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## **HIV related knowledge, Risk perception and Demand forecasting for VCT/PMTCT in women living in Rural Burkina Faso**

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The pandemic of human immunodeficiency virus (HIV) infection is rapidly becoming primarily a disease of tropical countries as the world enters the third decade of the HIV epidemic. Sub-Saharan Africa alone currently accounts for 25 to 28 million, approximately 70% of the HIV infection worldwide. It is estimated that in the year 2003 alone, 700,000 children (under 15 years) have acquired HIV infection and over 90 % of all HIV-infected children acquire HIV via mother-to-child transmission (MTCT). Specific interventions carried out in developing countries include: information, education and counseling for safer sexual behavior, STI control, VCT, PMTCT and PMTCT plus. The simplest short course regimen found to be effective against MTCT was Nevirapine. However, there is evidence of substantial variation in the public acceptance of the services in different settings. In no setting is there evidence of significant effects to explore public perceptions, concerns and preferences for VCT or PMTCT prior to implementation.

The **main goal** of the study was to identify public demand for PMTCT services, and to understand potential social and cultural obstacles to the acceptance and utilization of the planned VCT and PMTCT interventions. The specific **objectives** of the study were to, a) identify HIV related knowledge in young rural women, b) identify their own and their partner's HIV risk perception, c) identify the factors associated with personal and partner's HIV risk perception, d) identify the perceived willingness to go for HIV testing, and i) identify the perceived willingness to participate in a PMTCT program.

The study was conducted in 2002 in Nouna, Burkina Faso. It was a randomly selected community based study among 300 women (15-29 years) to explore perception of risk and public demand for VCT and PMTCT prior to implementation of a PMTCT program in Nouna. The sample was drawn from women taking part in the demographic surveillance system (DSS) overseen by the Centre de Recherche en Sante de Nouna (CRSN), which includes 60,000 inhabitants of Nouna

District. A sector-weighted sample was randomly drawn from a census list of 3,026 (15-29 year old) women residing in one of the seven sectors of Nouna town. For each randomly selected woman three same-sector replacements were randomly selected and approached if the original woman was absent or refused to participate.

The results based on both univariate and multivariate statistical analyses are as follows:

Early marriage was common, as 50% of the women had been married by the age of 19, and 90% were married by the age of 24. Nouna town includes a mix of ethnic groups dominated by the Marka, Samo and Mossi. Health status is poor, with 22% of all women who had delivered having lost at least one child. In the event of a health problem, a majority (84.3%) reported that they attend the Nouna District Hospital for health services. Among 168 women with a delivery history, 165 (98%) had attended Nouna District Hospital for maternity care.

The vast majority (91%) of women had heard of HIV/AIDS, and 76.7% indicated that the virus can be transmitted by sexual intercourse. Very few women had incorrect knowledge: only 6 women (2%) stated that HIV can be transmitted through food or insect bites. However, only 46% mentioned condoms as a means of preventing HIV transmission. Regarding mother-to-child transmission, 77% knew that an infant can become infected from an HIV positive mother, but only 62% knew any means to avoid infecting the infant.

Eleven percent (n=30) of women in this community considered themselves at high risk for getting HIV/AIDS, plus an additional 9% (n=24) regarded themselves at medium risk. Only 19% (n=52) of women regarded themselves at no risk of HIV. Among women with partners (n=215), when asked about whether or not they perceived their partners to be at risk of HIV, nearly half (44%) responded that they do not know about their partner's risk. Among the remaining 115 women who did respond (Table 8), there was a high overall correlation between women's perception of their own personal risk and their partners' risk (Spearman correlation coefficient of  $r = 0.79$ ,  $p \leq 0.0001$ ).

Based on the multivariate logistical regression analysis of factors associated with a perceived high risk of getting HIV/AIDS, the significant risk factors were being from the Bwaba ethnic group (OR = 4.29,  $p \leq 0.001$ ), and knowing that HIV infection can be asymptomatic (OR= 16.9,  $p \leq 0.001$ ).

Sixty nine percent (69%) of women reported willingness to use HIV testing, and the remaining 31% indicated that even if a woman feels at risk of HIV/AIDS, she will not go for HIV testing. In multivariate analysis, perceived willingness of women to undergo HIV testing was significantly associated with being younger (20-29 vs. 15-19 years) (OR=0.55, 95% CI: 0.30-0.99,  $p \leq 0.05$ ) and having received HIV/AIDS information from a health worker (OR=2.4, 95% CI: 1.2-4.9,  $p \leq 0.01$ ).

Following a brief description of the planned PMTCT services (provision of short course Anti-Retroviral Therapy (ART), such as Nevirapine), the perceived willingness to participate in a PMTCT program was almost universal (92%). Sixty-two percent of women reported that 'If a woman knows that she is HIV positive, she could share that with her partner', while 55% and 27% mentioned family and friends, respectively.

This is the first community-based study from rural West Africa to report an association between ethnicity, risk perception, and willingness to test for VCT among women. With regard to ethnicity and self-reported risk for HIV, the Peulh, Samo, and Mossi were at the low scale of perceived risk, while the Marka and Bwaba were more likely to classify themselves at *high risk*. The difference between perceived willingness to participate in VCT and PMTCT underscores that a perceived benefit from participation is a crucial factor for acceptance of HIV testing

In sum, this young female rural population possesses a high level of knowledge about HIV/AIDS, and 20% consider themselves to be at *high or medium risk* of HIV infection. There is evidence of ethnic group disparity in perceived risk, and a crucial gap in knowledge about the asymptomatic nature of HIV, which impacts perceived risk. Addressing the knowledge gap and addressing ethnic-group differences in risk perception may improve acceptability of VCT & PMTCT.