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Risk and protective factors for depression symptoms among children affected by HIV/AIDS in rural China: A structural equation modeling analysis

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ABSTRACT

Previous research has revealed a negative impact of orphanhood and HIV-related stigma on the psychological well-being of children affected by HIV/AIDS. Little is known about psychological protective factors that can mitigate the effect of orphanhood and HIV-related stigma on psychological well-being. This research examines the relationships among several risk and protective factors for depression symptoms using structural equation modeling. Cross-sectional data were collected from 755 AIDS orphans and 466 children of HIV-positive parents aged 6–18 years in 2006–2007 in rural central China. Participants reported their experiences of traumatic events, perceived HIV-related stigma, perceived social support, future orientation, trusting relationships with current caregivers, and depression symptoms. We found that the experience of traumatic events and HIV-related stigma had a direct contributory effect on depression among children affected by HIV/AIDS. Trusting relationships together with future orientation and perceived social support mediated the effects of traumatic events and HIV-related stigma on depression. The final model demonstrated a dynamic interplay among future orientation, perceived social support and trusting relationships. Trusting relationships was the most proximate protective factor for depression. Perceived social support and future orientation were positively related to trusting relationships. We conclude that perceived social support, trusting relationships, and future orientation offer multiple levels of protection that can mitigate the effect of traumatic events and HIV-related stigma on depression. Trusting relationships with caregivers provides the most immediate source of psychological support. Future prevention interventions seeking to improve psychological well-being among children affected by HIV/AIDS should attend to these factors.

Introduction

The HIV/AIDS pandemic has contributed to a dramatic increase in orphans worldwide. In 2005, more than 15 million children under the age of 18 years had lost one or both parents to AIDS worldwide (UNICEF, 2007). Sub-Saharan Africa is the most severely affected region, accounting for more than 80% of children orphaned by AIDS (UNAIDS, 2010). The number of children orphaned by AIDS worldwide could reach 40 million by 2020 (UNICEF, 2009). A substantial body of research has explored the impact of orphanhood on the well-being of children in the past few years. These studies found that children whose parents were infected with or died of HIV/AIDS suffered from psychological problems including depression, anxiety, anger, and posttraumatic stress symptoms (Atwine, Cantor-Graae, & Bajunirwe, 2005; Cluver, Gardner, & Operario, 2007; Li et al., 2009). Despite the abundance of descriptive literature, little is known about psychological protective factors that can mitigate the effect of traumatic life events and HIV-related stigma on mental health.

Traumatic life events and HIV-related stigma-a double burden for AIDS orphan

Previous research has found that traumatic life events are associated with higher levels of posttraumatic stress disorder (PTSD), anxiety, and depression (Cluver, Orkin, Gardner, & Boyes, 2011; Krupnick et al., 2004; Suliman et al., 2009). Losing one or both parents during childhood is one of the most traumatic events for a child (Haine, Ayers, Sandler, & Wolchik, 2008). Attachment theory posits that children have a need for a secure relationship

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with an adult caregiver for normal social and emotional development (Bowlby, 1982). The loss of one or both parents generally exposes the child to increased stress and results in increased psychological symptoms that can be detrimental to the child's well-being (Thompson, Kaslow, Price, Williams, & Kingree, 1998). A cross-sectional study in China found that children affected by HIV/AIDS compared to those who have not been directly impacted by HIV/AIDS reported higher exposure of traumatic life events and more psychosocial adjustment problems, including depression and impaired self-esteem (Li et al., 2009).

In addition to anxiety experienced during the years of parental illness and grief and trauma following the death of a parent, children affected by HIV/AIDS are subject to stigma associated with the disease (Pivnik & Villegas, 2000). HIV-related stigma represents a double burden for these children (Messer et al., 2010). High levels of HIV-related stigma and discrimination has been reported among affected communities in South Africa, ranging from rejection to physical assault (Skinner & Mfecane, 2004). Research conducted in African countries has found that HIV/AIDS affected children suffer from stigma and discrimination at home, school and in their leisure environments (Ostrom, Serovich, Lim, & Mason, 2006). In a study of stigma toward AIDS-orphaned adolescents in Cape Town, South Africa, AIDS-orphaned adolescents reported higher levels of stigma than adolescents orphaned by non-AIDS causes and non-orphaned adolescents; Stigma was associated with poorer psychological outcomes (e.g., depression, anxiety, posttraumatic stress) (Cluver, Gardner, & Operario, 2008). In a study among patients in care for HIV in the US, all of the families interviewed recounted experiences with stigma and 79% of families experienced actual discrimination (Bogart et al., 2008). Preliminary data from rural China indicates the existence of stigma toward children in HIV/AIDS affected families, including isolation, ignorance and rejection (Xu et al., 2009). Furthermore, previous research found that the experience of stigma can reduce levels of social support and increase a sense of isolation for already vulnerable groups (Cluver et al., 2008).

Psychological protective factors for depression of children affected by HIV/AIDS: future orientation, trusting relationship, and perceived social support

"Future orientation refers to an individual's thoughts, plans, motivations, and feelings about his or her future" (McCabe & Barnett, 2000, p. 491). Future orientation is a multidimensional concept that includes such dimensions as future expectation, hope and perceived control. Previous research has found that future orientation has a protective effect on children's mental health (McCabe & Barnett, 2000; Snyder, Feldman, Taylor, Schroeder, & Adams, 2000; Zhang et al., 2009). Snyder and Lopez (2005) found that positive expectations yield higher confidence and people who have positive expectations about the future more easily confront adversity or difficulty. Snyder (2001) found that hope seems to mediate the relationship between unforeseen stressors and successful coping and is positively related with an individual's psychological health. Another cognitive factor related to future expectation and hope is perceived control over the future, which has also been found to be positively associated with an individual's mental health (Haine, Ayers, Sandler, Wolchik, & Weyer, 2003).

The broader mental health literature provides evidence for a positive effect of social support on children's psychological well-being. Lack of social support and lower perceived adequacy of social support have been linked to poor mental health (Allgöwer, Wardle, & Steptoe, 2001; Decker, 2007). Social support functions as a "buffer" to reduce distress and enhance coping for people in stressful life events (Callaghan & Morrissey, 1993; Hong et al., 2010). A higher perceived availability of social support was found to be directly associated with fewer symptoms related to trauma among a group of adolescents who suffered a stressful event (Bal, Crombez, Van Oost, & Debourdeaudhuij, 2003). However, limited data are available regarding social support and psychological health among children affected by AIDS. In a two-year intervention study among adolescents whose parents were infected with HIV/AIDS, it was found that reductions in depression, conduct problems, and problem behaviors were significantly associated with better social support (Lee, Detels, Rotheram-Borus, & Duan, 2007). A qualitative study conducted in Southwest China reported that children living in HIV/AIDS affected families were suffering from a number of psychological problems including fear, anxiety, grief, and loss of self-esteem and confidence and the children relied heavily on caregivers and peers to gain psychological support (Xu et al., 2009).

The quality of a child's attachment relationships with current caregivers after the loss or risk of loss of one or both of their parents has been identified as important for a child's socio-emotional functioning and general well-being (Fraley & Shaver, 1999; Waters, Weinfield, & Hamilton, 2000). A study of psychosocial adjustment among AIDS-orphaned adolescents found that greater caregiver–child connection was associated with less anxiety and depression (Wild, Flisher, Laas, & Robertson, 2006). Lower caregiver–child connectedness was found to be associated with a higher level of depression, especially among male orphans (Kaggwa & Hindin, 2010). These studies have identified the relationship between orphans and their primary caregiver as an important protective factor for orphans' psychological well-being. However, previous research has investigated these protective and risk factors for mental health individually or in pairs, as opposed to examining several variables together.

Based on the results of prior research, we constructed a hypothesized conceptual model (Fig. 1). In this model, we hypothesize that future orientation, trusting relationships, and perceived social support mediate the effect of traumatic life events and HIV-related stigma on depression. The three mediating variables represent individual, family and community level factors that may positively affect children's mental health. In addition, traumatic life events and HIV-related stigma were hypothesized to have a direct effect on depression.

AIDS orphans in China

Although most children orphaned by AIDS reside in Africa, the China Ministry of Health has estimated that there are at least 100,000 AIDS orphans in China, the majority of whom reside in rural, central China (Hong et al., 2011). The HIV/AIDS epidemic in central China was caused by the practice of unhygienic blood/plasma collection (China Ministry of Health (MOH) & UN Theme Group on HIV/AIDS in China, 2003), which is different from the corresponding epidemic in the African context, where the predominant mode of transmission is heterosexual intercourse. In the late 1980s and early 1990s, some governmental and commercial blood centers collected blood from poor farmers in central China. Without testing the farmer's blood for HIV and other blood-borne infections, the blood collection centers pooled the blood of several donors of the same blood type to separate the plasma, and infused the remaining red blood cells back into individual donors to prevent anemia. This practice, along with the reusing of needles and contaminated equipment, enabled a rapid spread of HIV virus among the local population. Consequently, a large number of these farmers succumbed to AIDS, leaving behind thousands of orphans.

The existing research has underscored the importance of intervention efforts to improve mental health among children affected by HIV/AIDS. With an ultimate goal to inform the