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Psychological Distress Among Orphaned Youth and Youth Reporting Sexual Exploitation in Kampala, Uganda

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Abstract

Psychological distress is a priority health issue in low- and middle-income countries; however, it is inadequately addressed among vulnerable youth living in extremely underserved communities (i.e., on the streets and in the slums) who are at a high risk of experiencing adversity. The purpose of this study was to compute the prevalence of self-reported psychological distress among youth living in the slums of Kampala, Uganda, and examine how orphan status and commercial sexual exploitation (CSE) are related to youth psychological distress. Analyses are based on a 2014 cross-sectional survey of service-seeking youth ($N = 1134$) in Kampala, Uganda. Bivariate and multivariable multinomial regression analyses were used to determine associations between orphan status, sexual exploitation, and psychological distress (defined as experiencing the following proxy variables for more complex psychopathology: hopelessness and/or worry). Among all youth participants, 83.2% ($n = 937$) reported at least one type of psychological distress; 51.3% ($n = 578$) reported experiencing both types. The reported prevalence of any type of psychological distress was highest among youth who reported experiencing sexual exploitation (91.2%), double orphans (90.0%), and single orphans (83.8%); however, a high prevalence (76.7%) of any type of distress was also found among youth who reported both parents alive. Experiencing both types of distress was associated with being a double orphan (adjusted odds ratio [AOR] = 2.92, 95% confidence interval [CI] = [1.77, 4.81]), reporting CSE (AOR = 2.71, 95% CI

Author Statement

Elizabeth Perry: Conceptualization, Methodology, Writing – Original Draft, Reviewing and Editing, Formal analysis, Visualization. **Rachel Culbreth:** Writing – Reviewing and Editing, Supervision. **Monica Swahn:** Methodology, Investigation, Funding acquisition, Writing – Reviewing and Editing, Supervision. **Rogers Kasirye:** Writing – Reviewing and Editing. **Shannon Self-Brown:** Writing – Reviewing and Editing, Supervision.

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Ethical approval: All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards. IRB approvals were obtained to conduct this study in Kampala. Additionally, this study is fully compliant with the provisions of the World Medical Association Declaration of Helsinki.

Informed Consent: Informed consent was obtained from all individual participants included in the study. All youth provided verbal informed consent for this study.

= [1.67, 4.41]), and increased age (AOR = 1.31, 95% CI = [1.20, 1.44]). Psychological distress is prevalent among all youth living in the slums of Kampala and is independently associated with being a double orphan and experiencing CSE. These findings underscore the urgent need to intervene with all youth who reside in this particular underserved community, especially those who have lost both parents, and to prevent CSE among this vulnerable, underserved population.

Keywords

adolescents; commercial sexual exploitation; high-risk youth; orphan; psychological distress; sub-Saharan Africa

Psychological distress is a priority health issue in low- and middle-income countries (LMICs), including Uganda, due to its long-term physical, social, and economic impacts (Fergusson & Woodward, 2002; Shonkoff et al., 2009). In 2012, the World Health Organization estimated that 7.4% of global disability-adjusted life years, or one lost year of “healthy” life, are caused by mental and behavioral disorders (Murray et al., 2012). Psychological distress is the state of emotional pain that includes a combination of depressive symptoms (e.g., lost interest, hopelessness) and anxiety (e.g., worry, feeling tense), and perceived stress (Ohayashi & Yamada, 2012) and can serve as a proxy to indicate the presence of various symptoms that are characteristic of more complex psychopathology described in the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (American Psychiatric Association, 2013). In LMICs, monetary and multidimensional poverty, limited human development capacity, and country age structures contribute to poor mental health outcomes among children and youth (Atilola, 2017). For example, in one study, people experiencing monetary poverty experienced rates of high psychological distress that were 50% higher than people living above the income threshold (Caron & Liu, 2010).

The current pooled prevalence estimates of overall adolescent psychopathology in sub-Saharan Africa suggest that 14.3% of children and youth experience mental health symptomatology, alluding to the high prevalence of mental health problems among this population (Cortina et al., 2012). Youth who experience psychological distress in adolescence are at an increased risk of mood disorders (i.e., major depression, anxiety disorders), substance use (i.e., nicotine dependence, alcohol abuse or dependence), suicidal attempt, and other emotional, behavioral, and psychiatric problems later in life (Fergusson & Woodward, 2002; Mathers & Loncar, 2006; Silins et al., 2018). Youth who develop depression in adolescence are also at an increased risk for educational underachievement, unemployment, and early parenthood (Fergusson & Woodward, 2002; Hale et al., 2015). Despite progress in understanding, identifying, and treating psychological distress and other more complex psychopathologies among adolescents, it is an inadequately addressed, growing public health problem in LMICs (Page & West, 2011; Patel et al., 2008; Yatham et al., 2018), where the mental health treatment gap is high (Dorsey, Gray, et al., 2020).

Psychological distress is associated with a convergence of risk factors, which can be categorized using ecological frameworks such as the Social Ecological Model (Atilola, 2017; Cortina et al., 2012). Similarly, prior research among Ghanaian orphans suggests the

utility of ecological frameworks to describe the confluence of multisystemic risks and their influence on a variety of vulnerabilities and health outcomes (Joana Salifu Yendork, 2020). At the community-level, uncontrollable stressors (Landis et al., 2007) such as lacking financial resources (Hinton et al., 2011), and perceptions of neighborhood disorder and strain (Kemp et al., 2016) are associated with psychological distress among adolescents. Research suggests that the lack of or underenforcement of child protection laws (Atilola, 2017), community violence (Lambert et al., 2010; Paxton et al., 2004), and discrimination (Stirling et al., 2015) are also associated with increased child and youth psychological distress. At the relational-level, family cohesion and peer social networks play an integral role in child and youth development and psychological well-being (McMahon et al., 2020; Nyoni et al., 2019; Sheeber et al., 1997). For instance, disturbed family environments (Blanco et al., 2014), less supportive family environments (Sheeber et al., 1997), and stressful life events (e.g., with family/parents, romantic relationships, or friends; McMahon et al., 2020; Young & Dietrich, 2015) are associated with poor psychological well-being (McMahon et al., 2020) and increases in both worry (Hinton et al., 2011) and depressive symptoms (Sheeber et al., 1997).

At the individual-level, it is well established that females are more likely than males to experience psychological distress and internalizing problems (Aptekar & Ciano-Federoff, 1999; Caron et al., 2012; Kessler et al., 2005; Needham & Hill, 2010; Rosenfield et al., 2000). Age has also been linked with psychological distress. Longitudinal research exploring psychological distress among South African orphans suggests that mental health outcomes among AIDS orphans may worsen with increased age (Cluver, Orkin, Gardner, et al., 2012). Factors related to physical health (e.g., having a chronic illness, HIV/AIDS, or STIs) can also increase the risk of psychological distress and other mental health issues (Arseniou, Arvaniti, & Samakouri, 2014; Do et al., 2014; Hidaka et al., 2008; Swahn, Palmier, Kasirye, & Yao, 2012). Lastly, food insecurity is also associated with increased psychological distress (Pengpid & Peltzer, 2020).

In addition to the many contextual factors noted above, research has documented the impact of violence exposure on youth psychological distress. Violence exposure, including child sexual abuse (Blanco et al., 2014), rape, and physical violence are associated with psychological distress and hopelessness among adolescents (Howard & Wang, 2005; James et al., 2017). Prior research among Ugandan school children have found high rates of violence perpetrated by parents, peers, and school staff, and mental health difficulties (Clarke et al., 2016; Devries et al., 2015). Among Ugandan street and slum youth, violence victimizations such as rape and physical violence were associated with psychological distress and suicidal ideation (Culbreth et al., 2018; Swahn, Palmier, et al., 2012). Findings from the nationally representative Ugandan Violence Against Children Survey (VACS) suggest that youth ages 13–17 years who reported experiencing sexual violence and emotional violence in the past 12 months reported experiencing significantly higher rates of mental distress than youth who did not experience these types of violence exposures (Ministry of Gender Labour and Social Development, 2015). Two other individual-level factors that prior research has linked to psychological distress among youth are orphan status and commercial sexual exploitation, which are the individual-level factors examined in the understudied population in the current study.

Individual-Level Factor: Orphan Status

The definition of *orphan* adopted by UNICEF and other international partner organizations is “a child under the age of 18 years who has lost one or both parents to any cause of death” (UNICEF, n.d.); a single orphan is a child who has lost one parent and a double orphan is a child who has lost both parents. One of the main causes of the orphan crisis in recent history was HIV/AIDS-related deaths (UNAIDS et al., 2004). Even with improved HIV/AIDS prevention and treatment efforts, in 2015, an estimated 52 million children in Africa had lost one or both parents to any cause of death (UNICEF, 2017). Other causes of orphan status include violence, other illnesses, and road traffic accidents (Swahn, Culbreth, Staton, & Kasirye, 2017).

The Uganda VACS found that one in five girls and boys were single or double orphans (Ministry of Gender Labour and Social Development, 2015). Orphan status makes children and youth more vulnerable to experiencing a range of adversities at the individual level (Goldberg & Short, 2016; Morantz et al., 2013) and also at various levels systems-levels of their environment (i.e., microsystem, mesosystem, exosystem, macrosystem; Joana Salifu Yendork, 2020), which have lifelong negative impacts on the well-being, mental health, and development of these youth (Chapman et al., 2004; Dube et al., 2001; Radfar et al., 2018). Orphans are more likely to come from families with low socioeconomic status (Amongin et al., 2012; Kitara et al., 2013) and are also at a high risk of experiencing poverty and food insecurity after one or both parents have died (Cluver, Gardner & Operario, 2009b). This may lead orphans to engage in child labor (Whetten et al., 2011) and commercial sexual exploitation (Cluver et al., 2011), further hindering typical development and well-being (Ibrahim et al., 2018; Radfar et al., 2018).

Orphans in sub-Saharan Africa are at a higher risk for experiencing anxiety, depression, behavior problems (Atwine et al., 2005; Cluver et al., 2007; Salifu Yendork & Somhlaba, 2014), peer relationship problems, posttraumatic stress (Cluver et al., 2007), delinquency, conduct problems, and suicidal ideation than non-orphans (Cluver et al., 2007; Culbreth et al., 2018; Nguyen et al., 2019). In a study by Atwine and colleagues (2005) using a validated depression scale, orphans in rural Uganda had significantly higher scores than non-orphans on individual items measuring hopelessness and suicidal ideation. Other findings suggest there is a differential impact of orphanhood on psychological distress, such that psychological outcomes may vary by both orphan gender and the gender of the deceased parent (Kaggwa & Hindin, 2010; Nyamukapa et al., 2010).

Individual-Level Factor: Commercial Sexual Exploitation

Commercial sexual exploitation (CSE) of children is a global human rights and public health problem (Greenbaum, 2020). U.S. law defines the commercial sexual exploitation of children as the recruitment, harboring, transportation, provision, obtaining, patronizing, or soliciting of a person for the purposes of a commercial sex act induced by force, fraud, or coercion, or in which the person induced to perform such an act has not yet attained 18 years of age (Trafficking Victims Protection Reauthorization Act, 2013). Transactional sex, the exchange of sexual acts for the purposes of economic survival, involving children under the

age of 18, is considered to be exploitative in nature and is classified as exploitation according to the Convention on the Rights of the Child and previous literature (Office of the High Commissioner UN Human Rights, 1989; Self-Brown et al., 2018; Williams et al., 2012). Current global estimates suggest that 4.9 million people were victims of CSE in 2016, and of these, more than 1 million (21%) were children under 18 years of age (International Labor Organization & Walk Free Foundation, 2017). Youth in both rural and urban communities experience commercial sexual exploitation (Cole & Sprang, 2014).

The prevalence estimates for CSE of children vary by region (United Nations Office on Drugs and Crime, 2018); however, in countries that experience high levels of multidimensional poverty, like Uganda, children and youth are at a high risk of experiencing sexual exploitation (UNICEF & Uganda Bureau of Statistics, 2019). The self-reported prevalence of CSE is high among youth living in the slums and on the streets of Kampala; 39% of youth endorsed a behaviorally-specific item measuring transactional sex (Self-Brown et al., 2018), and 13.7% endorsed an item directly assessing commercial sex work (Swahn et al., 2016). Numerous factors make children and youth more vulnerable to sexual exploitation, including a history of trauma and violence (Roe-Sepowitz, 2012; Self-Brown et al., 2018; Varma et al., 2015), neglect (Curtis et al., 2008; Roe-Sepowitz, 2012), being female (Self-Brown et al., 2018), living on the streets (Self-Brown et al., 2018), extreme poverty (Cluver et al., 2011), being a double orphan (Self-Brown et al., 2018; Swahn et al., 2016), and having a parent living with, or who has died from, AIDS (Cluver et al., 2011).

Prior research suggests an association between ever having sex and psychological distress among Tanzanian youth (Pengpid & Peltzer, 2020). The effect of this association among CSE youth may increase their risk for more complex psychopathology, including posttraumatic stress symptomatology (Cole et al., 2016; Farley et al., 1998; Hossain et al., 2010; Tsutsumi et al., 2008), complex PTSD (Hopper & Gonzalez, 2018), suicidality (Gibbs Van Brunschot & Brannigan, 2002), anxiety, depression, and other behavior problems (Cole et al., 2016; Hossain et al., 2010; Tsutsumi et al., 2008). Findings comparing CSE youth to a matched sample of sexually abused youth found that CSE youth reported more clinical problems, higher levels of trauma symptoms, increased functional impairment and risk behaviors, and greater involvement in the child welfare and juvenile justice system (Cole et al., 2016). This research suggests that the effects of CSE during adolescence and associated adverse experiences may have a particularly unique effect on youth trauma symptoms and psychological outcomes.

Purpose of Current Study

Single and double orphanhood is common in sub-Saharan Africa (UNICEF, 2016, 2019). Although there is significant literature on the psychopathology of orphans in sub-Saharan Africa, the current study explores the psychological effect of orphan status among an especially vulnerable youth population using proxy variables for psychological distress: worry and hopelessness (Mufune, 2000; Oppong Asante, Meyer-Weitz, & Petersen, 2014; Swahn et al., 2017). Furthermore, there is significant literature on the impact of CSE on youth psychopathology in high-income countries (Cole et al., 2016; Cook et al., 2018); however, there is a dearth of research on the impact of CSE on psychological outcomes such

as psychological distress among underserved urban youth living on the streets and in the slums in Uganda. This study builds on the groundbreaking work by Swahn and colleagues (2016, 2017) and Self-Brown and colleagues (2018), who analyzed the only population-based study of its size involving these vulnerable, underserved youth living in challenging these environments in urban Uganda. This study extends the previous research to explore two factors that have, to our knowledge, not previously been examined among an understudied high-risk population in urban Uganda: how orphan status and CSE victimization might be independently related to proxy variables for youth psychological distress, and how these factors might intersect among a population who are at a high risk of experiencing these outcomes. Orphan status and CSE are individual factors that can work in combination, are associated with each other, and impact psychopathology. To our knowledge, no study has explored the effect of orphan status and CSE on psychological distress among an especially vulnerable population of urban street and slum youth in Kampala, Uganda.

The purpose of this study was (a) to compute the prevalence of self-reported psychological distress among youth living in the slums of Kampala, Uganda, and (b) investigate how orphan status and CSE experiences are related to psychological distress. We hypothesized that orphan status would increase the risk of reporting psychological distress, and that youth with no parents and reporting a history of CSE would be at an increased risk of reporting psychological distress.

Method

Setting

Data were derived from the “2014 Kampala Youth Survey,” a cross-sectional survey conducted in March and April of 2014 among urban service-seeking youth ages 12–18 years living in the slums or on the streets of Kampala, Uganda. The primary purpose of the 2014 Kampala Youth Survey was to quantify and understand youth alcohol use and other high-risk behaviors and exposures, including sexual risk behaviors and HIV among youth seeking services at Uganda Youth Development Link (UYDEL) drop-in centers (UYDEL, n.d.). UYDEL is an internationally funded nongovernmental organization that provides medical services, psychosocial services, and vocational skills training to high-risk youth in Uganda. Study recruitment occurred primarily via word of mouth at six UYDEL drop-in centers (i.e., Bwaise, Kamwokya, Makindye, Nakulabye, Nateete, and Mukono) and surrounding neighborhoods in Kampala.

Data Collection

Survey methodology has been well-described in previous literature (Swahn et al., 2016). The final analytic sample ($N = 1134$) consisted of completed surveys from youth between the ages of 12 and 18 years (56% girls, 44% boys). UYDEL Social workers and peer educators with previous experience working with youth at the drop-in centers were trained on the study methodology and survey questions. According to Uganda law, youth are considered emancipated if they “cater for their own livelihood” (Uganda National Council for Science and Technology [UNCST], 2014, p. 19). Therefore, according to the Uganda National

Council of Science and Technology's, *Guidelines for Research Involving Humans as Research Participants*, the UNCST and the IRB from the sponsoring institution determined that the emancipated youth in this study could give consent to participate in research without parental consent. Youth who were willing to participate in the survey read or were read the consent form and provided verbal consent to participate in the study. The inclusion criteria for this study included youth between the ages of 12 and 18 who were present on the day of the field visit; there were no exclusion criteria. The youth were given a small snack for participating in the study. Institutional Review Board (IRB) approvals were obtained from Georgia State University and the Uganda National Council for Science and Technology to conduct this study in Kampala.

The 2014 Kampala Youth Survey was created using measures from previously validated survey instruments used in the United States and globally to assess alcohol use, violence perpetration, violence victimization, the prevalence of alcohol marketing, sexual behaviors, and mental health. Survey participants were asked about their attitudes and beliefs about sex and alcohol, knowledge of HIV/STIs, and demographic information. Survey items were adapted from instruments including the U.S.-based Youth Risk Behavior Survey (Eaton et al., 2012), Global School-based Student Health Survey (GSHS; World Health Organization, 2013), Kampala Youth Survey 2011 (Swahn, Gressard, et al., 2012; Swahn, Palmier, et al., 2012), Monitoring Alcohol Marketing Practices in Africa (MAMPA) 2012 questionnaire (de Bruijn, 2011), Alcohol Use Disorders Identification Test (AUDIT) Questionnaire (Conigrave et al., 1995), "Cut-Down, Annoyed, Guilty, and Eye-Opener" (CAGE) Questionnaire (National Institute on Alcohol Abuse and Alcoholism, n.d.), iMPPACS (Romer et al., 2009), AIDS Indicator Survey (Ministry of Health Uganda & USAID, 2011), and the Demographic Health Survey (USAID, n.d.).

Measures

The primary outcome variable, psychological distress, was created using a composite score consisting of two variables measuring general worry and general hopelessness, used in the current study to stand proxy to more complex psychopathology. Worry was assessed using the question, "In the past month, how often have you been so worried about something that you could not sleep at night?" Youth could answer *never*, *sometimes*, or *often*. Next, a binary variable for worry was made by collapsing the *sometimes* and *always* response options to create the dichotomous response options *yes* or *no*. Creating a binary variable allowed for a more direct comparison to the item measuring hopelessness. Hopelessness was assessed using the question, "In the past year, did you ever feel so sad or hopeless almost every day for two weeks or more in a row that you stopped doing your usual activities?" Youth could respond, *yes* or *no*. A psychological distress variable was created by combining the binary worry and hopelessness variables. The responses for psychological distress were coded into four levels, *no psychological distress*, *worry only*, *hopelessness only*, and *worry/hopelessness co-occurrence*.

Predictor variables included orphan status and experiences of sexual exploitation. Orphan status was assessed using the question, "Are one or both of your parents alive?" Youth could answer *both parents alive*, *one parent living*, or *both parents dead*. Sexual exploitation was

defined and explored in previous literature (Self-Brown et al., 2018) and was assessed using the behavior-based question, “Have you ever gotten money, food, or other things for having (in exchange for) sexual intercourse with someone?” Youth could answer *yes* or *no*. Behaviorally specific questions are useful when assessing sensitive topics (Fricker et al., 2003; Self-Brown et al., 2018). Sociodemographic variables included sex, as a biological variable, and age.

Data Analysis

Descriptive statistics among youth were computed for predictor and sociodemographic variables. A multinomial logistic regression analysis was used to determine the bivariate and multivariable associations between psychological distress and orphan status and sexual exploitation. All model assumptions were verified. All statistical analyses were conducted using IBM SPSS 25 statistical software (IBM Corp., 2017).

Results

Descriptive Statistics

Among youth participants with complete data ($n = 1126$, $M^{age} = 16.14$ years), 83.2% of youth ($n = 937$) reported some type of psychological distress (See Table 1). Specifically, 51.3% ($n = 578$) reported experiencing worry/hopelessness co-occurrence, 25.4% ($n = 286$) reported experiencing worry only, 6.5% ($n = 73$) reported experiencing hopelessness only, and 16.8% ($n = 189$) reported experiencing no psychological distress. Youth reported a high overall prevalence of worry (76.7%, $n = 864$) and a high overall prevalence of hopelessness (57.8%, $n = 651$).

Among female participants ($n = 633$), 54.5% reported experiencing worry/hopelessness co-occurrence compared to 47.3% among males. Among youth who reported experiencing worry/hopelessness co-occurrence, more females reported experiencing the co-occurrence (59.7%, $n = 345$) than males (40.3%, $n = 233$).

More than half of the youth (59.6%, $n = 671$) reported that they were either a single (37.4%) or double (22.2%) orphan. Among youth indicating they were double orphans ($n = 250$), 90.0% reported experiencing at least one type of psychological distress: 64.8% reported experiencing worry/hopelessness co-occurrence, 21.2% reported worry only, and 4.0% reported hopelessness only. Among youth that indicated they were single orphans ($n = 421$), 83.8% reported experiencing at least one type of psychological distress: 50.1% reported experiencing worry/hopelessness co-occurrence, 26.4% reported experiencing worry only, and 7.4% reported experiencing hopelessness only. Interestingly, over three-quarters (76.7%) of the sample of youth with both parents alive reported experiencing at least one type of psychological distress: 45.1% reported worry/hopelessness co-occurrence, 24.6% reported worry only, and 7.0% reported hopelessness only. The high prevalence of psychological distress among each level of the orphan status variable indicates that this vulnerable youth population experiences many stressors, which appears to be further exacerbated by experiencing the death of one or both parents.

Overall, 24.3% ($n = 274$) of youth reported experiencing sexual exploitation. More females reported experiencing sexual exploitation (19.3%) than males (5.1%). Among youth who reported experiencing sexual exploitation, 91.2% ($n = 250$) reported experiencing at least one type of psychological distress and 71.9% ($n = 197$) reported experiencing worry/hopelessness co-occurrence.

Multinomial Regression Analyses

The results from the bivariate and multivariable multinomial regression analyses are presented in Table 2. The overall model, including orphan status, reporting a history of sexual exploitation, sex, and age was significantly associated with psychological distress ($\chi^2 = 123.41$, $df = 15$, $p < 0.0001$).

Bivariate Analyses

Compared to youth with both parents alive, double orphaned youth had a 3.04 (95% CI [1.87, 4.93]) greater odds of reporting worry/hopelessness co-occurrence compared to those reporting no psychological distress. Additionally, compared to youth with both parents alive, single orphans had a 1.45 (95% CI [1.008, 2.10]) greater odds of reporting worry/hopelessness co-occurrence compared to those reporting no psychological distress. Youth who reported experiencing sexual exploitation were at a 3.56 (95% CI [2.24, 5.64]) greater odds of reporting worry/hopelessness co-occurrence compared to no psychological distress.

Each additional year of age corresponded to a 1.37 (95% CI [1.25, 1.50]) greater odds of youth report of worry/hopelessness co-occurrence compared to youth reporting no psychological distress. Furthermore, each additional year of age corresponded to a 1.18 (95% CI [1.02, 1.36]) greater odds of reporting hopelessness only among youth compared to those that reported no psychological distress. With regard to reporting worry only, each additional year of age corresponded to 1.18 (95% CI [1.07, 1.31]) greater odds of reporting worry only among youth compared to youth that reported no psychological distress.

Multivariable Analysis

After adjusting for sex, age, and CSE, compared to youth with both parents alive, double orphans had a 2.92 greater odds (95% CI [1.77, 4.81]) of reporting worry/hopelessness co-occurrence compared to no psychological distress. CSE was associated with greater odds of reporting worry/hopelessness co-occurrence (AOR 2.71, 95% CI [1.67, 4.41]) compared to reporting no psychological distress.

Each additional year of age corresponded to a 1.31 greater odds (95% CI [1.20, 1.44]) of youth reporting worry/hopelessness co-occurrence after adjusting for orphan status, sexual exploitation, and sex, compared to youth that reported no psychological distress. After adjusting for orphan status, sexual exploitation, and age, each additional year of age corresponded to a 1.17 greater odds (95% CI [1.01, 1.35]) of reporting hopelessness only among youth compared to those that report no psychological distress. Finally, each additional year of age corresponded to a 1.18 (95% CI [1.07, 1.31]) greater odds of youth report of worry only compared to youth that reported no psychological distress after

adjusting for the other variables in the model. Lastly, psychological distress of any type was not associated with sex in either the bivariate or multivariable analyses.

Discussion

Psychological distress is a well-established public health problem (Murray et al., 2012). The purpose of this study was to (a) compute the prevalence of self-reported psychological distress among youth living in the slums of Kampala, Uganda and (b) investigate how orphan status and CSE are related to youth psychological distress. This study builds on the work by Swahn and colleagues (2016, 2017), which found high rates of orphaning (61% and 76% of the samples, respectively), and Self-Brown and colleagues (2018), which found high rates of sexual exploitation (39% of the sample), as well as an association between orphan status, transactional sex, and other adverse experiences. The current research expands the prior work by studying the psychological outcomes of two of these prevalent individual-level adverse experiences: orphan status and sexual exploitation. Hypotheses were partially supported.

In terms of psychological distress, results demonstrate that youth ages 12 to 18 years living in the slums of Kampala experience an overall high prevalence. Youth who indicated they were double orphans (90.0%), single orphans (83.8%), and youth who reported experiencing sexual exploitation (91.2%) experienced high rates of psychological distress. However, high levels of one or both types of psychological distress were also found in youth with both parents alive, which may be explained by the various stressors that are frequent experiences among youth living in the slums or on the streets, such as high HIV/STI rates (Culbreth et al., 2019; Swahn et al., 2016), parental neglect and unparented environments (Swahn, Gressard, et al., 2012), homelessness (Swahn et al., 2018), poor physical infrastructure including poor sanitation and a lack of running water (Kamau & Njiru, 2018; Kwiringira et al., 2014), food insecurity (Nantale et al., 2017), drug or substance use (Swahn et al., 2018), and chronic or severe violence (Swahn, Gressard, et al., 2012).

The Uganda VACS found that the prevalence of mental distress among *violence-exposed* youth in Uganda ranged from 48.8%–53.9% (Ministry of Gender Labour and Social Development, 2015). In contrast, 83.2% and 51.3% of participants in the current study indicated they experienced at least one type or both types of psychological distress, respectively, which is 2.5–29.3 percentage points higher than the nationally representative sample (Ministry of Gender Labour and Social Development, 2015). These differences were even higher among orphans and CSE youth. Further, the reported prevalence of experiencing at least one type of distress in the current study is 2.53 times higher than the psychological distress reported among low-income youth from a high-income country (Caron & Liu, 2010). A meta-analysis that calculated the total weighted average from ten studies measuring the prevalence of child and youth mental health problems in six countries in sub-Saharan Africa suggests 14.3% of youth were identified as having general psychological difficulties (Cortina et al., 2012), which is 68.9 and 37.0 percentage points lower than the current findings, respectively.

The high prevalence of psychological distress found in the current study compared to previous literature from both high and LMICs (Caron & Liu, 2010; Cortina et al., 2012; Ministry of Gender Labour and Social Development, 2015) suggests that vulnerable youth living in underserved communities (i.e., living on the streets and in the slums) in LMICs may be at an increased risk for experiencing psychological distress and may have different risk factors compared to youth living in less deleterious conditions. These findings corroborate prior literature (Doku et al., 2019) and underscore the urgent need to increase the coordinated dissemination of public health interventions to improve physical and mental health outcomes for these underserved youth living in challenging conditions in LMICs.

With regard to orphan status and CSE, partially consistent with hypotheses, being a double orphan and reporting CSE experiences were associated with psychological distress; however, associations were only significant for youth reporting worry/hopeless co-occurrence. The associations between orphanhood and psychological distress has been well documented in the literature (Doku et al., 2019). However, this is the first study to our knowledge to extend previous research to a new country and population of highly vulnerable, underserved youth living in the slums and on the streets in Kampala, Uganda (Atwine et al., 2005; Cluver et al., 2007; Cluver, Orkin, Gardner, et al., 2012). Losing both parents during childhood makes children and youth more vulnerable to other adversities, including monetary and multidimensional poverty (e.g., lack of nurturing and support from caregivers, lack of food or shelter) and future violence victimization (Goldberg & Short, 2016; Kidman & Palermo, 2016; Swahn, Palmier, et al., 2012), which are factors that may further explain the causal pathways of this association. Another important factor to consider is how the cause of parent death may impact a child or youth and the subsequent adversity that they may experience. If a parent dies from AIDS or AIDS complications, or another stigmatized illness, the child or youth may have experienced stressors (e.g., stigma, contracting opportunistic infections) while the parent was alive and after parent death that orphans of other causes may not necessarily experience (Centers for Disease Control and Prevention, 2009; Cluver & Gardner, 2007; Denis-Ramirez et al., 2017; Goldberg & Short, 2016; Peltzer et al., 2012).

Importantly, an association between reporting being a single orphan and psychological distress of any type did not emerge. Although losing a parent is considered an Adverse Childhood Experience (ACE), a category of experiences linked to long-term poor health outcomes (Brown et al., 2010; Chapman et al., 2004; Dong, Dube, Felitti, Giles, & Anda, 2003; Dong et al., 2004), it is likely not as significant as losing both parents. Research on youth resilience suggests that having at least one stable, caring, and supportive relationship with an adult may serve as a protective factor, fostering youth resilience and other positive outcomes in the face of adversity (Laursen & Birmingham, 2003; National Scientific Council on the Developing Child, 2015). More research is needed to understand and tease apart the impact of single and double orphaning and the reason for orphaning among vulnerable Ugandan youth living in urban slums.

In terms of CSE and psychological distress, reporting CSE was associated with worry/hopelessness co-occurrence and is consistent with prior research documenting the association between CSE and psychological distress (i.e., posttraumatic stress symptomatology, depression, anxiety, complex PTSD, and suicidality; Cole et al., 2016;

Farley et al., 1998; Gibbs Van Brunschot & Brannigan, 2002; Hopper & Gonzalez, 2018; Hossain et al., 2010; Tsutsumi et al., 2008). Prior research suggests a high prevalence of CSE among this population, and also underscores the impact of a history of adverse experiences (i.e., living on the streets, being an orphan, experiencing rape and physical dating violence) in their role as risk-factors for CSE (Self-Brown et al., 2018; Swahn et al., 2016). For example, youth who are orphans may experience homelessness, predisposing them to experience CSE to provide necessities including food, shelter, and clothing for themselves or the younger siblings in their care (Cluver et al., 2011). Future research should explore how transactional sex and the reason for transactional sex impacts psychopathology and other health outcomes among this population. This information could inform needed evidence-based interventions and development efforts to reduce the need to engage in transactional sex and other risk-behaviors, which may, in turn, improve physical and mental health outcomes.

Orphan status and CSE experiences had independent associations with worry/hopelessness co-occurrence in the current study. Specifically, after adjusting for orphan status, CSE was still associated with psychological distress; conversely, after adjusting for CSE, orphan status was still associated with psychological distress. Prior research suggests that individual adverse childhood experiences may have unique effects on psychological distress (Chang et al., 2019; Cole et al., 2016). For example, in one study, youth who had CSE experiences had significantly higher overall posttraumatic stress disorder scores compared to youth who experienced other types of sexual violence (Cole et al., 2016). Furthermore, prior research suggests both an interrelationship amongst ACEs and a clustering of risk (Gonçalves Soares et al., 2016), and a dose-response effect between the number of ACEs and subsequent psychological distress (Chang et al., 2019). Future research should explore how type, number, and timing of adverse events impact psychopathology among this population to better inform the dissemination efforts of evidence-based interventions to best serve the unique psychological needs of these youth.

Age was the only demographic factor analyzed that was associated with all three categories of psychological distress, with older youth being at greater risk for problematic outcomes before and after controlling for all the variables in the multivariable model. These findings are consistent with previous literature suggesting that as youth age increases, psychological distress increases (Cluver, Fincham, & Seedat, 2009; Cluver, Orkin, Boyes, Gardner, & Nikelo, 2012; Cluver, Orkin, Gardner, & Boyes, 2012; Sharp, Jardin, Marais, & Bolvin, 2015). For example, one longitudinal study of AIDS-orphans found that while controlling for gender and orphan type, orphan psychological distress (i.e., internalizing problems, depression, anxiety, posttraumatic stress disorder) increased with time since parental death (Cluver, Orkin, Gardner, et al., 2012). Future research is necessary to explore the longitudinal impact of orphan status and other adverse childhood experiences on psychological distress and other health outcomes, following youth living in underserved communities such as urban slums into adulthood. A longitudinal study would provide vital information necessary to better tailor evidence-based interventions to serve this population effectively.

Surprisingly, no relation emerged between youth sex as a biological variable and any type of psychological distress. However, descriptively, more youth who reported worry/hopelessness co-occurrence were female: 59.7% were female and 40.3% were male. Although our findings were consistent with one study on immigrants from LMICs (Thapa & Hauff, 2005), which found that women from Eastern Europe and the Middle East living in Oslo, Norway, reported significantly higher psychological distress than men in the same sample, they were inconsistent with many studies from both LMICs (Aptekar & Ciano-Federoff, 1999; Cluver et al., 2013; Culbreth et al., 2018; Nabunya & Ssewamala, 2014; Swahn, Palmier, et al., 2012) and high-income countries (Caron & Liu, 2010; Needham & Hill, 2010) which have consistently shown that females experience higher rates of psychological distress. Findings suggest that there may be unique characteristics of the youth population who reside in urban slums or on the streets, and thus, distress may be more extensive and attributable to the various life stressors that are prevalent among these youth. Future studies should examine potential factors that may impact how sex intersects with psychological distress among vulnerable youth living underserved areas of Uganda.

Limitations

Key limitations of this study result from sampling design, measurement and measurement validity, and limited sample size. Due to the cross-sectional nature of this survey, causal and temporal relationships cannot be inferred. Nonetheless, cross-sectional surveys are useful when assessing the prevalence and associations between various health and behavioral outcomes during exploratory phases of research, which can then be further tested using a more rigorous study design (Mann, 2003; Wang & Cheng, 2020). These data were also collected from a convenience sample, which limits generalizability. However, convenience samples have been found to be advantageous when collecting data from hard-to-reach populations such as urban youth living on the streets and in the slums, methods which have been effectively used in previous research to reach this population (Swahn et al., 2015; Swahn, Gressard, et al., 2012; Swahn, Palmier, et al., 2012). Further, given the self-report nature of these data, the results should be interpreted with appropriate caution.

Some of the measures from the Kampala Youth Survey 2014 were not previously validated in this specific population. Some measures were used outside of the context of their original validation and, therefore, do not guarantee valid diagnostic measurements. The items measuring worry, hopelessness, CSE, and orphan status came from existing survey instruments and were assessed using one question each. Moreover, the items creating the psychological distress composite variable referenced different time periods (i.e., one month versus one year) and responses to these items may have been influenced by response bias. Regarding psychological distress specifically, the proxy variables used to assess the psychological distress construct in this study were used to indicate the presence of select, broad symptoms of distress and do not indicate the presence of any mental health diagnosis described in the *DSM-5* (American Psychiatric Association, 2013).

Additionally, there were no survey items that measured the reason for orphaning and the duration of orphanhood. Thus, the researchers lack information about sex, cause of death, and timing of death for the deceased parent(s). We were also unable to substantiate and

ascertain whether or not participants were truly orphans or had experienced CSE, given the self-report nature of the survey. Another measurement limitation is that there were no survey items measuring whether or not a youth was living in an unparented environment at the time the survey was conducted. Thus, the researchers were not able to compute the disaggregated distress levels between the levels of the orphan status variable and youth who were living in unparented environments. There were also no survey items that measured school enrollment status; thus, we do not know the proportion of respondents who were enrolled in school, nor do we know how school attendance, or lack thereof, impacts youth psychological distress. This is an important contextual factor in Uganda, given the high prevalence of violence experienced by school children (Clarke et al., 2016).

Lastly, the models used in the current analyses do not include any type of interpersonal-level violence variables; these items would have also provided important contextual information about other pertinent factors that influence psychological distress among the study population. Although the measurement limitations of this study may impact validity, these items were not used to diagnose a mental health disorder or substantiate an adverse childhood experience, but rather to give a broad indication of whether or not the youth participant was experiencing or had experienced these constructs that may be associated with current mental health status. Future research is necessary to adapt, validate, and measure psychological distress, more complex psychopathology, and substantiate adverse childhood experiences among this population using previously validated instruments, and explore important contextual variables that may play a role in psychological outcomes among youth.

Although this is the first population-based survey among this population in Uganda, the sample may have lacked the appropriate power to detect associations between the individual hopelessness and worry outcomes and the predictor variables. Future population-based studies with adequate power are needed to address this limitation. The limitations mentioned above are worth noting and should be taken into consideration when interpreting these results and in designing future research studies with this population. However, this is the first study of this magnitude and the first study to address psychological distress among orphans and youth with CSE experiences in this hard-to-reach population in urban Uganda.

Conclusions and Future Directions

Psychological distress is prevalent among these vulnerable Ugandan youth. These findings underscore the urgent need for interventions to address and prevent psychological distress, worry, and hopelessness among all youth living in the slums of Kampala. It is also of utmost importance to be able to identify vulnerable youth who are at an increased risk for psychological distress and future adverse experiences, including orphans and youth who have experienced CSE, in order to intervene to reduce and mitigate the risk of psychological distress and subsequent negative health outcomes among this population. Reducing the psychological distress among these young Ugandans may have a positive, long-term impact on Uganda's economy, culture, and reduce the burden on the healthcare system.

Uganda Youth Development Link, the organization that currently serves these youth, provides psychosocial support services (UYDEL, n.d.); however, funding for tailored and scaled-up efforts are necessary to adequately address the scope and unique psychosocial needs of this underserved population. Furthermore, current mental health services in Uganda are limited; 8% of girls and 5% of boys from the Ugandan VACS reported receiving the support or services they needed after experiencing sexual violence (Ministry of Gender Labour and Social Development, 2015). Additionally, the only nationally-funded mental health hospital in Uganda is incredibly under-resourced. Although there have been increased efforts to improve mental healthcare in Uganda by integrating mental health services into primary care visits in some hospitals, funding for and knowledge of the availability of these services is disproportionately low (Ministry of Gender Labour and Social Development, 2015). In addition to access challenges, there is also stigma related to mental health issues even among school-aged children (Ndetei et al., 2016), creating an additional barrier to care (Molodynski et al., 2017). One specific policy-level approach used to address barriers to mental health treatment (e.g., high levels of stigma, poor mental health literacy, and weak capacity at the community-level) that has been implemented in Malawi, replicated in Tanzania, and may be a promising and sustainable evidence-based approach to addressing youth mental health problems in sub-Saharan Africa is called the Integrated Approach to Addressing the Challenge of Depression (IACD) (Kutcher et al., 2019).

Another effective and promising way to address the need for mental health services in LMICs is to implement evidence-based mental health interventions delivered by lay counselors using a task-shifted approach (Murray et al., 2015; Singla et al., 2017). Emerging research is also exploring the implementation of mental health care in Kenya using this task-shifted approach delivered by teachers and community health volunteers (Dorsey, Lucid, et al., 2020). Future research should explore these types of mental health interventions with street and slum youth and school children in Uganda.

Although the aforementioned future research efforts are needed, these alone will be inadequate to ameliorate the long-term physical, social, and economic impacts of these pressing health concerns on youth living in the slums of Kampala. Holistic and coordinated public health efforts are needed, that are anchored in cultural competency, in order to achieve sustainable public health impact to reduce health disparities and the social determinants of mental health among this population (Airhihenbuwa, 1989, 1995; Doku et al., 2019; Iwelunmor et al., 2014). Future research efforts also are needed to understand the indigenous aspects of this population that facilitate resilience, enable and nurture positive health behaviors, and recognize indigenous strengths and structures.

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Abbreviations:

CSE commercial sexual exploitation

LMICs	low- and middle-income countries
UYDEL	Uganda Youth Development Link
VACS	Violence Against Children Survey

References

- Airhihenbuwa CO (1989). Perspectives on AIDS in Africa: Strategies for prevention and control. *AIDS Education and Prevention*, 1(1), 57–69. [PubMed: 2641219]
- Airhihenbuwa CO (1995). *Health and culture: Beyond the Western paradigm*. Sage Publications.
- American Psychiatric Association (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Author.
- Amongin HC, Oonyu JC, Baguma PK, & Kitara DL (2012). Self-esteem and attitudes of girls orphaned to HIV/AIDS towards education in Kampala, Uganda. *International Journal of Tropical Disease & Health*, 2(2), 87–99.
- Aptekar L, & Ciano-Federoff LM (1999). Street children in Nairobi: Gender differences in mental health. *New Directions for Child and Adolescent Development*, 85, 35–46. 10.1002/cd.23219998505
- Arseniou S, Arvaniti A, & Samakouri M (2014). HIV infection and depression. *Psychiatry and Clinical Neurosciences*, 68(2), 96–109. 10.1111/pcn.12097 [PubMed: 24552630]
- Atilola O (2017). Child mental-health policy development in sub-Saharan Africa: Broadening the perspectives using Bronfenbrenner's ecological model. *Health Promotion International*, 32(2), 380–391. 10.1093/heapro/dau065 [PubMed: 25107920]
- Atwine B, Cantor-Graae E, & Bajunirwe F (2005). Psychological distress among AIDS orphans in rural Uganda. *Social Science & Medicine*, 61(3), 555–564. 10.1016/j.socscimed.2004.12.018 [PubMed: 15899315]
- Blanco C, Rubio J, Wall M, Wang S, Jiu CJ, Kendler KS, et al. (2014). Risk factors for anxiety disorders: Common and specific effects in a national sample. *Depression and Anxiety*, 31(9), 756–764. 10.1002/da.22247.RISK. [PubMed: 24577934]
- Brown DW, Anda RF, Felitti VJ, Edwards VJ, Malarcher AM, Croft JB, & Giles WH (2010). Adverse childhood experiences are associated with the risk of lung cancer: A prospective cohort study. *BMC Public Health*, 10(1), 20 10.1186/1471-2458-10-20 [PubMed: 20085623]
- Caron J, Fleury MJ, Perreault M, Crocker A, Tremblay J, Tousignant M, Kestens Y, Cargo M, & Daniel M (2012). Prevalence of psychological distress and mental disorders, and use of mental health services in the epidemiological catchment area of Montreal South-West. *BMC Psychiatry*, 12 10.1186/1471-244X-12-183
- Caron J, & Liu A (2010). A descriptive study of the prevalence of psychological distress and mental disorders in the Canadian population: Comparison between low-income and non-low-income populations. *Chronic Diseases in Canada*, 30(3), 84–94. [PubMed: 20609292]
- Centers for Disease Control and Prevention. (2009). Guidelines for prevention and treatment of opportunistic infections in HIV-infected adults and adolescents. *MMWR: Morbidity and Mortality Weekly Report*, 58(RR-4), 1–198. [PubMed: 19145219]
- Chang X, Jiang X, Mkandarwire T, & Shen M (2019). Associations between adverse childhood experiences and health outcomes in adults aged 18–59 years. *PLoS ONE*, 14(2), 1–11. 10.1371/journal.pone.0211850
- Chapman DP, Whitfield CL, Felitti VJ, Dube SR, Edwards VJ, & Anda RF (2004). Adverse childhood experiences and the risk of depressive disorders in adulthood. *Journal of Affective Disorders*, 82(2), 217–225. 10.1016/j.jad.2003.12.013 [PubMed: 15488250]
- Clarke K, Patalay P, Allen E, Knight L, Naker D, & Devries K (2016). Patterns and predictors of violence against children in Uganda: A latent class analysis. *BMJ Open*, 6(e010443), 1–9. 10.1136/bmjopen-2015-010443

- Cluver L, & Gardner F (2007). Risk and protective factors for psychological well-being of children orphaned by AIDS in Cape Town: A qualitative study of children and caregivers' perspectives. *AIDS Care*, 19(3), 318–325. 10.1080/09540120600986578 [PubMed: 17453564]
- Cluver L, Fincham D, & Seedat S (2009). Posttraumatic stress in AIDS-orphaned children exposed to high levels of trauma: The protective role of perceived social support. *Journal of Traumatic Stress*, 22(2), 106–112. 10.1002/jts [PubMed: 19319917]
- Cluver L, Gardner F, & Operario D (2007). Psychological distress amongst AIDS-orphaned children in urban South Africa. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, 48(8), 755–763. 10.1111/j.1469-7610.2007.01757.x
- Cluver L, Orkin M, Boyes ME, Gardner F, & Nikelo J (2012). AIDS-orphanhood and caregiver HIV/AIDS sickness status: Effects on psychological symptoms in South African youth. *Journal of Pediatric Psychology*, 37(8), 857–867. 10.1093/jpepsy/jss004 [PubMed: 22313551]
- Cluver L, Orkin M, Boyes M, Gardner F, & Meinck F (2011). Transactional sex amongst AIDS-orphaned and AIDS-affected adolescents predicted by abuse and extreme poverty. *Journal of Acquired Immune Deficiency Syndromes*, 58(3), 336–343. 10.1097/QAI.0b013e31822f0d82 [PubMed: 21857361]
- Cluver L, Orkin M, Gardner F, & Boyes ME (2012). Persisting mental health problems among AIDS-orphaned children in South Africa. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, 53(4), 363–370. 10.1111/j.1469-7610.2011.02459.x
- Cluver L, Gardner F, & Operario D (2009b). Poverty and psychological health among AIDS-orphaned children in Cape Town, South Africa. *AIDS Care*, 21(6), 732–741. 10.1080/09540120802511885. [PubMed: 19806489]
- Cluver L, Orkin M, Boyes ME, Sherr L, Makasi D, & Nikelo J (2013). Pathways from parental AIDS to child psychological, educational and sexual risk: Developing an empirically-based interactive theoretical model. *Social Science and Medicine*, 87, 185–193. 10.1016/j.socscimed.2013.03.028. [PubMed: 23631794]
- Cole J, & Sprang G (2014). Sex trafficking of minors in metropolitan, micropolitan, and rural communities. *Child Abuse and Neglect*, 40(10 2018), 113–123. 10.1016/j.chiabu.2014.07.015 [PubMed: 25151302]
- Cole J, Sprang G, Lee R, & Cohen J (2016). The trauma of commercial sexual exploitation of youth: A comparison of cse victims to sexual abuse victims in a clinical sample. *Journal of Interpersonal Violence*, 31(1), 122–146. 10.1177/0886260514555133 [PubMed: 25381275]
- Conigrave KM, Hall WD, & Saunders JB (1995). The AUDIT questionnaire: Choosing a cut-off score. *Addiction*, 90, 1349–1356. 10.1046/j.1360-0443.1995.901013496.x [PubMed: 8616463]
- Cook MC, Barnert E, Ijadi-Maghsoudi R, Ports K, & Bath E (2018). Exploring mental health and substance use treatment needs of commercially sexually exploited youth participating in a specialty juvenile court. *Behavioral Medicine*, 44(3), 242–249. 10.1080/08964289.2018.1432552. [PubMed: 29558256]
- Cortina MA, Sodha A, Fazel M, & Ramchandani PG (2012). Prevalence of child mental health problems in Sub-Saharan Africa: A systematic review. *Archives of Pediatrics and Adolescent Medicine*, 166(3), 276–281. 10.1001/archpediatrics.2011.592 [PubMed: 22393184]
- Culbreth R, Swahn MH, Salazar LF, Ametewee LA, & Kasirye R (2019). Risk factors associated with HIV, sexually transmitted infections (STI), and HIV/STI coinfection among youth living in the slums of Kampala, Uganda. *AIDS and Behavior*, 0123456789. 10.1007/s10461-019-02444-5.
- Culbreth R, Swahn M, Ndeti D, Ametewee L, & Kasirye R (2018). Suicidal ideation among youth living in the slums of Kampala, Uganda. *International Journal of Environmental Research and Public Health*, 15(298), 1–10. 10.3390/ijerph15020298
- Curtis R, Terry K, Dank M, Dombrowski K, & Khan Band (2008). Commercial sexual exploitation of children in New York City, volume one: The CSEC population in New York City: Size, characteristics, and needs. <https://www.ncjrs.gov/pdffiles1/nij/grants/225083.pdf>
- de Bruijn A (2011). Monitoring alcohol marketing in Africa: MAMPA project. World Health Organization.

- Denis-Ramirez E, Sørensen KH, & Skovdal M (2017). In the midst of a 'perfect storm': Unpacking the causes and consequences of Ebola-related stigma for children orphaned by Ebola in Sierra Leone. *Children and Youth Services Review*, 73, 445–453. 10.1016/j.childyouth.2016.11.025
- Devries KM, Knight L, Child JC, Mirembe A, Nakuti J, Jones R, Sturgess J, Allen E, Kyegombe N, Parkes J, Walakira E, Elbourne D, Watts C, & Naker D (2015). The Good School Toolkit for reducing physical violence from school staff to primary school students: a cluster-randomised controlled trial in Uganda. *The Lancet Global Health*, 3(7), e378–e386. 10.1016/S2214-109X(15)00060-1 [PubMed: 26087985]
- Do AN, Rosenberg ES, Sullivan PS, Beer L, Strine TW, Schulden JD, Fagan JL, Freedman MS, & Skarbinski J (2014). Excess burden of depression among HIV-infected persons receiving medical care in the United States: Data from the medical monitoring project and the behavioral risk factor surveillance system. *PLoS ONE*, 9(3). 10.1371/journal.pone.0092842
- Doku PN, Akohene KM, Ananga MK, & Debrah TP (2019). A systematic review of the mental health of orphans and vulnerable children within the context of HIV/AIDS in Africa. *International Journal of Psychiatry*, 4(2), 1–20.
- Dong M, Dube SR, Felitti VJ, Giles WH, & Anda RF (2003). Adverse childhood experiences and self-reported liver disease. *Archives of Internal Medicine*, 163(16), 1949. 10.1001/archinte.163.16.1949 [PubMed: 12963569]
- Dong M, Giles WH, Felitti VJ, Dube SR, Williams JE, Chapman DP, & Anda RF (2004). Insights into causal pathways for ischemic heart disease. *Circulation*, 110(13), 1761–1766. 10.1161/01.CIR.0000143074.54995.7F [PubMed: 15381652]
- Dorsey S, Gray CL, Wasonga AI, Amany C, Weiner BJ, Belden CM, Martin P, Meza RD, Weinhold AK, Soi C, Murray LK, Lucid L, Turner EL, Mildon R, & Whetten K (2020). Advancing successful implementation of task-shifted mental health care in low-resource settings (BASIC): Protocol for a stepped wedge cluster randomized trial. *BMC Psychiatry*, 20(1), 1–14. 10.1186/s12888-019-2364-4 [PubMed: 31898506]
- Dorsey S, Lucid L, Martin P, King KM, O'Donnell K, Murray LK, Wasonga AI, Itemba DK, Cohen JA, Manongi R, & Whetten K (2020). Effectiveness of task-shifted Trauma-Focused Cognitive Behavioral Therapy for children who experienced parental death and posttraumatic stress in Kenya and Tanzania: A randomized clinical trial. *JAMA Psychiatry*. 10.1001/jamapsychiatry.2019.4475
- Dube SR, Anda RF, Felitti VJ, Chapman DP, Williamson DF, & Giles WH (2001). Childhood abuse, household dysfunction, and the risk of attempted suicide throughout the lifespan: Findings from the adverse childhood experiences study. *Journal of the American Medical Association*, 286(24), 3089–3096. 10.1001/jama.286.24.3089 [PubMed: 11754674]
- Eaton DK, Kann L, Kinchen S, Shanklin S, Flint KH, Hawkins J, Harris WA, Lowry R, McManus T, Chyen D, Whittle L, Lim C, Wechsler H, & Centers for Disease Control. (2012). Youth risk behavior surveillance - United States, 2011. In *Morbidity and Mortality Weekly Report: Surveillance Summaries* (Vol. 61, Issue 4).
- Farley M, Baral I, Kiremire M, & Sezgin U (1998). Prostitution in five countries: Violence and post-traumatic stress disorder. *Feminism and Psychology*, 8(4), 405–426. 10.1177/0959353598084002
- Fergusson DM, & Woodward LJ (2002). Mental health, educational, and social role outcomes of adolescents with depression. *Archives of General Psychiatry*, 59(3), 225–231. 10.1001/archpsyc.59.3.225 [PubMed: 11879160]
- Fricker AE, Smith DW, Davis JL, & Hanson RF (2003). Effects of context and question type on endorsement of childhood sexual abuse. *Journal of Traumatic Stress*, 16(3), 265–268. 10.1023/A:1023748124626 [PubMed: 12816339]
- Gibbs Van Brunschot E, & Brannigan A (2002). Childhood maltreatment and subsequent conduct disorders - The case of female street prostitution. *International Journal of Law and Psychiatry*, 25(3), 219–234. 10.1016/S0160-2527(02)00103-6 [PubMed: 12148150]
- Goldberg RE, & Short SE (2016). What do we know about children living with HIV-infected or AIDS-ill adults in Sub-Saharan Africa? A systematic review of the literature. *AIDS Care - Psychological and Socio-Medical Aspects of AIDS/HIV*, 28, 130–141. 10.1080/09540121.2016.1176684
- Gonçalves Soares AL, Howe LD, Matijasevich A, Wehrmeister FC, Menezes AMB, & Gonçalves H (2016). Adverse childhood experiences: Prevalence and related factors in adolescents of a

- Brazilian birth cohort. *Child Abuse and Neglect*, 51, 21–30. 10.1016/j.chiabu.2015.11.017 [PubMed: 26707919]
- Greenbaum J (2020). A public health approach to global child sex trafficking. *Annual Review of Public Health*, 41, 481–497. 10.1146/annurev-publhealth-040119-094335
- Hale DR, Bevilacqua L, & Viner RM (2015). Adolescent health and adult education and employment: A systematic review. *Pediatrics*, 136(1), 128–140. 10.1542/peds.2014-2105 [PubMed: 26101362]
- Hidaka Y, Operario D, Takenaka M, Omori S, Ichikawa S, & Shirasaka T (2008). Attempted suicide and associated risk factors among youth in urban Japan. *Social Psychiatry and Psychiatric Epidemiology*, 43(9), 752–757. 10.1007/s00127-008-0352-y [PubMed: 18488128]
- Hinton DE, Nickerson A, & Bryant RA (2011). Worry, worry attacks, and PTSD among Cambodian refugees: A path analysis investigation. *Social Science and Medicine*, 72(11), 1817–1825. 10.1016/j.socscimed.2011.03.045 [PubMed: 21663803]
- Hopper EK, & Gonzalez LD (2018). A comparison of psychological symptoms in survivors of sex and labor trafficking. *Behavioral Medicine*, 44(3), 177–188. 10.1080/08964289.2018.1432551 [PubMed: 29558341]
- Hossain M, Zimmerman C, Abas M, Light M, & Watts C (2010). The relationship of trauma to mental disorders among trafficked and sexually exploited girls and women. *American Journal of Public Health*, 100(12), 2442–2449. 10.2105/AJPH.2009.173229 [PubMed: 20966379]
- Howard DE, & Wang MQ (2005). Psychosocial correlates of U.S. adolescents who report a history of forced sexual intercourse. *Journal of Adolescent Health*, 36(5), 372–379. 10.1016/j.jadohealth.2004.07.007
- IBM Corp. (2017). IBM SPSS Statistics for Windows, Version 25.0. IBM Corp.
- Ibrahim A, Abdalla SM, Jafer M, Abdelgadir J, & De Vries N (2018). Child labor and health: A systematic literature review of the impacts of child labor on child's health in low- and middle-income countries. *Journal of Public Health*, 41(1), 18–26. 10.1093/pubmed/fdy018
- International Labor Organization, & Walk Free Foundation. (2017). Global estimates of modern slavery: Forced labour and forced marriage. http://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/documents/publication/wcms_575479.pdf
- Iwelunmor J, Newsome V, & Airhihenbuwa CO (2014). Framing the impact of culture on health: A systematic review of the PEN-3 cultural model and its application in public health research and interventions. *Ethnicity and Health*, 19(1), 20–46. 10.1080/13557858.2013.857768 [PubMed: 24266638]
- James S, Reddy SP, Ellahebokus A, Sewpaul R, & Naidoo P (2017). The association between adolescent risk behaviours and feelings of sadness or hopelessness: A cross-sectional survey of South African secondary school learners. *Psychology, Health and Medicine*, 22(7), 778–789. 10.1080/13548506.2017.1300669
- Kaggwa EB, & Hindin MJ (2010). The psychological effect of orphanhood in a matured HIV epidemic: An analysis of young people in Mukono, Uganda. *Social Science and Medicine*, 70, 1002–1010. 10.1016/j.socscimed.2009.12.002 [PubMed: 20106578]
- Kamau N, & Njiru H (2018). Water, sanitation and hygiene situation in Kenya's urban slums. *Journal of Health Care for the Poor and Underserved*, 29(1), 321–336. 10.1353/hpu.2018.0022 [PubMed: 29503303]
- Kemp GN, Langer DA, & Tompson MC (2016). Childhood mental health: An ecological analysis of the effects of neighborhood characteristics. *Journal of Community Psychology*, 44(8), 962–979. 10.1002/jcop.21821 [PubMed: 27833215]
- Kessler RC, Berglund P, Demler O, Jin R, Merikangas KR, & Walters EE (2005). Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the national comorbidity survey replication. *Archives of General Psychiatry*, 62(6), 593–602. 10.1001/archpsyc.62.6.593 [PubMed: 15939837]
- Kidman R, & Palermo T (2016). The relationship between parental presence and child sexual violence: Evidence from thirteen countries in sub-Saharan Africa In *Child Abuse & Neglect* (Vol. 51, pp. 172–180). NIH Public Access 10.1016/j.chiabu.2015.10.018 [PubMed: 26631421]
- Kitara DL, Amongin HC, Oonyu JC, & Baguma PK (2013). Assertiveness and attitudes of HIV/AIDS orphaned girls towards education in Kampala (Uganda). *African Journal of Infectious Diseases*, 7(2), 36–43. 10.4314/ajid.v7i2.4 [PubMed: 28451080]

- Kutcher S, Perkins K, Gilberds H, Udedi M, Ubuguyu O, Njau T, Chapota R, & Hashish M (2019). Creating evidence-based youth mental health policy in sub-Saharan Africa: A description of the integrated approach to addressing the issue of youth depression in Malawi and Tanzania. *Frontiers in Psychiatry*, 10(542), 1–8. 10.3389/fpsy.2019.00542 [PubMed: 30723425]
- Kwiringira J, Atekyereza P, Niwagaba C, & Günther I (2014). Descending the sanitation ladder in urban Uganda: Evidence from Kampala Slums. *BMC Public Health*, 14(624), 1–10. 10.1186/1471-2458-14-624 [PubMed: 24383435]
- Lambert SF, Nylund-Gibson K, Copeland-Linder N, & Ialongo NS (2010). Patterns of community violence exposure during adolescence. *American Journal of Community Psychology*, 46, 289–302. 10.1007/s10464-010-9344-7 [PubMed: 20878229]
- Landis D, Gaylord-Harden NK, Malinowski SL, Grant KE, Carleton RA, & Ford RE (2007). Urban adolescent stress and hopelessness. *Journal of Adolescence*, 30(6), 1051–1070. 10.1016/j.adolescence.2007.02.001 [PubMed: 17467052]
- Laursen EK, & Birmingham SM (2003). Caring relationships as a protective factor for at-risk youth: An ethnographic study. *Families in Society: The Journal of Contemporary Human Services*, 84(2), 240–246. 10.1606/1044-3894.101
- Mann CJ (2003). Observational research methods. Research design II: Cohort, cross sectional, and case-control studies. *Emergency Medicine Journal*, 20, 54–60. [PubMed: 12533370]
- Mathers CD, & Loncar D (2006). Projections of global mortality and burden of disease from 2002 to 2030. *PLoS Medicine*, 3(11), 2011–2030. 10.1371/journal.pmed.0030442
- McMahon G, Creaven AM, & Gallagher S (2020). Stressful life events and adolescent wellbeing: The role of parent and peer relationships. *Stress and Health*, 36, 299–310. 10.1002/smi.2923 [PubMed: 31920010]
- Ministry of Gender Labour and Social Development. (2015). Violence against children in Uganda: Findings from a national survey, 2015. <https://www.togetherforgirls.org/wp-content/uploads/VACS-REPORT-FINAL-LORES-2-1.pdf>
- Ministry of Health Uganda, & USAID. (2011). Uganda AIDS indicator survey (AIS) 2011. <https://doi.org/AIS10>
- Molodynski A, Cusack C, & Nixon J (2017). Mental healthcare in Uganda: Desperate challenges but real opportunities. *BJPsych International*, 14(4), 98–100. 10.1192/s2056474000002129. [PubMed: 29093962]
- Morantz G, Cole D, Vreeman R, Ayaya S, Ayuku D, & Braitstein P (2013). Child abuse and neglect among orphaned children and youth living in extended families in sub-Saharan Africa: What have we learned from qualitative inquiry? *Vulnerable Children and Youth Studies*, 8(4), 338–352. 10.1038/jid.2014.371 [PubMed: 24563656]
- Mufune P (2000). Street youth in southern Africa. *International Social Science Journal*, 52, 233–243. 10.1111/1468-2451.00254
- Murray C, & et al. (2012). Disability-adjusted life years (DALYs) for 291 diseases and injuries in 21 regions, 1990-2010: A systematic analysis for the Global Burden of Disease Study 2010. *Lancet*, 380(9859), 2197–2223. [PubMed: 23245608]
- Murray LK, Skavenski S, Kane JC, Mayeya J, Dorsey S, Cohen JA, Michalopoulos LTM, Imasiku M, & Bolton PA (2015). Effectiveness of trauma-focused cognitive behavioral therapy among trauma-affected children in Lusaka, Zambia: A randomized clinical trial. *JAMA Pediatrics*, 169(8), 761–769. 10.1001/jamapediatrics.2015.0580 [PubMed: 26111066]
- Nabunya P, & Ssewamala FM (2014). The Effects of parental loss on the psychosocial wellbeing of AIDS-orphaned children living in AIDS-impacted communities: Does gender matter? *Children and Youth Services Review*, 43, 131–137. 10.1016/j.childyouth.2014.05.011 [PubMed: 25067869]
- Nantale G, Tumwesigye NM, Kiwanuka N, & Kajjura R (2017). Prevalence and factors associated with food insecurity among women aged 18–49 years in Kampala slums Uganda: A mixed methods study. *Journal of Food Security*, 5(4), 120–128. 10.12691/jfs-5-4-2.
- National Institute on Alcohol Abuse and Alcoholism. (n.d.). CAGE screening tests. Retrieved 18, 2020, from <https://pubs.niaaa.nih.gov/publications/arh28-2/78-79.htm>

- National Scientific Council on the Developing Child. (2015). Supportive relationships and active skill-building strengthen the foundations of resilience: Working paper 13. <http://www.developingchild.harvard.edu>
- Ndetei DM, Mutiso V, Maraj A, Anderson KK, Musyimi C, & McKenzie K (2016). Stigmatizing attitudes toward mental illness among primary school children in Kenya. *Social Psychiatry and Psychiatric Epidemiology*, 51, 73–80. 10.1007/s00127-015-1090-6 [PubMed: 26154242]
- Needham B, & Hill TD (2010). Do gender differences in mental health contribute to gender differences in physical health? *Social Science and Medicine*, 71(8), 1472–1479. 10.1016/j.socscimed.2010.07.016 [PubMed: 20810196]
- Nguyen KH, Padilla M, Villaveces A, Patel P, Atuchukwuc V, Onotu D, ... Kress H (2019). Coerced and forced sexual initiation and its association with negative health outcomes among youth: Results from the Nigeria, Uganda, and Zambia violence against children surveys. *Physiology & Behavior*, 176(12), 139–148. 10.1016/j.physbeh.2017.03.040.
- Nyamukapa CA, Gregson S, Wambe M, Mushore P, Lopman B, Mupambireyi Z, Nhongo K, & Jukes MCH (2010). Causes and consequences of psychological distress among orphans in eastern Zimbabwe. *AIDS Care*, 22(8), 988–996. 10.1080/09540121003615061 [PubMed: 20552465]
- Nyoni T, Nabunya P, & Ssewamala FM (2019). Perceived social support and psychological wellbeing of children orphaned by HIV/AIDS in Southwestern Uganda. *Vulnerable Children and Youth Studies*, 1–15. 10.1080/17450128.2019.1634855 [PubMed: 32952593]
- Office of the High Commissioner UN Human Rights. (1989). The convention on the rights of the child. 10.1111/j.1467-9515.1989.tb00500.x
- Ohayashi H, & Yamada S (Eds.). (2012). *Psychological distress: Symptoms, causes, and coping*. NOVA Science Publishers, Inc.
- Oppong Asante K, Meyer-Weitz A, & Petersen I (2014). Substance use and risky sexual behaviours among street connected children and youth in Accra, Ghana. *Substance Abuse Treatment, Prevention, and Policy*, 9(45), 1–9. 10.1186/1747-597X-9-45
- Page RM, & West JH (2011). Suicide ideation and psychosocial distress in sub-Saharan African youth. *American Journal of Health Behavior*, 35(2), 129–141. 10.5993/AJHB.35.2.1 [PubMed: 21204676]
- Patel V, Flisher AJ, Nikapota A, & Malhotra S (2008). Promoting child and adolescent mental health in low and middle income countries. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, 49(3), 313–334. 10.1111/j.1469-7610.2007.01824.x
- Paxton KC, Robinson WL, Shah S, & Schoeny ME (2004). Psychological distress for African-American adolescent males: Exposure to community violence and social support as factors. *Child Psychiatry and Human Development*, 34(4), 281–295. 10.1023/B:CHUD.0000020680.67029.4f [PubMed: 15039602]
- Peltzer K, Naidoo P, Matseke G, Louw J, Mchunu G, & Tutshana B (2012). Prevalence of psychological distress and associated factors in tuberculosis patients in public primary care clinics in South Africa. *BMC Psychiatry*, 12(89), 1–9. 10.1186/1471-244X-12-89 [PubMed: 22230388]
- Pengpid S, & Peltzer K (2020). Psychological distress and its associated factors among school-going adolescents in Tanzania. *Psychological Studies*, 65(2), 174–181. 10.1007/s12646-020-00550-2
- Radfar A, Asgharzadeh SAA, Quesada F, & Filip I (2018). Challenges and perspectives of child labor. *Industrial Psychiatry Journal*, 27, 17–20. 10.4103/ipj.ipj_105_14 [PubMed: 30416287]
- Roe-Sepowitz DE (2012). Juvenile entry into prostitution: The role of emotional abuse. *Violence Against Women*, 18(5), 562–579. 10.1177/1077801212453140 [PubMed: 22790558]
- Romer D, Sznitman S, Diclemente R, Salazar LF, Venable PA, Carey MP, Hennessy M, Brown LK, Valois RF, Stanton BF, Fortune T, & Juzang I (2009). Mass media as an HIV-Prevention strategy: Using culturally sensitive messages to reduce HIV-associated sexual behavior of at-risk African American youth. *American Journal of Public Health*, 99(12), 2150–2159. 10.2105/AJPH.2008.155036 [PubMed: 19833995]
- Rosenfield S, Vertefuille J, & McAlpine DD (2000). Gender stratification and mental health: An exploration of dimensions of the self. *Social Psychology Quarterly*, 63(3), 208–223.

- Salifu Yendork J, & Somhlaba NZ (2014). Stress, coping and quality of life: An exploratory study of the psychological well-being of Ghanaian orphans placed in orphanages. *Children and Youth Services Review*, 46, 28–37. 10.1016/j.childyouth.2014.07.025
- Salifu Yendork Joana. (2020). Vulnerabilities in Ghanaian orphans: Using the ecological systems theory as a lens. *New Ideas in Psychology*, 59(100811), 1–10. 10.1016/j.newideapsych.2020.100811
- Self-Brown S, Culbreth R, Wilson R, Armistead L, Kasirye R, & Swahn MH (2018). Individual and parental risk factors for sexual exploitation among high-risk youth in Uganda. *Journal of Interpersonal Violence*, 088626051877168. 10.1177/0886260518771685
- Sharp C, Jardin C, Marais L, & Bolvin M (2015). Orphanhood by AIDS-related causes and child mental health: A developmental psychopathology approach. *Journal of HIV and AIDS*, 1(3), 1–34. 10.1016/j.physbeh.2017.03.040
- Sheeber L, Hops H, Alpert A, Davis B, & Andrews J (1997). Family support and conflict: Prospective relations to adolescent depression. *Journal of Abnormal Child Psychology*, 25(4), 333–344. 10.1023/A:1025768504415 [PubMed: 9304449]
- Shonkoff JP, Boyce WT, & McEwen BS (2009). Neuroscience, molecular biology, and the childhood roots of health disparities. *JAMA*, 301(21), 2252–2259. 10.1001/jama.2009.754 [PubMed: 19491187]
- Silins E, Horwood LJ, Najman JM, Patton GC, Toumbourou JW, Olsson CA, Hutchinson DM, Degenhardt L, Fergusson D, Becker D, Boden JM, Borschmann R, Plotnikova M, Youssef GJ, Tait RJ, Clare P, Hall WD, & Mattick RP (2018). Adverse adult consequences of different alcohol use patterns in adolescence: An integrative analysis of data to age 30 years from four Australasian cohorts. *Addiction*, 113(10), 1811–1825. 10.1111/add.14263 [PubMed: 29749666]
- Singla DR, Kohrt BA, Murray LK, Anand A, Chorpita BF, & Patel V (2017). Psychological treatments for the world: Lessons from low- and middle-income countries. *Annual Review of Clinical Psychology*, 13, 149–181. 10.1146/annurev-clinpsy-032816-045217
- Stirling K, Toumbourou JW, & Rowland B (2015). Community factors influencing child and adolescent depression: A systematic review and meta-analysis. *Australian and New Zealand Journal of Psychiatry*, 49(10), 869–886. 10.1177/0004867415603129
- Swahn MH, Culbreth R, Salazar LF, Kasirye R, & Seeley J (2016). Prevalence of HIV and associated risks of sex work among youth in the slums of Kampala. *AIDS Research and Treatment*, 2016. 10.1155/2016/5360180
- Swahn MH, Culbreth R, Staton CA, & Kasirye R (2017). Psychosocial health concerns among service-seeking orphans in the slums of Kampala. *Vulnerable Children and Youth Studies*, 12(3), 258–263. 10.1080/17450128.2017.1290306 [PubMed: 30090121]
- Swahn MH, Palmier JB, Kasirye R, & Yao H (2012). Correlates of suicide ideation and attempt among youth living in the slums of Kampala. *International Journal of Environmental Research and Public Health*, 9(2), 596–609. 10.3390/ijerph9020596 [PubMed: 22470312]
- Swahn MH, Dill LJ, Palmier JB, & Kasirye R (2015). Girls and young women living in the slums of Kampala: Prevalence and correlates of physical and sexual violence victimization. *Sage Open*, Apr-Jun, 1–8. 10.1177/2158244015580853
- Swahn MH, Gressard L, Palmier JB, Kasirye R, Lynch C, & Yao H (2012). Serious violence victimization and perpetration among youth living in the slums of Kampala, Uganda. *Western Journal of Emergency Medicine*, 13(3), 253–259. 10.5811/westjem.2012.3.11772
- Swahn MH, Culbreth R, Tumwesigye NM, Topalli V, Wright E, & Kasirye R (2018). Problem drinking, alcohol-related violence, and homelessness among youth living in the slums of Kampala, Uganda. *International Journal of Environmental Research and Public Health*, 15(1061), 1–13. 10.3390/ijerph15061061.
- Thapa SB, & Hauff E (2005). Gender differences in factors associated with psychological distress among immigrants from low- and middle-income countries. Findings from the Oslo health study. *Social Psychiatry and Psychiatric Epidemiology*, 40(1), 78–84. 10.1007/s00127-005-0855-8 [PubMed: 15624079]
- Trafficking Victims Protection Reauthorization Act. (2013). <https://www.congress.gov/bill/113th-congress/house-bill/898>

- Tsutsumi A, Izutsu T, Poudyal AK, Kato S& Marui E (2008). Mental health of female survivors of human trafficking in Nepal. *Social Science and Medicine*, 66(8), 1841–1847. 10.1016/j.socscimed.2007.12.025 [PubMed: 18276050]
- Uganda National Council for Science and Technology (UNCST). (2014). National guidelines for research involving humans as research participants. <https://www.uncst.go.ug/guidelines-and-forms/>
- UNAIDS, UNICEF, & USAID. (2004). Children on the brink 2004: A joint report of the new orphan estimates and a framework for action (Issue 7). http://www.unicef.org/publications/cob_layout6-013.pdf
- UNICEF. (n.d.). Orphans. <https://www.unicef.org/media/orphans>
- UNICEF. (2016). For every child, end AIDS: Seventh stocktaking report, 2016.
- UNICEF. (2017). Orphans. UNICEF Press Center https://www.unicef.org/media/media_45279.html
- UNICEF. (2019). Towards an AIDS-Free Generation – Children and AIDS: Sixth Stocktaking Report. <http://www.avert.org/children-orphaned-hiv-and%0A-aids.htm#sthash.UT2jNnZs.dpuf>
- UNICEF, & Uganda Bureau of Statistics. (2019). The extent and nature of multidimensional child poverty and deprivation. In *Multidimensional Child Poverty and Deprivation in Uganda* (Vol. 1).
- United Nations Office on Drugs and Crime. (2018). Global report on trafficking in persons 2018. 10.18356/9805f543-en
- USAID. (n.d.). Demographic Health Survey. Retrieved 1 8, 2019, from <https://dhsprogram.com/>
- UYDEL. (n.d.). Uganda Youth Development Link | Official Website. Retrieved 1 8, 2020, from <https://www.uydel.org/>
- Varma S, Gillespie S, McCracken C, & Greenbaum VJ (2015). Characteristics of child commercial sexual exploitation and sex trafficking victims presenting for medical care in the United States. *Child Abuse and Neglect*, 44, 98–105. 10.1016/j.chiabu.2015.04.004 [PubMed: 25896617]
- Wang X, & Cheng Z (2020). Cross-sectional studies: Strengths, weaknesses, and recommendations. *Chest*, 158(1S), S65–S71. 10.1016/j.chest.2020.03.012 [PubMed: 32658654]
- Whetten R, Messer L, Ostermann J, Whetten K, Pence BW, Buckner M, Thielman N, & O’Donnell K (2011). Child work and labour among orphaned and abandoned children in five low and middle income countries. *BMC International Health and Human Rights*, 11(1), 1–10. 10.1186/1472-698X-11-1 [PubMed: 21232140]
- Williams TP, Binagwaho A, & Betancourt TS (2012). Transactional sex as a form of child sexual exploitation and abuse in Rwanda: Implications for child security and protection. *Child Abuse and Neglect*, 36(4), 354–361. 10.1016/j.chiabu.2011.11.006 [PubMed: 22483363]
- World Health Organization. (2013). 2013 Global school-based student health survey (GSHS) 2013 core questionnaire modules. https://www.who.int/ncds/surveillance/gshs/GSHS_Core_Modules_2009_English.pdf
- Yatham S, Sivathasan S, Yoon R, da Silva TL, & Ravindran AV (2018). Depression, anxiety, and post-traumatic stress disorder among youth in low and middle income countries: A review of prevalence and treatment interventions. *Asian Journal of Psychiatry*, 38(10 2017), 78–91. 10.1016/j.ajp.2017.10.029 [PubMed: 29117922]
- Young CC, & Dietrich MS (2015). Stressful life events, worry, and rumination predict depressive and anxiety symptoms in young adolescents. *Journal of Child and Adolescent Psychiatric Nursing*, 28(1), 35–42. 10.1111/jcap.12102 [PubMed: 25808272]

Highlights

- Psychological distress is common among street and slum youth in Kampala
- Psychological distress is high among Ugandan orphans and sexually exploited youth
- Double orphanhood is associated with reporting worry and hopelessness
- Sexual exploitation is associated with reporting worry and hopelessness

Table 1

Demographic characteristics and prevalence of psychological distress among youth living in the slums of Kampala

	No worry/ hopelessness (<i>n</i> = 189) 16.8%	Worry only (<i>n</i> = 286) 25.4%	Hopelessness only (<i>n</i> = 73) 6.5%	Both (<i>n</i> = 578) 51.3%	Total (<i>n</i> = 1,126)
Age, <i>M</i> (<i>SD</i>)	15.4 (1.9)	16.0 (1.8)	16.0 (1.9)	16.5 (1.6)	16.14 (1.79)
Sex, <i>n</i> (%)					
Male	83 (43.9%)	141 (49.3%)	36 (49.3%)	233 (40.3%)	493 (43.8%)
Female	106 (56.1%)	145 (50.7%)	37 (50.7%)	345 (59.7%)	633 (56.2%)
Orphan status, <i>n</i> (%)					
Both alive	96 (50.8%)	122 (42.7%)	32 (43.8%)	205 (35.5%)	455 (40.4%)
One alive	68 (36.0%)	111 (38.8%)	31 (42.5%)	211 (36.5%)	421 (37.4%)
None alive	25 (13.2%)	53 (18.5%)	10 (13.7%)	162 (28.0%)	250 (22.2%)
CSE, <i>n</i> (%)					
Yes	24 (12.7%)	42 (14.7%)	11 (15.1%)	197 (34.1%)	274 (24.3%)
No	165 (87.3%)	244 (85.3%)	62 (84.9%)	381 (65.9%)	852 (75.7%)

Note. *n* = 1126. *M* = mean; *SD* = standard deviation. Eight observations deleted due to missing responses for worry and hopelessness questions (0.71% of total sample, *N* = 1134).

Table 2

Bivariate and multivariate associations between demographic characteristics, risk factors, and psychological distress among youth living in the slums of Kampala

	Unadjusted OR			Adjusted OR		
	Worry only	Hopelessness only	Worry/hopelessness co-occurrence	Worry only	Hopelessness only	Worry/hopelessness co-occurrence
Age	1.18 [1.07, 1.31]	1.18 [1.02, 1.36]	1.37 [1.25, 1.50]	1.18 [1.07, 1.31]	1.17 [1.01, 1.35]	1.31 [1.20, 1.44]
Sex						
Male	1.00	1.00	1.00	1.00	1.00	1.00
Female	0.81 [0.56, 1.17]	0.81 [0.47, 1.38]	1.16 [0.83, 1.62]	0.79 [0.53, 1.14]	0.78 [0.45, 1.35]	0.89 [0.62, 1.27]
Orphan status						
Both alive	1.00	1.00	1.00	1.00	1.00	1.00
One alive	1.28 [0.86, 1.92]	1.37 [0.76, 2.45]	1.45 [1.008, 2.10]	1.30 [0.86, 1.95]	1.38 [0.77, 2.48]	1.37 [0.94, 1.99]
None alive	1.67 [0.97, 2.88]	1.20 [0.52, 2.77]	3.04 [1.87, 4.93]	1.72 [0.99, 2.99]	1.23 [0.53, 2.85]	2.92 [1.77, 4.81]
CSE						
No	1.00	1.00	1.00	1.00	1.00	1.00
Yes	1.18 [0.69, 2.03]	1.22 [0.56, 2.64]	3.56 [2.24, 5.64]	1.05 [0.60, 1.84]	1.10 [0.49, 2.45]	2.71 [1.67, 4.41]

Note. $n = 1126$. OR = odds ratios; 95% confidence intervals displayed with brackets. Referent category is the absence of worry and hopelessness.

Final adjusted model statistics: Likelihood Ratio Test: $\chi^2 = 123.41$, $df = 15$, $p < 0.0001$.

Statistically significant associations ($\alpha = .05$) are bolded.