I should have asked you?

We have come to the conclusion of the topics I had prepared to discuss today. Are there any further comments you would like to add? **THANK YOU FOR YOUR TIME!**

***

Appendix 17 PrEP Interview guide – Decision Maker

Decision makers in Eswatini

As we went over in the consent, all of the information you provide will be kept confidential. Just as a reminder our interview will probably last around 45-60 minutes. Do you have any questions before we begin? May I start the recording? *[Start recording]*

Good [afternoon/morning] thank you for participating today! I have asked you to meet with me in the hopes of learning more about your experience and thoughts about PrEP. Some of the questions I will ask you may not want to answer and that is fine. Remember that your answers are confidential and participation is completely voluntary. Also please keep in mind that there are no right or wrong answers, I am interested in anything you can share with me.

Questions for PrEP decision makers:	
1.	To begin, please tell me a bit more about yourself and responsibilities?
2.	Please tell me what you think and feel about PrEP.
3.	Keeping in mind that there are no right or wrong answers, in your understanding, what is PrEP?
a.	What do you know about PrEP?
b.	What would be a name that you would give PrEP?
c.	Why would a person take PrEP?
d.	Why would a person not take PrEP?
e.	Who is PrEP for?
f.	What else do you know about PrEP?

4.	I am talking to you today because I was informed that you played a role in somebodies decision making regarding Prep. Could you tell me a little more about the conversation you had about PrEP.
a.	Did you encourage/ discourage [partner/ child/ friend etc] to take PrEP?
b.	Can you tell me why you encouraged/ discouraged the person to take or not to take PrEP?
5.	Please tell me about other HIV prevention methods that you would / would not recommend and why?
6.	Can you talk me through how you have spoken with your this person [spouse/ child/ friend etc] regarding other HIV prevention strategies such as condom use or circumcision?
7.	Can you tell me about who you think will benefit the most from PrEP among your family, friends and community?
a.	Who you would not advise to take PrEP?
b.	Who you would advise to take PrEP?
8.	Sadly, HIV has been around a long time. And in recent decades, a lot of interventions and programs to address HIV have been introduced in Swaziland. How do you feel about PrEP as an additional HIV prevention strategy?
a.	What are some things about PrEP that make you feel hopeful?
b.	What are some things about PrEP that make you feel skeptical?
9.	Can you tell me about any information you have received regarding PrEP?
a.	Probe on whether it was informative.
b.	Where and from whom.
c.	Would they like more information?
10.	Do you think PrEP is a topic that men and women in Swaziland feel comfortable discussing with friends and/or partners? Why or why not?
a.	Probe regarding discussing sex.
b.	Probe regarding discussing HIV.
c.	If someone was uncomfortable discussing PrEP with you, where would you advise them to go?
11.	Can you think of anything that we should consider in order to make people aware of the availability and accessibility of PrEP?
a.	In the facility
b.	In the community
12.	Thinking about the future, can you tell me about how PrEP will affect your family? [only ask if relevant]
a.	Probe on education
b.	Probe on Children
c.	Probe on Jobs
d.	Probe on Illness
e.	Probe on wider community impact
13.	Please tell me about how at risk you think you and your family are of acquiring HIV.
14.	What do you think is the biggest challenge to preventing new HIV infections in Swaziland?
15.	Is there anything else you would like to share with me regarding PrEP?

We have come to the conclusion of the topics I had prepared to discuss today. Are there any further comments you would like to add? **THANK YOU FOR YOUR TIME!**

Curriculum Vitae Astrid Berner-Rodoreda

Address and Tel. No.	Landhausstraße 109/3, 70190 Stuttgart, Tel: 0179 4646063
Nationality	German
Date/Place of Birth	21.12.1965/Esslingen
Family	Married, children: Sophie (27), Ben (21)

Education

2018-now Candidate Dr. Sc. hum. (Heidelberg Institute of Global Health, Univ. of Heidelberg Germany)

1990 M.A. in African Studies majoring in Social Anthropology (University of London, School of Oriental and African Studies, London, UK)

1989 B.A. Hons. (First Class) in Social Anthropology (major), Ethnomusicology (minor) (Queen's University, Belfast, UK)

Professional certificates and selection of completed skills courses

2021 Heidelberg Summer School: Auswertung qualitativer Interview- und Beobachtungsdaten (Allgemeinmedizin und Versorgungsforschung, Medizin. Fakultät Heidelberg)

2020 Hypothesis Testing in Public Health (Johns Hopkins University – Coursera)

2020 Research Methods: Writing (Heidelberg Institute of Global Health - HIGH)

2019 Completion of Research Training Ethics Curriculum (FHI 360)

2019 Epidemiology: The Basic Science of Public Health (Univ. of North Carolina - Coursera)

2019 Summary Statistics in Public Health (Johns Hopkins University - Coursera)

2018 Advanced Epidemiology and Biostatistics for Doctoral Students (HIGH)

2017 Social Norms, social change (University of Pennsylvania – Coursera)

2006 Qualität als Prozess Moderatorin (frey Akademie, Dornbirn)

2002 Führung von Mitarbeitern und Mitarbeiterinnen (Diakonisches Werk der EKD)

1998 Moderation und Leiten von Besprechungen (Diakonisches Werk der EKD)

1996 Translator: English-German, German-English (National Accreditation Authority for Translators and Interpreters, Canberra, Australia)

1989 Teaching English as a Foreign Language Certificate (Angloschool, London)

1988 Certificate of Proficiency in English, grade A (Rupert Stanley College, Belfast)

Work Experience

University of Heidelberg, Heidelberg

Jan. 2018 – Now: ***Research Assistant, Heidelberg Institute of Global Health***

- Coordination of international research study (USA, Tanzania, Bangladesh, Germany) on ethical requirements for health policy experiments: ethical clearance, developing new interview style, conducting in-depth interviews and deliberative workshops with health experts, literature review, presentation at conferences, online survey on Covid-19 scenarios, publications, grant writing; Covid-19 study on collateral effects on families
- Analyzing and publishing data related to men and PrEP in Eswatini, grant writing, poster
- Preparing and implementing men and ART study in Malawi (ethical clearance, selecting and training research assistants, conducting/overseeing interviews, observation, transcription and quality checks), analyzing data and publishing findings, posters
- Conducting interviews globally on voluntary assisted partner notification
- Global Health and EU: participation in Future Search conference, publications
- Moderating three national/international Covid-19 panels (2021: Global Health Academy, Heidelberg; Public Health Movement, Germany; Bundesausschuss polit. Bildung)
- Teaching on M.Sc. Course 2018-2022: epistemology, methods, interview styles, data analysis, ethics, PrEP case study.
- Presentations: Interview Styles (Int. Colloquium on Migration, 2021), Global antibacterial resistance (Buko, 2021), PrEP (Action against AIDS, 2018), Patent vs. Patient (Univ. of Tübingen, UAEM Heidelberg, 2018), Advancing Access to Treatment (HIGH, 2018)

Bread for the World (BfdW), Berlin, formerly Stuttgart, Germany

2010 – Jan. 2018: ***Policy Advisor on HIV, Policy Department***

- Policy development of HIV within BfdW
- Conducting impact studies (Philippines; Armenia), HIV consultancy work worldwide and collaboration with project partners in Asia, Africa and Eastern Europe on evidence based approaches, access to treatment, transformative masculinity workshops
- Political and pharmaceutical advocacy work for access to medicines and diagnostics
- Presentations at national/international conferences, publications on transformative masculinity work and access to medicines.

2004 –2010: ***HIV Advisor for Africa Department (contract through EED, Bonn)***

- Consultancy work on HIV in Africa and workshops in Sub-Saharan African countries on HIV and gender; HIV and gender mainstreaming; HIV and food security
- Publication on HIV mainstreaming and measuring impact of HIV intervention
- Fact finding mission to India on prices of generic 2nd line treatment
- Political and pharmaceutical advocacy work and presentations at conferences

1999 – 2003: ***Head of Central and Southern Africa Desk***

- Personnel and financial responsibility for six staff and annual budget of 5-6 million Euros
- Strategic orientation of funding priorities for the region
- Collaboration with strategic partners and workshops with partner organizations

1996 –1999: ***Project Officer for Southern Africa (part-time)***

- Collaboration with project partners in South Africa, Lesotho, Namibia, Swaziland
- Setting up advocacy/research network: Kirchliche Arbeitsstelle Südliches Afrika

FAKT (German Consultancy Agency), Stuttgart, Germany

1996 – 1997: ***Consultant***

- Research and writing of policy paper on South Africa for Bread for the World based on desk study and one-month fact-finding mission to South Africa.

Aboriginal Areas Protection Authority, Darwin, Australia

1994 –1995: ***Anthropological Consultant***

- Recording and registering important sacred sites on request; recording sacred sites with female and male Aboriginal custodians of different Aboriginal groups in the Northern Territory to protect the sites against intended road or mining works.

Northern Territory University, Darwin, Australia

1994: ***Tutor for 1st year anthropology students, Anthropology Department***

Positions of Responsibility

2021	Interim Exec. Board Member of European Global Health Research Network
2020–now	Founding/Board Member of Public Health Movement, Germany
2016–2017	Board Member of Ecumenical Pharmaceutical Network, Kenya
2013–2017	Board Member of "Action against AIDS" (German Advocacy Network)
2013–2017	Member of HIV Strategy Group of Ecumenical Advocacy Alliance, Geneva
2009–2015	Chairperson: Int. Reference Group of Ecumenical HIV and AIDS Initiative
2007–2009	Representative at UNAIDS Monitoring and Evaluation Group
1999–2001	Chairperson of KASA (German Ecumenical Justice Network Southern Africa)
1988–1989	Chairperson of Joint Student-Lecturer Committee, Anthrop. Dept., Belfast

Languages

Fluent	German, English
Studied at school/university	French (able to conduct workshops), Latin, Greek, Hebrew
Evening classes	Kiswahili, Indonesian (basic knowledge)

ACKNOWLEDGEMENTS

This work was inspired by many years of NGO-related HIV advisory work in Africa, Asia and Eastern Europe through Bread for the World, my former employer, whom I thank for the opportunity of collaborating with dedicated NGO staff globally.

My sincere thanks go to my Doktorvater, Prof. Till Bärnighausen, for accepting me, a mature age student, as a doctoral candidate. I am grateful for his encouragement throughout the doctoral process, for funding two trips to Malawi and for introducing me to novel research topics and methods and widening my academic network.

I am also deeply indebted to Dr. Florian Neuhann, my co-supervisor, who introduced me to the institute and with whom I had fruitful exchanges over many years from pharmacological topics to human rights issues – even before I embarked on this PhD journey. I deeply appreciated his support for the Malawi field study, his accompaniment, his never faltering interest in my doctoral work and his helpful feedback on draft chapters of my thesis. My heartfelt thanks also go to Prof. Sam Phiri, who was at the time Director of the Lighthouse Trust in Malawi for making the Malawi field-study possible, for his support and supervision. Many thanks also go to Boniface Chione, the Manager of the Lighthouse Trust/Umodzi Family Centre (UFC) in Blantyre, and the colleagues in the Monitoring and Evaluation unit who adopted me into their unit. My particular thanks go to Rosalia Dambe for collaborating closely with me on many facets of the field research and providing local support despite her own busy schedule and to her successor Moffo Eddie Phiri, both of whom kindly extracted data for this study from their laboratory information systems which formed the basis for the quantitative analysis. I would like to also thank my research assistants in Malawi for their commitment to the project, their outstanding interviewing skills and our daily joint reflections which shaped the qualitative research. I would further like to sincerely thank the crucial Back to Care unit staff without whom this study would not have been feasible as they were instrumental in setting up interviews with clients. I cannot name all the wonderful colleagues at the Umodzi Family Centre in person – receptionists, doctors, nurses, counsellors, laboratory and administrative staff; from the directorship to kitchen staff and guards, UFC felt like “family”.

I would further like to thank Dr. Shannon McMahon, Dr. Kate Bärnighausen, Anita Hettema, Sindi Matse and Dr. Pascal Geldsetzer for kindly sharing the Eswatini qualitative and quantitative data with me, for their approachability and for allowing me to add questions on men in the last phase of data collection. My sincere thanks go to Shannon for her early mentoring in qualitative global health research and weekly discussions on the findings from Eswatini and Kate for co-coding, discussing findings and many fruitful exchanges. Further thanks go to Prof. Miriam Taegtmeyer and Dr. Yussif Alhassan for discussing the Malawi qualitative findings, co-coding and the productive collaboration on the stigma article. I would further like to express my sincere thanks to Michaela Theilmann for her mentoring in quantitative research, for assisting me in cleaning the data and providing support and advice for problems encountered in Stata. And last but not least I would like to thank all the wonderful colleagues at the Heidelberg Institute of Global Health, my fellow doctoral students and doctoral groups, meeting rounds from mixed methods, qualitative research to the Bergheimer group for inspiration, fruitful exchanges, new learnings and insights, the sharing of skills and problems encountered, and perhaps most importantly, for friendships.

EIDESSTATTLICHE VERSICHERUNG

1. Bei der eingereichten Dissertation zu dem Thema

Examining men's experiences of ART-Based HIV-Treatment and Prevention in Malawi and Eswatini with a focus on enablers, barriers and opportunities – a Mixed Methods Study highlighting the intersectionality of stigma, masculinity and the life-course

handelt es sich um meine eigenständig erbrachte Leistung.

2. Ich habe nur die angegebenen Quellen und Hilfsmittel benutzt und mich keiner unzulässigen Hilfe Dritter bedient. Insbesondere habe ich wörtlich oder sinngemäß aus anderen Werken übernommene Inhalte als solche kenntlich gemacht.

3. Die Arbeit oder Teile davon habe ich bislang nicht an einer Hochschule des In- oder Auslands als Bestandteil einer Prüfungs- oder Qualifikationsleistung vorgelegt.

4. Die Richtigkeit der vorstehenden Erklärungen bestätige ich.

5. Die Bedeutung der eidesstattlichen Versicherung und die strafrechtlichen Folgen einer unrichtigen oder unvollständigen eidesstattlichen Versicherung sind mir bekannt. Ich versichere an Eides statt, dass ich nach bestem Wissen die reine Wahrheit erklärt und nichts verschwiegen habe.

Stuttgart, den 29.3.2022

Ort und Datum Unterschrift