



Published in final edited form as:

Health Psychol Behav Med. 2015 January 1; 3(1): 217–235. doi:10.1080/21642850.2015.1068698.

Psychological Resilience among Children Affected by Parental HIV/AIDS: A Conceptual Framework

Xiaoming Li^{1,*}, Peilian Chi², Lorraine Sherr³, Lucie Cluver⁴, and Bonita Stanton¹

¹ Wayne State University School of Medicine, Detroit, MI 48201, USA

² Department of Psychology, University of Macau, Macau, China

³ University London College, London, UK

⁴ Oxford University, Oxford, UK and University of Cape Town, South Africa

Abstract

HIV-related parental illness and death have a profound and lasting impact on a child's psychosocial wellbeing, potentially compromising the child's future. In response to a paucity of theoretical and conceptual discussions regarding the development of resilience among children affected by parental HIV, we proposed a conceptual framework of psychological resilience among children affected by HIV based on critical reviews of the existing theoretical and empirical literature. Three interactive social ecological factors were proposed to promote the resilience processes and attenuate the negative impact of parental HIV on children's psychological development. Internal assets, such as cognitive capacity, motivation to adapt, coping skills, religion/spirituality, and personality, promote resilience processes. Family resources and community resources are two critical contextual factors that facilitate resilience process. Family resources contain smooth transition, functional caregivers, attachment relationship, parenting discipline. Community resources contain teacher support, peer support, adult mentors, and effective school. The implications of the conceptual framework for future research and interventions among children affected by parental HIV were discussed.

Keywords

Resilience; Children affected by HIV; Conceptual framework; Parental illness; Development stages; Psychosocial wellbeing

The HIV pandemic has resulted in a dramatic increase in the number of children who are affected by parental HIV worldwide. By the end of 2011, roughly 17.3 million children under age of 18 years had lost one or both parents to HIV, and millions more face the potential of losing their parents to HIV (UNICEF, 2015). These children endure a greatly increased risk of poverty, homelessness, curtailed education, discrimination, and loss of life opportunities. Some of the adversities experienced by those children have been documented

* Correspondence author: Xiaoming Li, Ph.D., Carman and Ann Adams Department of Pediatric Prevention Research Center, Wayne State University School of Medicine, 4707 St. Antoine, Suite W534, Detroit, MI 48201, USA, Tel: 313-745-8663, Fax: 313-745-4993, xiaoli@med.wayne.edu.

over the course of the last decade. Most of the existing studies conclude that losing a parent to HIV or living with a HIV-infected parent is a significant risk factor to child and adolescent development (Cluver, Orkin, Gardner, & Boyes, 2012; Fang et al., 2009; Makame, Ani, & Grantham-McGregor, 2002). However, although in a less volume, the existing literature also suggests that some of these children do not report clinically significant or elevated levels of mental health problems over time (Chi, Li, Barnett, Zhao, & Zhao, 2013; Pelton & Forehand, 2005; Rotheram-Borus, Weiss, Alber, & Lester, 2005). These later findings are not surprising as vast literature has documented the tremendous resilience that some children show in the face of adverse life conditions. Over the last half century, substantial literature has documented the significance of resilience in ameliorating a child's response to a wide array of adversities, such as poverty, parental mental illness or physical illness, maltreatment, community violence, parental divorce, and disastrous life events (Anthony, 1974; Fraser & Pakenham, 2008; Garmezy & Streitman, 1974; Gewirtz & Edleson, 2007; Hipke, Wolchik, Sandler, & Braver, 2002; Kim & Cicchetti, 2006; Klingman, 2006; K. K. Lin, Sandler, Ayers, Wolchik, & Luecken, 2004; Rutter, 1979; Werner & Smith, 1982). Recently, there has been an emerging interest in resilience among children affected by parental HIV (Betancourt, Meyers-Ohki, Charrow, & Hansen, 2013). Although existing research explicitly recognize the resilience perspective as a promising guiding framework to guide the research and health promotion practice to mitigate the impact of parental HIV on children's psychosocial wellbeing (Skovdal & Daniel, 2012), there is limited theoretical discussion in this aspect (Betancourt et al., 2013). In this article, we proposed a conceptual framework from developmental and socio-ecological perspectives centered on the resilience process of children affected by HIV (Figure 1). The major contribution of the proposed framework is the shift from a deficits perspective to strengths perspective in this field. Also, we apply the broader child resilience theoretical frameworks into parental HIV context. The uniqueness of risk and protective factors related to parental HIV could enrich the theoretical discussion of child resilience.

The framework we proposed in the current conceptual paper is a logical extension of the developmental psychopathology framework (X. Li et al., 2008) by integrating the core principles of ecological model of human development (Bronfenbrenner, 1979) and resilience perspectives (Luthar, Cicchetti, & Becker, 2000; Masten, 2011; Ungar, Ghazinour, & Richter, 2013). Figure 1 presents the conceptual framework that depicts the mechanism of resilience process among children affected by parental HIV. The framework is consistent with the observation that children do not necessarily develop significant developmental problems as a reaction to parental HIV, but rather the relative balance of risk and protective factors in the context of their lives predicts the psychosocial outcomes in short and long terms. The framework focuses on the propensity of the disease course to generate multiple stressful life events and the dynamic process of resilience within the context of parental HIV. The framework explicitly emphasizes modifiable individual and contextual factors that may mitigate the potentially deteriorating and enduring effects of parental HIV on children's psychological outcomes. The qualities of support from family and community, two critical contextual factors in positive child development in the face of adversity, are expected to collectively foster the development of children's internal assets (e.g., self-esteem, self-efficacy, and positive future orientation). While biological factors, such as brain function

and genes, do play a role in resilience development (as some internal assets may be genetic in origin), we did not include the biological factors in the current framework as they are less amenable in most modalities of psychosocial and behavioral interventions.

In the article, we began with a brief introduction on how parental HIV affects children's psychosocial well-being and development. We briefly summarized the impact of parental HIV on children based on our previous systematic review (Chi & Li, 2013) and others review efforts in the field (Betancourt et al., 2013; Sherr et al., 2014). Then we discussed the resilience process, which includes core constructs in the proposed framework, in the context of parental HIV. We borrowed broader literature on child development to illustrate our views because studies focusing on resilience of children affected by HIV are limited in the current time. We concluded with a discussion of the implications of the framework for future research and prevention interventions.

Impact of Parental HIV

Prior work has suggested that the death of a parent during childhood has a profound and potentially lasting impact on a child's psychosocial wellbeing (Dowdney, 2000). In addition to the obstacles to a successful resolution of grief normally faced by children who have lost their parents to other causes, children affected by HIV may face a number of unique psychological and social challenges including stigmatization, the impending or actual death of the surviving parent, disruptions in subsequent care, sibling separation, reduced school attendance, potential HIV infection themselves, and financial hardship (Belsey & Sherr, 2011; X. Li et al., 2008). In our previous work, we have divided these psychological and social challenges into three clusters: traumatic life events, stigmatization and financial hardships (Chi & Li, 2013). Recently studies also discussed the compromised care-giving as one of most challenging situations for children affected by HIV.

Traumatic Life Events

For a great majority of children, parents are their most significant guardians and partners in achieving the critical developmental tasks. The loss of a parent is very traumatic for most children. Aspects of children's grief may include denial, delusions of reunion with the deceased parent, the absence of overt expression, and persistent feelings of anger and reproach (Pivnick & Villegas, 2000). Children affected by HIV may experience additional stress associated with the shame, secrecy, and fear of disclosure regarding the cause of parental illness and death. First, the stigma attached to the causes of parental illness and death may inhibit their expression of negative emotions, which can lead to psychological distress and heightened likelihood of unresolved grief (K. K. Lin et al., 2004; Pivnick & Villegas, 2000). Second, multiple losses are commonly experienced by affected children. The chance that both parents are infected is high because sex contact is one of most common HIV transmission routes (Belsey & Sherr, 2011). In addition to parental loss, many children affected by HIV experience losses of other family members including siblings, close relatives, stepparents, subsequent caregivers, or significant others (Dane, 2002; Demmer & Rothschild, 2011; Q. Zhao et al., 2009). Third, children may also suffer prolonged anticipatory grief, an isolating and painful process during the period in which the parents become ill and ultimately disabled, often for a long period (Rotheram-Borus et al., 2005).

The lives of children whose parents died of AIDS are likely to have been stressful for many years prior to parental death; this is particularly true when the parent was involved in drug use, often intensifying the chaos within the family (Zayas & Romano, 1994). Longitudinal studies on children affected by HIV in both South Africa and the US have showed that children's externalizing and internalizing problems were the worst at least one year before parental death (Cluver et al., 2012; Pelton & Forehand, 2005; Rotheram-Borus et al., 2005). Finally, children who lost both parents or children of parents in the terminal stage of their disease also face the transition of care arrangement. In many African and Asian countries, grandparents and extended family usually take the responsibility to take care of orphaned children (Kuo & Operario, 2011; G. Zhao et al., 2007). The challenges associated with this type of care arrangement cannot be ignored. Grandparents may be elder, less energetic, less economically secure, have to take care of multiple children, and are bereaved themselves over the premature loss of their adult children (Ice, Yogo, Heh, & Juma, 2010). Some orphaned children in low-resource regions are placed outside of the homes of nuclear or even extended families. The centralized or institutionalized care (e.g., orphanage, community-based group home) and sibling separation are universally assumed to be highly undesirable (X. Li et al., 2008).

Stigma and Bullying

Despite substantial efforts across the globe to reduce stigma associated with HIV, such stigma and stigmatization remain prevalent. Prejudice, discounting, discrimination and discrediting are directed both at the persons living with HIV, and at family members, groups and communities with which they are associated (Parker & Aggleton, 2003). Stigma has negative effects on children's mental health because of social exclusion and rejection, increasing the likelihood of the child becoming a target of bullying (Cluver & Orkin, 2009; G. Zhao, Li, Zhao, Zhang, & Stanton, 2012). Nyamukapa and colleagues (2010) reported that AIDS-orphaned children in Zimbabwe were five times more likely to experience stigma than children from HIV-free families. In many studies stigma was found to be a pervasive factor that negatively affected all the children living in HIV-affected communities. For example, in a Chinese HIV endemic area, Lin and colleagues (2010) found that AIDS orphaned children, vulnerable children, and children from HIV-free families from the same community where HIV was prevalent experienced similar levels of stigma. Bullying, combined with poverty, was shown to increase the likelihood of psychological disorders from 12% to 76% (Cluver & Orkin, 2009).

Financial Hardship and Compromised Quality of Care

HIV infection is frequently accompanied by a financial burden on the family; this burden is especially problematic in settings with inadequate financial resources and/or limited social welfare support. Studies have showed HIV infection can bring severe and long-lasting financial strains include loss of incomes, increased healthcare expenses, and disruption of savings (Sherr et al., 2014). These factors may indirectly affect children's living condition and quality of care. For example, food insecurity, lack of necessary medical care, youth-headed households, child labor, and inadequate care were frequently reported among children affected by HIV in Sub-Saharan region (Cluver et al., 2012; Delva et al., 2009; Makame et al., 2002; Nyamukapa et al., 2008). With timely access to antiretroviral

treatment, many parents with HIV are able to live longer with their children. HIV progression is highly contingent on access to antiretroviral treatment and treatment efficacy overtime. Timely and appropriate treatment may restore the functioning of the parents, enhance the stimulating environment for children, and restore capacity of the parents and family to provide quality childrearing. However, some of the challenges associated with living with chronic illness might compromise the psychological adjustment of children. Parents living with HIV may have to cope with a multitude of stressors, such as complex medical treatments with substantial side-effects (Cook et al., 2002), mental health challenges as a result of HIV infection (Sherr, Clucas, Harding, Sibley, & Catalan, 2011), stigma related to HIV (Parker & Aggleton, 2003), and loss of support networks (Sikkema, Kochman, DiFranceisco, Kelly, & Hoffmann, 2003). These physical and emotional demands may comprised the parenting quality, disrupted family routines (Murphy & Marelich, 2008). Children may be required to take the adult responsibility to provide care to ill adults, perform household work, taking care of younger siblings (Zhang et al., 2009) or even become the breadwinners in the family. These can increase the children's risk to poor health, school drop-out, and child labor (Xu, Wu, Duan, Han, & Rou, 2010). All of these create a challenging environment for children to thrive.

Resilience Process

Resilience is A Longitudinal Process Negotiating Adversities

While there is no universally accepted definition, psychological resilience in the child development literature is typically defined as a dynamic process encompassing positive adjustment within the context of trauma, tragedy, threats or other adversities (APA, 2012; Luthar et al., 2000). Evolving from the earlier focus on individual abilities of “resilient children”, researchers have increasingly recognized that resilience is an interactive process among three factors: internal assets of the children, supporting roles of their family, and supportive community (Luthar et al., 2000). Resilience occurs in the presence of one or more such internal and external protective factors. These protective factors are likely to develop protection against the overwhelming influence of risk factors when a child is exposed to risk or adversity. As suggested by previous conceptual discussion (Bonanno, 2004; Luthar et al., 2000), there is no single way of “retaining equilibrium” following highly adverse events, but rather there are multiple pathways to resilience. Also, resilience takes time to develop in children's life. Children built up their tenacity, hope, optimism, emotional regulation, and wisdom on their successful experiences in coping with challenging life events (Zautra, Hall, Murray, & the Resilience Solutions Group, 2008). These characteristics or resilience required the researchers to examine the trajectories of resilience over a longitudinal process and from a multilevel perspective. In contrast to a “deficit model”, one of the distinctive features of resilience models is the focus on strengths and positive development, pointing to pathways for intervention. Without discounting the adversities, resilience frameworks emphasize promoting healthy functioning and development rather than focusing on psychopathological problems (Masten, 2011). This paradigm shift results in a transformative working approach to enhance resilience.

Resilience research has focused on the psychological development in age-appropriate tasks (Masten, 2011). There are common and unique characteristics in the biological, cognitive and psychosocial processes of different stages of child development. The biological processes refer to the physiological and neurological changes in an individual's body, such as the brain development, height and weight, motor skills, and the hormonal levels. The cognitive processes involve the changes in an individual's intelligence, language, and information processing and reasoning ability. The psychosocial processes consist of an individual's relationships with other people (e.g., family members and peers), self-identity, social and moral development, and emotion. Major developmental tasks in middle and late childhood (aged from 6 to 11) include school adjustment such as attendance, appropriate conduct, learning to read and to perform arithmetic tasks, getting along with peers, and following the rules of society for moral behavior and prosocial conduct. For adolescents (aged from 12 to 18), developmental tasks include learning skills needed for higher education or work, establishing close relationships with individuals of the same and opposite gender, and forming a cohesive sense of self (Masten & Coatsworth, 1998). These normative developmental tasks vary somewhat between cultures. Thus, in studying the resilience of children affected by HIV, researchers should define positive development according to the target population and develop culturally and developmentally appropriate indicators or criteria of resilience.

Resilience is Nourished by Family and Community Resources

Informed by the principles of social ecological model (Bronfenbrenner, 1979), we proposed that resilience process occurred in the multilevel systematic interactions between individual and environment. Internal assets were nourished by the effective family and community resources. In turn, those internal assets also facilitate individuals to seek and make good use of the resources at the familial and community level. Our proposed framework suggests that promoting factors of resilience might exert effects in an interactive and accumulative way. The greater the stress, the greater the resources that are needed to promote psychological resilience (Luthar et al., 2000). Internal assets and external resources often interact to help children to successfully negotiate the environmental risks (Brody et al., 2013). The internal assets and external resources can interplay in multiple pathways. For example, a child with higher levels of self-esteem tends to communicate more with peers and family members about the deceased parent(s) and receives more emotional support, which in turn improve one's internal assets (Du, Li, Chi, Zhao, & Zhao, 2014). Likewise, if peers are more supportive or share a similar experience of loss, a child may be motivated to express his or her emotions, which will facilitate the normal grieving process (Larsen et al., 2012). In addition, given the reliance of young children on parents and environmental circumstances (i.e., limited autonomy), the resources in family and community may have important effect on children's capacity to adapt to adversities (Zautra et al., 2008).

Internal Assets Allow Resilience to Occur

Our conceptual framework emphasizes the importance of adaptive coping by children affected by HIV, rather than seeing them as passive victims. The devastating effect of parental HIV requires the children to utilize existing coping strategies and skills as well as to develop new ones. Adaptive coping requires the ability to seek help, reconstruct the meaning

of loss, manage stress, and effectively address new problems that inevitably will arise. These competences are developed in the socialization process by the continuous interactive dynamics of nature (inborn traits) and nurture (opportunities to learn). Masten (2001) identified ordinary human adaptive systems that help children to overcome adversities, including intelligence and cognitive abilities, emotional and behavioral regulation, motivation to adapt to environments, and specific personality traits. These internal assets have been described as arising from the “everyday magic of ordinary, normative human resources” (Masten, 2001, p.235) rather than rare and extraordinary capacities. These basic adaptive systems can be nurtured by education, parenting, prevention and intervention. Although theorists agree that internal assets are core to children's resilience, most of the existing studies among children affected by HIV have focused on risk factors (Skovdal & Daniel, 2012). The resilience research and also the global literature on psychosocial wellbeing of children affected by HIV have emphasized on the following internal assets.

Cognitive Capacity—Intelligence and related cognitive skills for solving problems are among the most frequently identified internal assets that promote children's resilience. Intelligence contributes to children's resilience by allowing children to comprehend what is happening to them, to differentiate what is manageable from what is not, to choose appropriate ways of coping, and to identify and assimilate into more supportive environments (Condly, 2006). Given that intelligence is the comprehensive ability to reason, plan, understand, learn, reflect, and solve problems, the greater resilience to adverse situations among children with higher intelligence might result from their increased success in finding solutions to stressful circumstances (Huisman et al., 2010). On the other hand, intelligence can be augmented by education. It is possible that children affected by HIV have limited school-access, low-quality education, or cognitive challenges (Sherr, Mueller, & Varrall, 2009). Hence, the very agile thinking and problem solving might be commodities that they have challenges with (Han, Li, Chi, Zhao, & Zhao, 2013).

Motivation to Adapt—Human beings are motivated by various reward systems to adapt to the environment, and people who had the belief that they will be successful tend to persist longer in the face of initial (and frequent) challenges (Bandura, 1977; Masten, 2011). Resilience of children may be partially attributed to mastery motivation systems that are known to play a role in responding to and dealing with stressful life events. Mastery competence is promoted by accumulative success in solving problems (Masten, 2011). A sense of control over the environment is important for resilience (Masten, 2011). Studies among children affected by HIV in China revealed that hopefulness, positive expectations about the future and a sense of control over one's future are associated with increased resilience (Wang et al., 2012). Self-esteem, self-confidence, and coping self-efficacy were associated with increased resilience in a study conducted in Africa (Betancourt et al., 2011). Worldwide studies suggested that caregiving responsibilities among children affected by HIV may have some positive effect on personal growth and contribute to a child's positive competence in supporting their households (Campbell et al., 2012; Skovdal, 2010; Zhang et al., 2009).

Coping Skills—Adaptive response to adversity requires the capacity to regulate one's own attention, expression of emotions, impulses, thinking, planning and actions (Masten, 2011). These skills are critical for success in life and intervention programs to improve these skills with children from low-income families show promising effects (Diamond, Barnett, Thomas, & Munro, 2007). One such program was the “Teens and Adults Learning to Communicate” (TALC), a coping intervention for adolescents living with HIV-positive mothers developed in the United States by Rotheram-Borus and colleagues (Rotheram-Borus, Lee, Lin, & Lester, 2004). During a six-year follow-up, adolescents 11 to 18 years old assigned to the TALC intervention reported significantly lower levels of emotional distress, conduct problems, and family-related stressors and higher levels of self-esteem than did control group children. This intervention program has also demonstrated promising effects in resource-limited regions (Fawzi et al., 2012).

Religion and Spirituality—Faith has been recognized as an important internal strength through almost entire human history (Skovdal & Daniel, 2012). Religion can be understood as a child's faith or inner belief system. The belief system may guide children in various aspects of life. By offering ways in which children can make sense of their pain and suffering, they may construct a strong internal locus of control. Meanwhile, spiritual teachings, such as compassion and forgiving, advocate resilience itself by allowing children to view adversity as an opportunity for personal growth and development (Pienaar, Swanepoel, van Rensburg, & Heunis, 2011). Religiosity and optimism have been found to be associated with positive perspectives when addressing traumatic memories of childhood sexual abuse in a sample of HIV positive men (Tarakeshwar, Hansen, Kochman, Fox, & Sikkema, 2006). Children's appraisal or spiritual interpretation of the stressful events is important in predicting children's psychological outcome. Children who perceive negative events to be less threatening and feel more confident or have more control in coping with life stressors are more resilient to the loss of a parent (K. K. Lin et al., 2004).

Personality—Some of children's personality traits are viewed as potential sources of resilience. The pioneering study of Werner (1993) indicated that temperaments such as being active, energetic, and/or easy-going allow children to more effectively engage with others and elicit more positive resources from caregivers and outside of family. Children with such dispositions display more tolerance to frustration, impulse control, autonomy and sociability. Resilience has also been found to be associated with higher scores on personality measures such as emotional stability, extroversion, agreeableness, openness and conscientiousness (Friborg, Barlaug, Martinussen, Rosenvinge, & Hjemdal, 2005; Shiner & Masten, 2012). A few qualitative studies have suggested that some children who lost parents to AIDS experienced personal growth, emotional maturity, and sense of independence (Murphy, Roberts, & Herbeck, 2013). These findings are consistent with the phenomenon of post-traumatic growth, which refers to awareness of new possibilities, appreciation of life, and spiritual change (Little, Akin-Little, & Somerville, 2011). In a qualitative examination of long-term effects of parental cancer in childhood through retrospective interviews with adults, about 44% of participants spontaneously reported post-traumatic growth (Wong, Cavanaugh, MacLeamy, Sojourner-Nelson, & Koopman, 2009). Our recent work also support that children with resilience traits, the ability to adapt flexibly, persistently and

resourcefully to stressful situations, may perceived less stigmatization and predict children's health-related biology (Chi et al., 2015). It is notable that personality traits are also context-dependent. For example, a child growing up in a resilience-promoting environment is much more likely to be open, easy-going, and appreciative of life. Therefore, personality is an interactive rather than an innate trait.

Family Resources Facilitate Resilience

Family is one of the important contexts in which children accomplish their developmental tasks. As discussed by Masten (2011), the central importance of the family relationship for resilience has been corroborated by every review of the literature since the earliest days of resilience research. A stable and caring family context can provide children with emotional security, physical defense, and access to resources. Effective parenting and monitoring can protect children from the negative impact of risk environments. HIV infection in a family can disrupt or strain the family resources, such as parenting quality and economic stability. The resources available thus plays a major role in determine to what scope the children can be supported (Sherr et al., 2014). The global literature has highlighted the following four important family resources in the context of parental HIV (Betancourt et al., 2013; Hong et al., 2014).

Smooth Transition—The child bereavement literature suggests that bereaved children require a sense of continuity of family to cope with the disruption in the family system caused by parental death (Worden, 1996). A smooth transition in care arrangement can provide children the sense of continuity. Care arrangement decisions prior to parental death, living with a close relative, moving to a family with better socioeconomic status, limited residential displacement and changes of caregiver, and living together with their siblings have all been demonstrated to stimulate resilience of children affected by HIV (Bhargava, 2005; Gong et al., 2009; Q. Zhao et al., 2011).

Functional Caregiving—The functioning of family members, particularly the adaptive responses and behaviors of the current caregivers, may exert an influence on children's resilience. Caregivers may serve as a model of adaptive coping for their children, thereby influencing a child's interpretation of parental illness and death. Bereavement is a painful but natural and probably universal human experience. The healthy coping of the surviving parent and family members, such as positive meaning construction of the death, can teach the child to understand death and facilitate post-traumatic growth (Worden, 1996). In addition, the level of psychological functioning of the caregivers is important for child resilience. A longitudinal study in the US among HIV-positive parents has suggested that it is the parental distress over their own symptoms, rather than the actual severity of parental HIV illness, that predicted increased somatic symptoms among their children (Lester, Stein, & Bursch, 2003). If the caregivers are optimistic, calm and easy with their health and functioning and have timely access and a high level of adherence to necessary antiretroviral therapy, they may be more capable to take the responsibility of caregiving, more likely to exhibit better parenting skills such as better parent-child communication and consistent and effective parenting discipline (Betancourt et al., 2011; Murphy, Marelich, Armistead, Herbeck, & Payne, 2010).

Attachment with Current Caregivers—Attachment, as a powerful biological and social system, was defined by Bowlby (1969) as the bonds between a caregiver and a child. The connection with a trusting caregiver can help children adapt to the adversities. Research based on attachment theory has provided strong and consistent evidence that children with secured attachment have an advantage on the language development, academic achievement, and psychosocial functioning (Thompson, 2008). When the primary caregiver of a child is lost, it is critical that someone else takes on the protecting roles of the primary attachment figure (Masten, 2011). HIV-affected children's resilience is more likely to occur when an adult reliably satisfies the child's physical and emotional needs (Worden, 1996). According to a study in rural China, a trusting relationship with the current caregiver is the most proximal protective factor for children affected by HIV (Wang et al., 2012). Rotheram-Borus and colleagues (2006) also reported that positive parental bonds reduced children's emotional distress three years later and increased children's positive future expectation six years later in an US urban sample.

Parenting Discipline—The ability of the primary caregiver to provide effective parenting is crucial to a child's adjustment to parental illness and death. After the death of a parent, the surviving parent's provision of warmth as well as discipline is significantly related to child resilience, especially for teenagers in high-risk environments (K. K. Lin et al., 2004). In an earlier qualitative study among children affected by parental HIV and drug abuse in New York City, children can “recover sufficiently to perform in school and resurrect lives infused with some pleasure and hope for future” in a loving family environment and with responsible and skillful caregivers (Pivnick & Villegas, 2000). Similarly, Dutra and colleagues (Dutra et al., 2000) suggested the importance of parenting in promoting resilience of children affected by maternal HIV in the inner-city of New Orleans. A positive parent-child relationship, characterized by positive communications, mutual understanding, and reliable support, provided resources that enable a child to adapt well in the face of the stigmatizing maternal illness. They also found that a positive parent-child relationship promoted children's resilience only within the context of high levels of parental monitoring (Dutra et al., 2000). As the authors discussed, in a high-risk neighborhood, parental monitoring is as important as parental support, because it can set responsible restrictions which can limit the children to exposure to high-risk environments. Therefore, if a surviving parent or other primary caregiver is actively involved in effective parenting, their children may have more opportunities to be resilient against the parental loss.

Community Resources Facilitate Resilience

At the societal and community level, promoting factors for child resilience included social support from peers, teachers, mentors and other community members, effective school, and supportive community (e.g., government policies, programs, grants). The disastrous effects of parental illness and death often weakened the support to children affected by HIV from other family members. Thus, the supportive relationships with teachers, peers, other non-family mentors might be critical for children's resilience. A supportive and competent community can create a caring and enabling environment for child development (Chi & Li, 2013).

Teacher support—Children affected by HIV may view teachers as resources from whom they can seek support (Ebersöhn & Ferreira, 2011). Teachers in the HIV-pandemic area inevitably confront HIV-related vulnerabilities among their students. Teachers may work with HIV affected children in classrooms and on playgrounds, respond to grieving children who have lost their parents, and know children who take care of ailing parents. Teachers may meet caregivers and discuss not only the academic issues but also the parenting outside of school. Sometimes, teachers themselves are infected with HIV or have lost loved ones to HIV. The routine and frequent teacher-student interactions in school allow teachers to provide social support for the orphaned or vulnerable children (Du et al., 2014). A few school-based interventions designed to empower teachers in high HIV pandemic regions have demonstrated some promising effects (Ferreira & Ebersohn, 2011; Wolmer, Hamiel, Barchas, Slone, & Laor, 2011; Wood, Ntaote, & Theron, 2012).

Peer support—Peer relationship exerts an enormous influence on the lives of school-aged children. Sullivan (1953) argued that there was a dramatic increase in the psychological importance and intimacy of close friends during early adolescence. Friendship can fulfill a number of basic needs such as companionship, social acceptance, and intimacy, which are crucial for a child's emotional wellbeing and sense of self-worth. In terms of developmental stages, adolescents, compared to younger children, depend more on friends than on parents to satisfy these psychosocial needs (Santrock, 2004). For HIV affected children, studies have shown that a positive peer relationship can foster positive feelings of self through friendship and contribute to their psychological adjustment (Cluver & Orkin, 2009; Du et al., 2014). Through sharing experiences with others in similar situations and disclosure of mutual fears and insecurities, children can gain the sense of their “normality” and feel supported. A school-based peer-group intervention has significantly improved the psychological wellbeing of AIDS orphaned children in Uganda (Kumakech, Cantor-Graae, Maling, & Bajunirwe, 2009).

Other Mentors—Children affected by HIV are likely to experience strained parental caring and guidance. Other mentors such as local elders, formal and informal community leaders, neighbors, and extended family members may exert influences on children as surrogate-parents. Onuoha and Munakata (2010) found that AIDS orphaned children in Uganda having such a natural mentor showed significantly decreased psychological distress compared to those without such a mentor. Non-family mentors are different from primary caregivers. In the relationship with non-family mentors, children might obtain or perceive assistance, guidance, modeling, and psychosocial support. In resource-limited settings of Zimbabwe and Kenya, protective factors included connectedness to a caring adult outside the family and a sense of community inclusion (Gilborn et al., 2006; Hutchinson & Thurman, 2009).

Effective School—Effective schools have been commonly identified as being protective for high-risk children (Masten, 2011). Because school is charged with educational goals that enhance human development, it plays an important role in fostering the fundamentally protective internal assets such as self-regulation, intelligence, and self-efficacy. Health-promoting schools involve the family and community, provide safe and supportive physical

and social environment, build good school-community relationships, provide HIV specific education and prevention, and increase access to health services. Considering stigma and discrimination associated with HIV, effective schools can provide caring spaces in which orphaned and vulnerable children may feel safe and have a sense of belonging (Ebersöhn & Ferreira, 2011). In addition, schooling gives children the hopes for their future and the resources to achieve their social goals (Betancourt et al., 2013).

Supportive Community—The living systems of children also include the neighborhood or other segments of the community where their families are located. It has been acknowledged internationally that a comprehensive approach to care for children affected by HIV must include a focus on strengthening the community (Cowan et al., 2008; Wu & Li, 2013). The sense of safety and stability of the local community is important for children during parental illness and after parental death. Research has shown that financial stability and community resources improve outcomes of grieving families (Pivnick & Villegas, 2000; Ssewamala, Han, & Neilands, 2009). In recent years, programs to assist children, families, and communities have proliferated through the areas affected by HIV as governments, international donors, NGOs, and community-based organizations have responded to the effect of HIV (Baptiste et al., 2005; Mueller, Alie, Jonas, Brown, & Sherr, 2011; Ssewamala et al., 2009).

Implications for Research and Intervention

The application of a resilience process conceptual framework provides an alternative to a “deficit” paradigm of intervention and shifts our conceptualization from pathology to strength. The focus of most existing intervention research among children affected by HIV has been primarily to determine and intervene on risk factors with which children need to cope in life (Betancourt et al., 2013; Ungar et al., 2013). With the guidance of resilience theory, we focus on the strengths, competencies, and capacities in children, families, and communities. Future intervention and policy-making efforts need to identify and develop strategies to enhance the strengths of children affected by HIV and their socio-ecological systems.

Application of our proposed framework requires clear conceptual operationalization of child outcomes, adversity, and protective mechanisms. Future research using a prospective longitudinal design will be needed to test potential pathways of resilience process. The multidimensional nature of resilience may require researchers to examine specific domains of resilience, such as educational resilience, emotional resilience and behavioral resilience in future studies (Luthar et al., 2000). Developmentally appropriate tasks must be considered in operationalizing “psychological adjustment” for children of various ages or development stages. For example, for school-age children, academic success and positive relationship with peers and adults would be appropriate indicators of resilience (Masten, 2011). It is of great importance to identify the interactive process between internal assets and external resources that potentially buffer the negative effect of parental HIV on children's psychosocial wellbeing and promote resilience.

Future research may employ both the person-focused and variable-oriented analytic approaches to identify amenable factors that can promote psychological resilience among children affected by HIV. Person-focused approaches (Bonanno, 2004) differentiate resilient and non-resilient children and compare the differences of internal assets and external resources between two groups of children. Person-focused approaches emphasize the group differences in the response to adversities. Individuals can be clustered into groups of specific developmental trajectories. In this approach, researchers need to be aware that the effect of parental HIV may vary as a function of the changes of children's internal assets and external resources that occur over time following the parental illness or death. Researchers may also want to use variable-oriented approaches to test the associations among the variables of interest and reveal the specific factors and process that may help to predict better outcomes among children. Recent advances in multivariate statistics (e.g., latent growth curve modeling and growth mixture modeling) have made it possible to identify the longitudinal patterns of resilience (Bonanno, 2004) and to test hypotheses about potential contributors to resilience and underlying mechanism (Masten, 2011).

Rigorous intervention and evaluation design is needed in the field. Only a few known randomized controlled trials have been conducted to promote the wellbeing of children affected by HIV (Eloff et al., 2014; Keypour, Arman, & Maracy, 2011; Kulkarni, Kennedy, & Lewis, 2010; Kumakech et al., 2009; L. Li, Liang, Ji, Wu, & Xiao, 2014; Mueller et al., 2011; Murphy, Marelich, Graham, & Payne, 2015; Rotheram-Borus et al., 2006; Ssewamala et al., 2009). These studies were mainly conducted in the US, China or African countries. Most of the interventions adopted family-based intervention, which provide parallel or joint sessions for both children and their infected caregivers. Group intervention is the most common format applied by the available intervention studies. Most of interventions for children focused on coping skills training, self-advocacy, and economic empowerment. Interventions at family level included positive parenting and self-care. Joint sessions focused on parent-child communication, parental monitoring, and mutual support. Economic empowerment (Swendeman, Rotheram-Borus, Comulada, Weiss, & Ramos, 2006), peer psychosocial support (Kumakech et al., 2009), and teacher's support (Ebersöhn & Ferreira, 2011) were only tapped by very few studies. To our best knowledge, there is no interventions study at structural or policy levels. Many more programs were designed to improve the psychosocial wellbeing of such children, but there were some important methodological limitations. These limitations include lack of rigorous design (e.g., no randomization or no valid comparison group), relatively small sample size (e.g., in the 200's or fewer), a focus on a single system of child's life (e.g., school), relatively short follow-up (e.g., less than one year), and limited data on implementation fidelity (King, De Silva, Stein, & Patel, 2009). In addition, many studies also focused on older children, yet parental HIV may disproportionately affect young children in low- and middle-income countries (Engle et al., 2011). Resilience-focused intervention program should be designed to be responsive to the characteristics of children in different developmental stages. To target different components of social ecological systems, multilevel intervention could also be employed, such as child intervention, family-level intervention, school-level intervention, community-level intervention, or some combinations of these approaches.

Child interventions might focus on the nurturing of coping skills (cognitive skills, emotional skills, and communication skills, and problem solving skills), the strengthening of the internal assets (self-esteem, tenacity, positive future orientation, academic competence and optimism), and increasing the awareness of the existence of external resources and support. Family-level interventions may focus on the effective parenting including parent-child relationship, safe and engaging environment, assertive discipline, realistic expectations, and parental self-care. Good planning for smooth transitions and cognitive support may be important. School-level interventions may focus on the capacity building of both individual teachers and entire school system and improvement of school environment, such as mobilizing the resource, capacity, and assets available in school communities, and bridging the resources in communities to support children and caregivers in need. The primary goals of community interventions should be creating a comprehensive supportive and enabling environment in the community for the children and their caregivers, identifying the resources and strengths in the community as well as in the government, non-governmental organizations, and business sectors that can support children and their families, establishing a local support network among children and their caregivers, and raising community awareness of the needs of children and their families in order to increase social support and decrease stigma.

Our conceptual framework also has some limitations. First, the framework may not be generalized to children living with HIV, which is a group facing substantially different adversities and requiring different resources. Second, the framework is very comprehensive and difficult to be tested as whole model. However, researchers could select the concepts and pathways that are important and relevant to their research question to investigate. Third, we suggest that future studies should clearly operationalize their study variables in the resilience process and outcome. But, it is challenging to find appropriate resilience measures with strong psychometric properties and being developmentally and culturally appropriate in the HIV context.

Despite these limitations, this conceptual framework makes important advances in the shift from pathological perspective to resilience and strengths perspective in research and prevention intervention science among children affected by parental HIV. The unique concepts in the HIV context (e.g., smooth transition, effective school, supportive community) broaden the current individual and family centered views of resilience process in child development literature. It also provides some insights and major components to design prevention and intervention programs for children affected by HIV.

Acknowledgements

This study was support by NIH Research Grant R01MH76488 and R01NR13466 by the National Institute of Mental Health and National Institute of Nursing Research.

References

- Anthony, EJ. The syndrome of the psychologically invulnerable child.. In: Anthony, EJ.; Koupernik, C., editors. *The child in his family: Children at psychiatric risk*. Wiley; New York: 1974. p. 529-545.

- APA.. [June 27, 2012] What is resilience?. 2012. from <http://www.apa.org/helpcenter/road-resilience.aspx>
- Bandura, A. Social learning theory. Prentice Hall; Englewood Cliffs, N.J.: 1977.
- Baptiste DR, Paikoff RL, McKay MM, Madison-Boyd S, Coleman D, Bell C. Collaborating with an urban community to develop an HIV and AIDS prevention program for black youth and families. *Behavior Modification*. 2005; 29(2):370–416. doi: 10.1177/0145445504272602. [PubMed: 15657414]
- Belsey MA, Sherr L. The definition of true orphan prevalence: Trends, contexts and implications for policies and programmes. *Vulnerable Children and Youth Studies*. 2011; 6(3):185–200. doi: 10.1080/17450128.2011.587552.
- Betancourt TS, Meyers-Ohki S, Stulac SN, Elizabeth Barrera A, Mushashi C, Beardslee WR. Nothing can defeat combined hands (Abashize hamwe ntakibananira): Protective processes and resilience in Rwandan children and families affected by HIV/AIDS. *Social Science and Medicine*. 2011; 73(5): 693–701. doi: 10.1016/j.socscimed.2011.06.053. [PubMed: 21840634]
- Betancourt TS, Meyers-Ohki SE, Charrow A, Hansen N. Annual Research Review: Mental health and resilience in HIV/AIDS-affected children-- a review of the literature and recommendations for future research. *Journal of Child Psychology and Psychiatry*. 2013; 54(4):423–444. doi: 10.1111/j.1469-7610.2012.02613.x. [PubMed: 22943414]
- Bhargava A. AIDS epidemic and the psychological well-being and school participation of Ethiopian orphans. *Psychology, Health & Medicine*. 2005; 10(3):263–275. doi: 10.1080/13548500412331334181.
- Bonanno GA. Loss, trauma, and human resilience: Have we underestimated the human capacity to thrive after extremely aversive events? *American Psychologist*. 2004; 59(1):20–28. doi: 10.1037/0003-066X.59.1.20. [PubMed: 14736317]
- Bowlby, J. Attachment, Vol. 1 of Attachment and loss. Basic Books; New York: 1969.
- Brody GH, Yu T, Chen E, Miller GE, Kogan SM, Beach SR. Is Resilience Only Skin Deep? Rural African Americans' Socioeconomic Status-Related Risk and Competence in Preadolescence and Psychological Adjustment and Allostatic Load at Age 19. *Psychological science*. 2013; 24(7): 1285–1293. [PubMed: 23722980]
- Bronfenbrenner, U. The ecology of human development: Experiments by nature and design. Harvard University Press; Cambridge, Mass: 1979.
- Campbell C, Skovdal M, Mupambireyi Z, Madanhire C, Robertson L, Nyamukapa CA, Gregson S. Can AIDS stigma be reduced to poverty stigma? Exploring Zimbabwean children's representations of poverty and AIDS. *Child: Care, Health and Development*. 2012; 38(5):732–742. doi: 10.1111/j.1365-2214.2011.01311.x.
- Chi P, Li X. Impact of parental HIV/AIDS on children's psychological well-being: A systematic review of global literature. *AIDS and behavior*. 2013; 17(7):2554–2574. doi: 10.1007/s10461-012-0290-2. [PubMed: 22972606]
- Chi P, Li X, Barnett D, Zhao J, Zhao G. Do children orphaned by AIDS experience distress over time? A latent growth curve analysis of depressive symptoms. *Psychol Health Med*. 2013; 19(4):420–432. doi: 10.1080/13548506.2013.841965. [PubMed: 24090100]
- Chi P, Slatcher R, Li X, Ren X, Zhu J, J. Z, Stanton B. Perceived stigmatization, resilience and diurnal cortisol rhythm among children of parents living with HIV. *Psychological Science*. 2015
- Cluver LD, Orkin M. Cumulative risk and AIDS-orphanhood: Interactions of stigma, bullying and poverty on child mental health in South Africa. *Social Science and Medicine*. 2009; 69(8):1186–1193. doi: 10.1016/j.socscimed.2009.07.033. [PubMed: 19713022]
- Cluver LD, Orkin M, Gardner F, Boyes ME. Persisting mental health problems among AIDS-orphaned children in South Africa. *Journal of Child Psychology and Psychiatry*. 2012; 53(4):363–370. doi: 10.1111/j.1469-7610.2011.02459.x. [PubMed: 21883206]
- Condly SJ. Resilience in children - A review of literature with implications for education. *Urban education*. 2006; 41(3):211–236. doi: 10.1177/0042085906287902.
- Cook JA, Cohen MH, Burke J, Grey D, Anastos K, Kirstein L, Young M. Effects of depressive symptoms and mental health quality of life on use of highly active antiretroviral therapy among

- HIV-seropositive women. *Journal of Acquired Immune Deficiency Syndromes*. 2002; 30(4):401–409. [PubMed: 12138346]
- Cowan FM, Pascoe SJS, Langhaug LF, Dirawo J, Chidiya S, Jaffar S, Hayes RJ. The Regai Dzive Shiri Project: A cluster randomised controlled trial to determine the effectiveness of a multi-component community-based HIV prevention intervention for rural youth in Zimbabwe - study design and baseline results. *Tropical Medicine and International Health*. 2008; 13(10):1235–1244. doi: 10.1111/j.1365-3156.2008.02137.x. [PubMed: 18778329]
- Dane, BO. Bereavement groups for children: Families with HIV/AIDS.. In: Webb, NB., editor. *Helping bereaved children: A handbook for practitioners*. The Guilford Press; New York; London: 2002. p. 265-296.
- Delva W, Vercootere A, Loua C, Lamah J, Vansteelandt S, De Koker P, Annemans L. Psychological well-being and socio-economic hardship among AIDS orphans and other vulnerable children in Guinea. *AIDS Care*. 2009; 21(12):1490–1498. doi: 10.1080/09540120902887235. [PubMed: 20024728]
- Demmer C, Rothschild N. Bereavement among South African adolescents following a sibling's death from AIDS. *African Journal of Aids Research*. 2011; 10(1):15–24. doi: 10.2989/16085906.2011.575544. [PubMed: 21852964]
- Diamond A, Barnett WS, Thomas J, Munro S. Preschool program Improves cognitive control. *Science*. 2007; 318(5855):1387–1388. doi: 10.1126/science.1151148. [PubMed: 18048670]
- Dowdney L. Annotation: Childhood bereavement following parental death. *Journal of Child Psychology and Psychiatry and Allied Disciplines*. 2000; 41(7):819–830. doi: 10.1017/S0021963099006216.
- Du H, Li X, Chi P, Zhao J, Zhao G. Relational self-esteem, psychological well-being, and social support in children affected by HIV. *Journal of Health Psychology*. doi: 2014:10.1177/1359105313517276.
- Dutra R, Forehand R, Armistead L, Brody G, Morse E, Morse PS, Clark L. Child resiliency in inner-city families affected by HIV: the role of family variables. *Behaviour Research and Therapy*. 2000; 38(5):471–486. doi: 10.1016/s0005-7967(99)00070-4. [PubMed: 10816906]
- Ebersöhn L, Ferreira R. Coping in an HIV/AIDS-dominated context: teachers promoting resilience in schools. *Health Education Research*. 2011; 26(4):596–613. doi: 10.1093/her/cyr016. [PubMed: 21441389]
- Eloff I, Finestone M, Makin JD, Boeving-Allen A, Visser M, Ebersöhn L, Forsyth BW. A randomized clinical trial of an intervention to promote resilience in young children of HIV-positive mothers in South Africa. *AIDS*. 2014; 28:S347–S357. [PubMed: 24991908]
- Engle PL, Fernald LC, Alderman H, Behrman J, O'Gara C, Yousafzai A, Global Child Development Steering, G. Strategies for reducing inequalities and improving developmental outcomes for young children in low-income and middle-income countries. *Lancet*. 2011; 378(9799):1339–1353. doi: 10.1016/S0140-6736(11)60889-1. [PubMed: 21944378]
- Fang X, Li X, Stanton B, Hong Y, Zhang L, Zhao G, Lin D. Parental HIV/AIDS and psychosocial adjustment among rural Chinese children. *Journal of Pediatric Psychology*. 2009; 34(10):1053–1062. doi: 10.1093/jpepsy/jsp006. [PubMed: 19208701]
- Fawzi MCS, Eustache E, Oswald C, Louis E, Surkane PJ, Scanlan F, Mukherjee JS. Psychosocial support intervention for HIV-affected families in Haiti: Implications for programs and policies for orphans and vulnerable children. *Social Science and Medicine*. 2012; 74(10):1494–1503. doi: 10.1016/j.socscimed.2012.01.022. [PubMed: 22444459]
- Ferreira R, Ebersohn L. Formative evaluation of the STAR intervention: improving teachers' ability to provide psychosocial support for vulnerable individuals in the school community. *African Journal of Aids Research*. 2011; 10(1):63–72. doi: 10.2989/16085906.2011.575549. [PubMed: 25859621]
- Fraser E, Pakenham KI. Evaluation of a resilience-based intervention for children of parents with mental illness. *Australian and New Zealand Journal of Psychiatry*. 2008; 42(12):1041–1050. doi: 10.1080/00048670802512065. [PubMed: 19016092]
- Friborg O, Barlaug D, Martinussen M, Rosenvinge JH, Hjemdal O. Resilience in relation to personality and intelligence. *International Journal of Methods in Psychiatric Research*. 2005; 14(1):29–42. doi: 10.1002/mpr.15. [PubMed: 16097398]

- Garmezy N, Streitman S. Children at risk: The search for the antecedents of schizophrenia: I. Conceptual models and research methods. *Schizophrenia Bulletin*. 1974; 1(8):14. doi: PMID 4619494. [PubMed: 4619494]
- Gewirtz AH, Edleson JL. Young children's exposure to intimate partner violence: Towards a developmental risk and resilience framework for research and intervention. *Journal of Family Violence*. 2007; 22(3):151–163. doi: 10.1007/s10896-007-9065-3.
- Gilborn LZ, Apicella L, Brakarsh J, Dube L, Jemison K, Kluckow M, Snider L. Orphans and vulnerable youth in Bulawayo, Zimbabwe: An exploratory study of psychosocial well-being and psychosocial support programs: Bulawayo Horizons/Population Council report, in conjunction with REPSSI and CRS Strive. 2006
- Gong J, Li X, Fang X, Zhao G, Lv Y, Zhao J, Stanton B. Sibling separation and psychological problems of double AIDS orphans in rural China: A comparison analysis. *Child: Care, Health and Development*. 2009; 35(4):534–541. doi: 10.1111/j.1365-2214.2009.00969.x.
- Han T, Li X, Chi P, Zhao J, Zhao G. The impact of parental HIV/AIDS on children's cognitive ability in rural China. *AIDS Care*(ahead-of-print). 2013:1–8.
- Hipke KN, Wolchik SA, Sandler IN, Braver SL. Predictors of children's intervention-induced resilience in a parenting program for divorced mothers. *Family Relations*. 2002; 51(2):121–129. doi: DOI 10.1111/j.1741-3729.2002.00121.x.
- Hong Y, Chi P, Li X, Zhao G, Zhao J, Stanton B, Li L. Community-based family-style group homes for children orphaned by AIDS in rural China: an ethnographic investigation. *Health Policy and Planning*. 2014
- Huisman M, Araya R, Lawlor DA, Ormel J, Verhulst FC, Oldehinkel AJ. Cognitive ability, parental socioeconomic position and internalising and externalising problems in adolescence: Findings from two European cohort studies. *European Journal of Epidemiology*. 2010; 25(8):569–580. doi: 10.1007/s10654-010-9473-1. [PubMed: 20535529]
- Hutchinson P, Thurman TR. Analyzing the cost-effectiveness of interventions to benefit orphans and vulnerable children: Evidence from Kenya and Tanzania: USAID, MEASURE Evaluation. 2009
- Ice GH, Yogo J, Heh V, Juma E. The impact of caregiving on the health and well-being of Kenyan Luo grandparents. *Research on Aging*. 2010; 32(1):40–66. doi: 10.1177/0164027509348128.
- Keypour M, Arman S, Maracy MR. The effectiveness of cognitive behavioral stress management training on mental health, social interaction and family function in adolescents of families with one Human Immunodeficiency Virus (HIV) positive member. *Journal of Research in Medical Sciences*. 2011; 16(6):741–749. [PubMed: 22091302]
- Kim J, Cicchetti D. Longitudinal trajectories of self-system processes and depressive symptoms among maltreated and nonmaltreated children. *Child Development*. 2006; 77(3):624–639. doi: 10.1111/j.1467-8624.2006.00894.x. [PubMed: 16686792]
- King E, De Silva M, Stein A, Patel V. Interventions for improving the psychosocial well-being of children affected by HIV and AIDS. *Cochrane Database of Systematic Reviews*(2). 2009 doi: 10.1002/14651858.CD006733.pub2.
- Klingman, A. Children and war trauma.. In: Damon, W.; Lerner, RM.; Renninger, KA.; Sigel, IE., editors. *Handbook of child psychology*. Vol. 4. John Wiley & Sons, Inc.; Hoboken, NJ, US: 2006. p. 619-652.
- Kulkarni SJ, Kennedy AC, Lewis CM. Using a risk and resilience framework and feminist theory to guide social work interventions with adolescent mothers. *Families in Society*. 2010; 91(3):217–224. doi: 10.1606/1044-3894.3998.
- Kumakech E, Cantor-Graae E, Maling S, Bajunirwe F. Peer-group support intervention improves the psychosocial well-being of AIDS orphans: Cluster randomized trial. *Social Science and Medicine*. 2009; 68(6):1038–1043. doi: 10.1016/j.socscimed.2008.10.033. [PubMed: 19167144]
- Kuo C, Operario D. Health of adults caring for orphaned children in an HIV-endemic community in South Africa. *AIDS Care*. 2011; 23(9):1128–1135. doi: 10.1080/09540121.2011.554527. [PubMed: 21480009]
- Larsen JK, Vermulst AA, Eisinga R, English T, Gross JJ, Hofman E, Engels RC. Social coping by masking? Parental support and peer victimization as mediators of the relationship between

- depressive symptoms and expressive suppression in adolescents. *Journal of Youth and Adolescence*. 2012; 41(12):1628–1642. [PubMed: 22739935]
- Lester P, Stein JA, Bursch B. Developmental predictors of somatic symptoms in adolescents of parents with HIV: A 12-month follow-up. *Journal of Developmental and Behavioral Pediatrics*. 2003; 24(4):242–250. [PubMed: 12915796]
- Li L, Liang L-J, Ji G, Wu J, Xiao Y. Effect of a Family Intervention on Psychological Outcomes of Children Affected by Parental HIV. *AIDS and behavior*. 2014; 18(11):2051–2058. doi: 10.1007/s10461-014-0744-9. [PubMed: 24643313]
- Li X, Naar-King S, Barnett D, Stanton B, Fang X, Thurston C. A developmental psychopathology framework of the psychosocial needs of children orphaned by HIV. *Journal of the Association of Nurses in AIDS Care*. 2008; 19(2):147–157. doi: 10.1016/j.jana.2007.08.004. [PubMed: 18328965]
- Lin KK, Sandler IN, Ayers TS, Wolchik SA, Luecken LJ. Resilience in parentally bereaved children and adolescents seeking preventive services. *Journal of Clinical Child and Adolescent Psychology*. 2004; 33(4):673–683. doi: 10.1207/s15374424jccp3304_3. [PubMed: 15498735]
- Lin X, Zhao G, Li X, Stanton B, Zhang L, Hong Y, Fang X. Perceived HIV stigma among children in a high HIV-prevalence area in central China: Beyond the parental HIV-related illness and death. *AIDS Care*. 2010; 22(5):545–555. [PubMed: 20397077]
- Little SG, Akin-Little A, Somerville MP. Response to trauma in children: An examination of effective intervention and post-traumatic growth. *School Psychology International*. 2011; 32(5):448–463. doi: Doi 10.1177/0143034311402916.
- Luthar SS, Cicchetti D, Becker B. The construct of resilience: a critical evaluation and guidelines for future work. *Child Development*. 2000; 71(3):543–562. doi: 10.1111/1467-8624.00164. [PubMed: 10953923]
- Makame V, Ani C, Grantham-McGregor S. Psychological well-being of orphans in Dar Es Salaam, Tanzania. *Acta Paediatrica*. 2002; 91(4):459–465. doi: 10.1080/080352502317371724. [PubMed: 12061364]
- Masten AS. Ordinary magic. Resilience processes in development. *American Psychologist*. 2001; 56(3):227–238. doi: 10.1037//0003-066x.56.3.227. [PubMed: 11315249]
- Masten AS. Resilience in children threatened by extreme adversity: Frameworks for research, practice, and translational synergy. *Development and Psychopathology*. 2011; 23(2):493–506. doi: 10.1017/S0954579411000198. [PubMed: 23786691]
- Masten AS, Coatsworth JD. The development of competence in favorable and unfavorable environments. Lessons from research on successful children. *American Psychologist*. 1998; 53(2): 205–220. doi: 10.1037/0003-066x.53.2.205. [PubMed: 9491748]
- Mueller J, Alie C, Jonas B, Brown E, Sherr L. A quasi-experimental evaluation of a community-based art therapy intervention exploring the psychosocial health of children affected by HIV in South Africa. *Tropical Medicine and International Health*. 2011; 16(1):57–66. doi: 10.1111/j.1365-3156.2010.02682.x. [PubMed: 21073640]
- Murphy DA, Marelich WD. Resiliency in young children whose mothers are living with HIV/AIDS. *AIDS Care*. 2008; 20(3):284–291. doi: 10.1080/09540120701660312. [PubMed: 18351474]
- Murphy DA, Marelich WD, Armistead L, Herbeck DM, Payne DL. Anxiety/stress among mothers living with HIV: effects on parenting skills and child outcomes. *AIDS Care*. 2010; 22(12):1449–1458. doi: 10.1080/09540121.2010.487085. [PubMed: 20824552]
- Murphy DA, Marelich WD, Graham J, Payne DL. Children affected by maternal HIV/AIDS: Feasibility and acceptability trial of the Children United with Buddies (CUB) intervention. *Clinical Child Psychology and Psychiatry*. 2015; 20(1):117–133. doi: 10.1177/1359104513499357. [PubMed: 23946295]
- Murphy DA, Roberts KJ, Herbeck DM. Adolescent response to having an HIV- infected mother. *AIDS Care*. 2013; 25(6):715–720. doi: 10.1080/09540121.2013.769495. [PubMed: 23414445]
- Nyamukapa CA, Gregson S, Lopman B, Saito S, Watts HJ, Monasch R, Jukes MCH. HIV-Associated orphanhood and children's psychosocial distress: Theoretical framework tested with data from Zimbabwe. *American Journal of Public Health*. 2008; 98(1):133–141. doi: 10.2105/ajph.2007.116038. [PubMed: 18048777]

- Nyamukapa CA, Gregson S, Wambe M, Mushore P, Lopman B, Mupambireyi Z, Jukes MCH. Causes and consequences of psychological distress among orphans in eastern Zimbabwe. *AIDS Care*. 2010; 22(8):988–996. doi: 10.1080/09540121003615061. [PubMed: 20552465]
- Onuoha FN, Munakata T. Inverse association of natural mentoring relationship with distress mental health in children orphaned by AIDS. *BMC Psychiatry*. 2010; 10 doi: 10.1186/1471-244x-10-6.
- Parker R, Aggleton P. HIV and AIDS-related stigma and discrimination: A conceptual framework and implications for action. *Social Science and Medicine*. 2003; 57(1):13–24. doi: 10.1016/S0277-9536(02)00304-0. [PubMed: 12753813]
- Pelton J, Forehand R. Orphans of the AIDS epidemic: an examination of clinical level problems of children. *Journal of the American Academy of Child and Adolescent Psychiatry*. 2005; 44(6):585–591. doi: 10.1097/01.chi.0000157551.71831.57. [PubMed: 15908841]
- Pienaar A, Swanepoel Z, van Rensburg H, Heunis C. A qualitative exploration of resilience in pre-adolescent AIDS orphans living in a residential care facility. *Journal of Social Aspects of HIV-Aids*. 2011; 8(3):128–137. doi: 10.1080/17290376.2011.9724995.
- Pivnick A, Villegas N. Resilience and risk: Childhood and uncertainty in the AIDS epidemic. *Culture Medicine and Psychiatry*. 2000; 24(1):101–136.
- Rotheram-Borus MJ, Lee M, Lin YY, Lester P. Six-year intervention outcomes for adolescent children of parents with the human immunodeficiency virus. *Archives of Pediatrics and Adolescent Medicine*. 2004; 158(8):742–748. doi: 10.1001/archpedi.158.8.742. [PubMed: 15289245]
- Rotheram-Borus MJ, Stein JA, Lester P. Adolescent adjustment over six years in HIV-affected families. *Journal of Adolescent Health*. 2006; 39(2):174–182. doi: 10.1016/j.jadohealth.2006.02.014 i. [PubMed: 16857528]
- Rotheram-Borus MJ, Weiss R, Alber S, Lester P. Adolescent adjustment before and after HIV-related parental death. *Journal of Consulting and Clinical Psychology*. 2005; 73(2):221–228. doi: 10.1037/0022-006X.73.2.221. [PubMed: 15796629]
- Rutter, M. Protective factors in children's responses to stress and disadvantage.. In: Kent, MW.; Rolf, JE., editors. *Primary prevention of psychopathology* (Vol. 3, *Social competence in children*. University Press of New England; Hanover, NH: 1979. p. 49-74.
- Santrock, JW. *Child Development*. 10 ed.. McGraw Hill; New York: 2004.
- Sherr L, Clucas C, Harding R, Sibley E, Catalan J. HIV and depression—a systematic review of interventions. *Psychology, Health and Medicine*. 2011; 16(5):493–527. doi: 10.1080/13548506.2011.579990.
- Sherr L, Cluver LD, Betancourt TS, Kellerman SE, Richter LM, Desmond C. Evidence of impact: health, psychological and social effects of adult HIV on children. *AIDS*. 2014; 28:S251–S259. doi: 10.1097/qad.0000000000000327. [PubMed: 24991898]
- Sherr L, Mueller J, Varrall R. A systematic review of cognitive development and child human immunodeficiency virus infection. *Psychology, Health & Medicine*. 2009; 14(4):387–404.
- Shiner RL, Masten AS. Childhood personality as a harbinger of competence and resilience in adulthood. *Development and Psychopathology*. 2012; 24(2):507–528. doi: 10.1017/s0954579412000120. [PubMed: 22559127]
- Sikkema KJ, Kochman A, DiFranceisco W, Kelly JA, Hoffmann RG. AIDS-related grief and coping with loss among HIV- positive men and women. *Journal of Behavioral Medicine*. 2003; 26(2): 165–181. doi: 10.1023/A:1023086723137. [PubMed: 12776385]
- Skovdal M. Children caring for their “caregivers”: Exploring the caring arrangements in households affected by AIDS in Western Kenya. *AIDS Care*. 2010; 22(1):96–103. doi: 10.1080/09540120903016537. [PubMed: 20390486]
- Skovdal M, Daniel M. Resilience through participation and coping-enabling social environments: the case of HIV-affected children in sub-Saharan Africa. *African Journal of AIDS Research*. 2012; 11(3):153–164. doi: 10.2989/16085906.2012.734975. [PubMed: 24482634]
- Ssewamala FM, Han CK, Neilands TB. Asset ownership and health and mental health functioning among AIDS-orphaned adolescents: Findings from a randomized clinical trial in rural Uganda. *Social Science and Medicine*. 2009; 69(2):191–198. doi: 10.1016/j.socscimed.2009.05.019. [PubMed: 19520472]
- Sullivan, HS. *The interpersonal theory of psychiatry*. W W Norton & Co.; New York, NY, US: 1953.

- Swendeman D, Rotheram-Borus MJ, Comulada S, Weiss R, Ramos ME. Predictors of HIV-related stigma among young people living with HIV. *Health Psychology*. 2006; 25(4):501–509. doi: 10.1037/0278-6133.25.4.501. [PubMed: 16846325]
- Tarakeshwar N, Hansen NB, Kochman A, Fox A, Sikkema KJ. Resiliency among individuals with childhood sexual abuse and HIV: Perspectives on addressing sexual trauma. *Journal of Traumatic Stress*. 2006; 19(4):449–460. doi: 10.1002/jts.20132. [PubMed: 16929500]
- Thompson, RA. Early attachment and later development: Familiar questions, new answers.. In: Cassidy, J.; Shaver, PR., editors. *Handbook of attachment: Theory, research, and clinical applications*. 2nd ed.. Guilford Press; New York, NY, US: 2008. p. 348-365.
- Ungar M, Ghazinour M, Richter J. Annual Research Review: What is resilience within the social ecology of human development? *Journal of Child Psychology and Psychiatry*. 2013; 54(4):348–366. doi: 10.1111/jcpp.12025. [PubMed: 23215898]
- UNICEF.. [Jan 15, 2013] Statistics by Area/HIV/AIDS. 2015. 2013, from <http://data.unicef.org/hiv-aids/care-support#sthash.El8i5Wnx.dpuf>
- Wang B, Li X, Barnett D, Zhao G, Zhao J, Stanton B. Risk and protective factors for depression symptoms among children affected by HIV/AIDS in rural China: A structural equation modeling analysis. *Social Science and Medicine*. 2012; 74(9):1435–1443. doi: 10.1016/j.socscimed.2012.01.007. [PubMed: 22405505]
- Werner EE. Risk, Resilience, and Recovery - Perspectives from the Kauai Longitudinal-Study. *Development and Psychopathology*. 1993; 5(4):503–515.
- Werner, EE.; Smith, RS. *Vulnerable but invincible: A longitudinal study of resilient children and youth*. McGraw-Hill; New York: 1982.
- Wolmer L, Hamiel D, Barchas JD, Slone M, Laor N. Teacher-delivered resilience-focused intervention in schools with traumatized children following the second Lebanon War. *Journal of Traumatic Stress*. 2011; 24(3):309–316. doi: 10.1002/jts.20638. [PubMed: 21618288]
- Wong ML, Cavanaugh CE, MacLeamy JB, Sojourner-Nelson A, Koopman C. Posttraumatic growth and adverse long-term effects of parental cancer in children. *Families Systems & Health*. 2009; 27(1):53–63. doi: 10.1037/a0014771.
- Wood L, Ntaote GM, Theron L. Supporting Lesotho teachers to develop resilience in the face of the HIV and AIDS pandemic. *Teaching and Teacher Education*. 2012; 28(3):428–439. doi: 10.1016/j.tate.2011.11.009.
- Worden, JW. *Children and grief : when a parent dies*. Guilford; New York; London: 1996.
- Wu L, Li X. Community-based HIV/AIDS interventions to promote psychosocial well-being among people living with HIV/AIDS: a literature review. *Health Psychology & Behavioural Medicine*. 2013; 1(1) doi: 10.1080/21642850.2013.822798.
- Xu T, Wu ZY, Duan S, Han WX, Rou KM. The Situation of Children Affected by HIV/AIDS in Southwest China: Schooling, Physical Health, and Interpersonal Relationships. *Journal of Acquired Immune Deficiency Syndromes*. 2010; 53:S104–S110. [PubMed: 20104100]
- Zautra AJ, Hall JS, Murray KE, the Resilience Solutions Group. Resilience: a new integrative approach to health and mental health research. *Health Psychology Review*. 2008; 2(1):41–64.
- Zayas, L.; Romano, K. Adolescents and parental death from AIDS.. In: Dane, BO.; Levine, C., editors. *AIDS and the new orphans*. Auburn House; Westport, CT: 1994. p. 59-76.
- Zhang L, Li X, Kaljee L, Fang X, Lin X, Zhao G, Hong Y. 'I felt I have grown up as an adult': Caregiving experience of children affected by HIV/AIDS in China. *Child: Care, Health and Development*. 2009; 35(4):542–550.
- Zhao G, Li X, Fang X, Zhao J, Yang H, Stanton B. Care arrangements, grief and psychological problems among children orphaned by AIDS in China. *AIDS Care*. 2007; 19(9):1075–1082. doi: 10.1080/09540120701335220. [PubMed: 18058390]
- Zhao G, Li X, Zhao J, Zhang L, Stanton B. Relative importance of various measures of HIV-related stigma in predicting psychological outcomes among children affected by HIV. *Community Mental Health Journal*. 2012; 48(3):275–283. doi: 10.1007/s10597-011-9424-7. [PubMed: 21681458]

- Zhao Q, Li X, Lin X, Fang X, Zhao G, Zhao J. Knowing kids dying of HIV: A traumatic event for AIDS orphans. *Journal of the Association of Nurses in AIDS Care*. 2009; 20(4):275–282. doi: 10.1016/j.jana.2009.02.005. [PubMed: 19576544]
- Zhao Q, Zhao J, Li X, Fang X, Zhao G, Lin X, Zhang L. Household displacement and health risk behaviors among HIV/AIDS-affected children in rural China. *AIDS Care*. 2011; 23(7):866–872. doi: 10.1080/09540121.2010.540228. [PubMed: 21400311]

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript

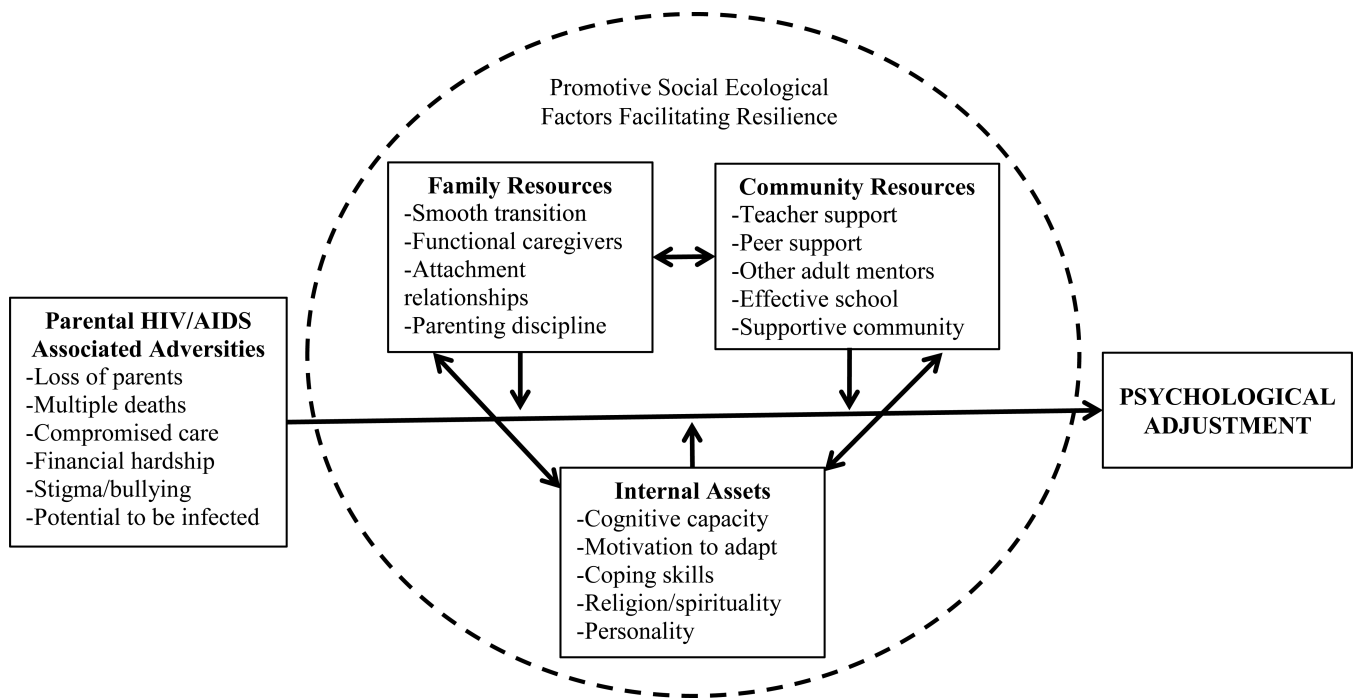


Figure 1. Conceptual Framework of Psychological Resilience among Children affected by HIV/AIDS