# Beyond Refugee Adverse Childhood Experience (BRACE): Development of an Adverse Childhood Experience (ACE) questionnaire for refugee children

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Conflict, forced migration and searching for safety in a foreign land are all experiences common to refugee children. They experience potentially traumatic events that are distinct from the general population, yet current adverse childhood experience studies do not cover these events. To address this gap, this dissertation aimed to develop the Beyond Refugee Adverse Childhood Experience (BRACE) questionnaire to comprehensively assess both adverse and protective experiences of refugee children during all stages of migration and all levels of the social-ecological model.

This was accomplished through three phases: The first involved a systematic review aimed at identifying current adverse childhood experience questionnaires to determine their suitability for assessing refugee children's adversities. The second aimed to identify potentially traumatising and protective experiences subjectively perceived as influencing refugee children's wellbeing. The final phase involved developing a core set of adversity and protective questions with items specific to the refugee child based on the information from the two earlier phases; then conduct a pilot test with the developed questionnaire.

A systematic search was conducted across five databases for articles published between 01/2010 and 03/2022. Included studies used an ACE questionnaire that recognised multiple adversities in healthy children and were published in English. A total of 103 ACE questionnaires were identified from 506 studies. Only 14 of the 103 questionnaires addressed a refugee-specific adversity. Their ability to capture refugee children's experiences was limited as available questionnaires used a maximum of three items to assess refugee-specific adversities, covering only a fraction of potential adversities relevant to refugee children.

For the second phase, semi-structured interviews with 47 refugee parents and 11 children (aged 8-17) were conducted between 11/2018 and 01/2020. Interviews were recorded, transcribed, coded, and analysed using thematic analysis. Unveiled experiences revolved around eight major themes including six themes revolving around potentially traumatising experiences: disruption, rejection, isolation, violence, impediments and affliction; and two themes revolving around possible protective experiences: security/stability and connections. This qualitative phase highlighted several important aspects to consider when examining refugee children's experiences, such as family dispersion, displacement, strict immigration, and national policies.

Categories and associated adverse/protective experiences derived from the qualitative interviews built the foundation of the BRACE questionnaire. Where appropriate, items from validated questionnaires identified in the systematic review were used to assess exposure. Nineteen items were developed for this project, and 33 items were adapted from existing questionnaires. The item set was finalised after translation into Arabic and cognitive pretesting (n=12) resulting in the initial 51 item Arabic parent-report version. This consisted of 51 items divided amongst 25 categories grouped into conventional, expanded and refugee specific adversities and protective experiences, covering 44 adversities and 7 protective experiences.

Initial pilot testing of the BRACE questionnaire was conducted online between 09/2020 and 02/2022, involving an analytical sample of 152 participants. When assessing the full set of adversity questions (44 items), respondents' reported adversities ranged from a minimum of 2 to a maximum of 32 reported experiences (n=91 with a full data set), with a mean of 11 (SD= 6). Notably, the data also revealed that 55% of participants reported no exposure to the conventional ACEs while, on the other hand, refugee ACEs were reported frequently. Regression analysis showed that refugee ACE scores positively correlate with the scores from the Strength and Difficulties Questionnaire and can improve the predictive

power of conventional adversity measures. Overall, the data indicated that including refugee ACE items is crucial for addressing the adversities faced by these vulnerable children.

The research presented in this dissertation has helped to highlight a dimension that has been under-represented in previous adverse childhood experience work. It has built and tested a new questionnaire expanding the adversity categories to include those faced by refugee children. As the refugee population continues to grow, the BRACE questionnaire is of high relevance. It can be used to identify the children most at risk of developing negative outcomes, contribute to the understanding of potential pathways of adverse experiences influencing health as well as the interplay between adverse and protective experiences. It can also raise awareness of refugee-specific ACEs and become a starting point to design evidence-based intervention and prevention programs.