

The Malawi Longitudinal Study of Families and Health

Newsletter 2017-1: Adverse Childhood Experiences and Adolescent HIV Risk



MLSFH Project Description

The *Malawi Longitudinal Study of Families and Health (MLSFH)* is one of very few long-standing publicly-available longitudinal cohort studies in sub-Saharan Africa (SSA). With data collection rounds for up to 4,000 individuals in 1998, 2001, 2004, 2006, 2008, 2010, 2012+13, and forthcoming until 2020, the MLSFH documents more than two decades of demographic, socioeconomic and health conditions in one of the world's poorest countries. The MLSFH public-use data can be requested on the project website <http://www.malawi.pop.upenn.edu>. A *MLSFH Cohort Profile* in the *International Journal of Epidemiology* provides detailed project information, and a review of MLSFH research and data quality. Recent funding by U.S. National Institutes of Health will expand the MLSFH to investigate the consequences, mediators, and moderators of childhood adversity on adolescent HIV risk, with the aim to explain why some adolescents engage in high risk behaviors and contract HIV, while others do not, and to identify modifiable targets for intervention.

Adverse childhood experiences and adolescent HIV risk

¶ Adolescents aged 15-19 account for 13% of new HIV infections, with the bulk occurring in sub-Saharan Africa. To intervene effectively, we need to know: Why do some adolescents engage in high-risk behaviors and contract HIV, while others do not?

¶ To answer this question, researchers typically look at the social and structural context during adolescence, concurrent with risk behavior. Prevention efforts also largely target adolescents. This may be too late. HIV risk trajectories likely have their origins in childhood, and thus require earlier intervention. This means that we need to better understand the more distal social determinants operating during childhood—the root causes of

later health trajectories. Some social determinants are harmful (e.g., child abuse), others protective (e.g., family support). They may operate at the level of individuals, families, and communities. Many influence downstream social determinants, such as education, that also play a role in HIV risk.

¶ This MLSFH project on “*Adverse childhood experiences*” (ACEs) focuses on ACEs because they are potentially important and modifiable social determinants of adolescent HIV risk. Childhood adversity captures a broad array of events that are stressful or traumatic for children. For example, it may include abuse; bullying by peers; witnessing domestic violence; parental HIV infection, morbidity or death; and experiencing poverty or collective violence. Such adversity may be embodied through chronic stress responses, particularly during sensitive developmental periods.

Examples of childhood adversity

Ecological Level	Risk Factors
Individual	<ul style="list-style-type: none"> • emotional, physical & sexual abuse
Family	<ul style="list-style-type: none"> • parental HIV infection • household member mental/physical illness • poverty
Peer	<ul style="list-style-type: none"> • bullying by peers • violent encounters
Community	<ul style="list-style-type: none"> • community violence • natural disasters

¶ The resulting social, cognitive and emotional impairments may predispose adolescents towards more risky HIV trajectories. Exposure to adversity (e.g., loss of a parent, exposure to conflict) may lead directly to other social risks (e.g., school drop-out, poverty), which in turn impose barriers to health (see Figure 1). Importantly, many of these adversities are preventable, and thus could be targeted by early intervention.

¶ The proposed multi-disciplinary project will expand scientific knowledge by creating an adolescent cohort that has been traced since birth. It will do so by building on exceptional existing data provided by the Malawi Longitudinal Study of Families and Health (MLSFH). Since 1998, the

MLSFH has collected rich multi-level information from parents, including information on their children, on adversity, and on family and social context. This study will collect two new rounds of prospective data directly from the MLSFH children as they reach adolescence; in doing so, we will establish a cohort that is currently entering a critical age-range for HIV risks as they transition to adulthood. The resulting data will permit us to describe adverse childhood experiences, as well as the contexts in which these occurred, for a sample of rural adolescents growing up amidst the dual epidemics of HIV and poverty - circumstances all too common across sub-Saharan African countries. By applying sophisticated statistical methods, we will be able to examine the causal role of early and ongoing adversities on the emergence of HIV risks between the two new survey waves (age 11–15 to 15–18); we will also be able to test potential mediators and moderators in the causal pathway.

¶ *Aim 1: To describe the prevalence, co-occurrence and re-occurrence of childhood adversity among adolescents.* We will construct indicators of adversity covering infancy to adolescence and examine the prevalence and patterning of childhood adversities at each developmental stage. We will accomplish this by linking rich data captured through parental reporting (e.g. household socioeconomics, mortality) in prior MLSFH waves to new data collected from adolescents using the Adverse Childhood Experiences–International Questionnaire. This tool was recently-developed by the WHO to standardize global measurement; we will enhance its utility by 1) being the first to validate, and if necessary modify, this tool for an adolescent African population; 2) developing and testing an HIV-related module suitable for African contexts; 3) using sibling reporting on household- and individual-level adversity to improve measurement.

¶ *Aim 2: To estimate the causal impact of childhood adversity on the emergence of differentiated HIV risk trajectories during adolescence.* Adolescence is a dense period of social transitions:

these are key to the timing of behaviors that increase HIV risks. Prospective measures of childhood adversity at different stages of the child and adolescent life course will be linked to the emergence of HIV risks, operationalized by 1) poor transitions to adulthood (school drop-out, early marriage); 2) behavioral risk (early sexual initiation, inconsistent condom use, number and “riskiness” of partners); and 3) HIV and HSV2 incidence. We hypothesize that childhood adversity plays a causal role in the development of youth HIV risks.

¶ *Aim 3: To highlight potential intervention points by identifying causal mediators between childhood adversity and HIV risks.* Frequent or chronic activation of the stress response, particularly during sensitive developmental periods, results in social, emotional, and cognitive impairment. Based on existing studies from high-income countries, we hypothesize that key indicators in each domain (e.g. depression) mediate the causal pathway.

¶ *Aim 4: To identify protective factors that moderate the impact of childhood adversity on HIV risks.* Adversity does not always lead to poor outcomes. While researchers and policy makers often focus on negative repercussions, many individuals exposed to adversity have healthy transitions to adulthood and remain HIV-free. We will test potential multi-level sources of resilience (e.g., family resources, peer support, government programs) that may determine how children cope with adversity and that could be enhanced through future interventions.

HIV infection during adolescence not only has an immediate impact on health, but has profound consequences on well-being that reverberate across the adult life course. A rigorous evaluation of the consequences, mediators, and moderators of childhood adversity on adolescent HIV risks will greatly enhance current HIV prevention strategies in Malawi and beyond by explaining why some adolescents engage in high-risk behaviors and contract HIV while others do not, and by identifying modifiable targets for intervention.

MLSFH Project Website

<http://www.malawi.pop.upenn.edu>

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Contact Information

The MLSFH is conducted by the [Population Studies Center](#) at the University of Pennsylvania, in collaboration with the [College of Medicine](#) at the University of Malawi and [Invest in Knowledge in Zomba, Malawi](#). Key contact persons for the MLSFH project on Adverse Childhood Experiences are:

[Rachel Kidman](#), Stony Brook University, rachel.kidman@stonybrookmedicine.edu.

[Hans-Peter Kohler](#), University of Pennsylvania, hpkohler@pop.upenn.edu.

[James Mkandawire](#), IKI, Zomba, Malawi, james.mkandawire@investinknowledge.org.

[Victor Mwapasa](#), College of Medicine, University of Malawi, vmwapasa@medcol.mw.

Additional members of the [MLSFH Study Team](#) are listed on the MLSFH Website.