ORPHANS OF THE AIDS EPIDEMIC: AN EMPIRICAL EXAMINATION OF THE PSYCHOSOCIAL ADJUSTMENT OF CHILDREN PRIOR TO AND FOLLOWING MATERNAL DEATH RESULTING FROM AIDS

by

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(Under the Direction of Rex Forehand)

ABSTRACT

Orphans of the AIDS epidemic are a growing population in the U.S. but are sorely understudied. The current study is an empirical examination of the psychosocial adjustment of children whose mothers died from AIDS-related illnesses. Orphans were compared to two comparison groups of children from the same high-risk neighborhoods: children whose mothers were living with HIV and children whose mothers were non-infected. Comparisons between groups on child adjustment variables and correlates of child adjustment were examined. Adjustment was evaluated in four areas: internalizing and externalizing problems based on both child and mother/caregiver report, and social and cognitive competence as reported by the mother/caregiver. Assessments were conducted prior to maternal death, and at six months and two years following maternal death. Results indicated that, in general, the orphans were functioning more poorly than the comparison groups at the pre-death and second post-death assessment, while no differences emerged at the first post-death assessment. Furthermore, two between group differences for correlates of child adjustment emerged: both the soon-to-be orphans and their mothers rated their relationship as less positive than the non-infected group, and caregivers endorsed more depressive symptoms at the second post death assessment than the non-infected mothers. Finally, for the orphan group, significant associations emerged between quality of the mother/caregiver relationship and child adjustment at the pre-death and first post-death assessment, and between caregiver depressive symptoms and adjustment of the orphans at both post-death assessments. The results are discussed in terms of the anticipatory grief and delay effect for grief that may operate for these orphans. The clinical implications of the importance of the mother-child relationship prior to death and caregiver adjustment following maternal death as primary targets for intervention also are discussed.

INDEX WORDS: Orphans, AIDS, Child Adjustment, African American

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DEDICATION

I dedicate this dissertation to my mother, Carole. Mom, your unrelenting support and faith in me is what made this achievement possible. You instilled in me the self-confidence, the independence and the perseverance to pursue my goals unwaveringly. Perhaps more importantly, Mom, you gave me the gift of passion – for psychology, for travel, for sports, for friends and family…….for embracing life. Words cannot begin to express how grateful I am …….for all you are to me and for all you have taught me.

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INTRODUCTION

Women are the most rapidly growing new group of AIDS patients in the U.S., and they are being overlooked (Phillips, 1997). One-third of new diagnoses of HIV in 2000 were women, as compared to just over a decade ago when women accounted for approximately 5-10% of new cases (Report on Global HIV/AIDS Epidemic, 2002). The CDC reports that over the past 16 years, the proportion of all AIDS cases reported among adult and adolescent women jumped from 7% in 1985 to 22% in 1995, and has remained relatively stable at 20% for the past six years (CDC, 2002). Previous estimates indicate that over half of women with HIV have children in the home (Schable et al., 1995) and new research utilizing a nationally representative probability sample based on almost 3000 adults with HIV indicate that 60 percent of women with HIV have children and that the majority of these women were African American earning fewer than ten thousand dollars a year (Schuster et al., 2000). In addition, many HIV infected women are single mothers and assume primary or sole caretaking responsibilities for one or more children under the age of 18 (Michaels & Levine, 1992). In one study of women with AIDS, almost all of whom were at the poverty level and unemployed, 76% were single, and half of the women had children living in the home with them (Chu & Diaz, 1993).

The most dramatic increase in rates of HIV-infection has been among minority women. Despite the fact that African American and Hispanic women together represent only 21% of all women in the U.S., they represent 78% of AIDS cases reported to date among women in the U.S. (CDC, 2002) and 82% of the women who became infected by

HIV in the year 2000 (Report on the Global HIV/AIDS Epidemic, 2002). Indeed, the incidence rate of African American women with AIDS is 22 times higher than the incidence for Caucasian women (CDC, 2002). Of particular concern is that AIDS is the leading cause of death for African American women between the ages of 25 and 44 (CDC, 2002), precisely the ages at which women are most likely to have children in the home.

In fact, as of year end 2001, almost 14 million children were orphaned by AIDS worldwide, and this number is expected to jump to 25 million by 2010 (Report on the Global HIV/AIDS Epidemic, 2002). Of the 14 million children orphaned by AIDS, 320,000 reside in the U.S. (Report on the Global HIV/AIDS Epidemic, 2002). The majority of these U.S. children are of minority ethnicity, and most reside in economically disadvantaged communities. Thus, in addition to coping with the plethora of stressors inherent in these orphans' communities of residence (e.g., poverty, crime, discrimination), they are forced to face the emotional and practical aftermath that follows from the death of their mothers. The United Nations Special Session on HIV/AIDS (Report on the Global HIV/AIDS Epidemic, 2002) reported half of all U.S. women with HIV become infected before they turn 25, and often die from AIDS before the age of 35, leaving behind a generation of children to be raised by extended family or are forced to enter the foster care system. Research has shown that orphans from impoverished communities who live with extended family or in foster care are prone to discrimination which includes limited access to health services, education and social services (Report on Global HIV/AIDS Epidemic, 2002). As a result of the combined impact of grieving the loss of a parent, and the myriad psychosocial stressors present in poor, urban communities, the orphans of women who die of AIDS are at great risk for a wide range of behavioral and emotional problems (Family Health Project Research Group, 1998). However, there is a dearth of research that has examined the impact of maternal death due to AIDS on the psychosocial adjustment of children and the factors that influence child adjustment within an AIDS-related orphan population.

The current study is designed to address this gap in the literature by examining factors associated with child adjustment prior to and following maternal death from AIDS. Comparisons will be made among children in the midst of losing their mothers to AIDS, children from the same communities whose mothers are HIV-infected but do not have AIDS, and children whose mothers are not HIV-infected. In addition, factors that are expected to predict adjustment prior to and following maternal death will be examined. The current study is designed to address the following questions: (1) Is there a significant difference in adjustment between children whose mothers are near death from AIDS-related illnesses and either children whose mothers are HIV-infected but are not near death due to an AIDS-related illness or children whose mothers are not HIV-infected? (2) Is there a significant difference between children six months after parental death from AIDS-related illnesses and either children whose mothers have HIV but are not deceased or children whose mothers do not have HIV and are not deceased? (3) Is there a significant difference in adjustment between these same groups of children two years after maternal death? (4) What factors immediately prior to maternal death are associated with concurrent child adjustment? (5) What factors at six months following maternal death are associated with concurrent child adjustment? Because the death of a parent is considered one of the most traumatic events a child can face (Krupnick, 1984), it is important to first consider the general nature of bereavement in children. To this end, literature that examines bereavement in children following parental loss will be reviewed next, followed by a review of literature that addresses parental death due to AIDS.

Overview of child bereavement

Grief reactions in children

Bereavement in childhood is a topic that has had considerable attention in the literature for decades. Indeed, volumes of books have been written that are devoted to the description and explanation of the grieving process in children. Historically, a focus of theoretical debate regarding childhood bereavement is children's developmental ability to understand death and, thus, grieve the loss of a loved one. Some authors contend that grief is only possible in late childhood when the concept of time and the finality of death is understood, while others certify that grief is discernable in children as young as one year (Furman, 1974). Developmental psychologists generally concur that not all children can grasp the finality of death until they reach certain developmental levels in cognitive ability, typically around six years of age (Schaefer & Lyons, 1993). However, research indicates that children as young as three evidence grief-related behavioral problems in comparison to a non-bereaved control group (Kranzler, Shaffer, Wasserman & Davies, 1990).

Because children can vary widely in their understanding of death, it follows that children also vary in their experience and demonstration of grief. In fact, it is well-accepted that grief can look very different in children than it does for adults (Furman, 1974; Krupnick, 1984; Sekaer, 1987). Similar to adults, however, theorists have delineated stages of grief that most children experience. It is the child's ability to successfully navigate these stages that is likely associated with the manner and extent to which a child grieves. Bowlby (1980) describes three stages of grief in children. The first stage, protest, is the child's attempt to deny the death. The second stage is pain, despair, and disorganization. At this stage children may regress to younger behaviors, and the child is likely to feel overwhelmed. The final stage is hope, during which the child begins to reorganize his or her life without the lost person.

In a similar vein, authors have described psychological "tasks" that children must accomplish in order to adapt to the loss of a loved one (Baker, Sedney, & Gross, 1992; Furman, 1974; Worden, 1996). Paralleling Bowlby's stages of grief, Worden (1996) described four tasks for children in grief: accepting the reality of the loss, experiencing the pain or emotional aspects of the death, adjusting to an environment in which the deceased is missing, and relocating the deceased person within one's life by finding ways to memorialize the person. Rather than give up the relationship with the deceased, a child hopefully finds a new and appropriate place for the deceased in their emotional lives (Worden, 1996). Toward that end, Worden's colleagues have published further research that specifically describes how the surviving parents in their sample were best able to assist their bereaved children in accomplishing these tasks. These approaches include helping the child find the language to express their feelings, giving the child mementos of the deceased, and providing the child with opportunities to participate in memorializing activities (Nickman, Silverman, & Normand, 1998). In fact, one study directly evaluated the effect on child adjustment of attending funeral rituals of the deceased parent. Interestingly, at 1 and 6 months following the death, no differences were found between children who attended a visitation versus those who did not. However, approximately 1 year after the death, children who had attended a visitation reported 50 percent fewer symptoms than those who had not (Fristad, Cerel, Goldman, Weller, & Weller, 2001), underscoring the importance of allowing the bereaved child opportunities to memorialize their deceased parent.

It should be noted that although there is general acceptance for stages and tasks of grieving, often there is the erroneous assumption that grief stages are in a fixed sequence through which all children must pass (Dane & Miller, 1992). Rather, stages of grief may overlap, may occur simultaneously, may occur in varying orders, or may not occur at all. Because of children's varying developmental levels, cognitive abilities, cultural backgrounds, and personality characteristics, it has been difficult to demonstrate empirically what the "typical" grief picture is for children. What has been established is that children are capable of a wide range of grief responses and there is no normative grief reaction (Elizur & Kaffman, 1982).

Despite the variability of grief response in children, some consistencies in how children assimilate loss have been established, particularly in how they differ from adults. Children tend to alternate between approaching and avoiding their feelings about the death so as not to be overwhelmed (Krupnick, 1984). For example, children will often be seen playing shortly after hearing about the death of a parent. This "short sadness span" refers to the limits of a child's tolerance for confronting the pain of loss (Siegel & Freund, 1994), rather than a lack of understanding of what has happened. In addition, children manifest grief-related affect and behavior on an intermittent basis for many years following the death (Elizur & Kaffman, 1982; Krupnick, 1984; Siegel & Gorey, 1994).

Because it is often difficult for children to make sense of the death, bereaved children may ask questions that seem callous or insensitive (Schaefer & Lyons, 1993). However, these questions stem from a child's developmental level and provide the opportunity for children to regain some control in the process of grief through achieving a greater understanding of the death. Moreover, children almost inevitably have three primary questions that occur following a loss: whether they somehow caused the death; whether they, too, will die; and concern about who will take care of them (Krupnick, 1984). Although they may not verbalize these questions, they are likely to verbalize questions that they believe will shed light on these issues. Misconceptions by a grieving child are commonplace, and may result in behavioral manifestations of grief that are problematic.

Some emotional and behavioral difficulties are considered normative for a child following a death if the behavioral problems are not extreme or chronic. These include: vegetative symptoms resembling fatigue (e.g., excess sleep, loss of appetite, lethargy), excessive dependency on others, a sense of derealization or depersonalization, panic and anxiety, depressive symptomatology, preoccupation with the deceased, regression toward more juvenile behaviors (e.g., bedwetting), hyperactivity and restlessness, displays of inappropriate or extreme affect, and destructive behavior (Elizur & Kaffman, 1982, 1983; Schaefer & Lyons, 1993; Worden 1996). These behaviors, although concerning, are usually temporary and eventually subside. However, for some children, problematic behaviors such as these do not subside, and this is often due, in part, to specific child and family variables.

Psychosocial adjustment of bereaved children

Several researchers have sought to empirically determine whether bereaved children have poorer adjustment following a death (typically parental) than non-bereaved children, and what child and family variables moderate the relationship between parental death and child adjustment. There are mixed results regarding whether bereaved children function worse following parental death than non-bereaved children. Some researchers have shown that a bereaved group of children was functioning more poorly than a control group of non-bereaved children (Kranzler et al., 1990; Stoppelbein & Greening, 2000; Van Eerdewegh, Bieri, Parrilla, & Clayton, 1982; Worden, 1996), while other studies indicate there is no significant difference in level of functioning between the two groups following parental death (Forehand, Pelton, et al., 1999; Fristad, Jedel, Weller, & Weller, 1993; Mireault & Compas, 1996; Siegel, Karus, & Raveis, 1996). In fact, while most of these studies focus on symptoms of depression and acting out in bereaved children, one study demonstrated that bereaved children exhibited more PTSD symptoms following parental death than a group of children who experienced a natural disaster, indicating that the profound effects of parental loss can manifest in myriad ways (Stoppelbein & Greening, 2000).

Another important difference in the outcome of bereavement studies is the point at which children may exhibit serious adjustment problems. One group of researchers found that a significant difference between the children of terminally ill parents and control children emerged on measures of depression and anxiety prior to the death of the terminally ill parent, but the difference disappeared following parental death (Siegel et al., 1996). These data support the premise that grief for children of terminally ill parents begins well before the death. These findings certainly shed light on the grief process for children when the death is expected, but also underscore the variability in grief reactions of children and the difficulty in concluding whether parental death necessarily results in adjustment difficulties. In a comprehensive review article by Tremblay and Israel (1998), the conclusion was reached that no consistent relation has been shown between death of a parent and child adjustment difficulties. Similarly, Dowdney (2000) also conducted a comprehensive review of the literature and delineated how differences among studies of parentally bereaved children can largely be explained by differences in methodology, including whether the participating children were clinic referred versus a community sample.

However, there is much more to the story. A majority of studies that examined child adjustment following parental death revealed that a considerable proportion of bereaved children were demonstrating significant adjustment difficulties and behavioral problems. What is startling across several studies is that, although as a group bereaved children may not be functioning at a significantly lower level than non-bereaved children, consistently 30-40 percent of the bereaved sample in each study was demonstrating significant problems in at least one area of psychosocial functioning (Elizur & Kaffman, 1982; Kranzler et al., 1990; Mireault & Compas, 1996; Weller, Weller, Fristad & Bowes, 1991; Worden, 1996). This rate is substantially higher than one would expect by chance. Specifically, some studies which did not include a control group (e.g., Gray, 1987) and others that did include a control group (e.g., Fristad et al., 1993; Mireault & Compas, 1996; Stoppelbein & Greening, 2000; Worden, 1996) reported that many of their sample of bereaved children or adolescents were functioning in the clinical range on a standardized assessment measure. Similarly, other studies have shown that the psychosocial functioning of bereaved children was significantly worse following parental death than was their functioning prior to parental death (Elizur & Kaffman, 1982, 1983; Rotheram-Borus, Stein & Lin, 2001).

Furthermore, in a large-scale longitudinal examination of parentally bereaved children, Worden (1996) revealed that the greatest difference in psychosocial adjustment between the bereaved and non-bereaved groups of children did not appear until two years following parental death. In fact, the percentage of risk attributable to the death of a parent doubled between the one and two-year post-death assessments. The delay effect identified by Worden, in addition to the host of studies that have revealed long-term consequences of parental loss that extend into adulthood (e.g., Bifulco, Harris & Brown, 1992; Breier, Kelsoe, Kirwin, Beller, Wolkowitz, & Pickar, 1988; Rotheram-Borus, Stein, & Lin, 2001), lends further evidence that death of a parent in childhood puts a child at considerable risk for short and long-term social and emotional impairment.

Given the fact that the death of a parent represents a psychological insult that threatens children’s psychosocial development (Raveis, Siegel, & Karus, 1999), and that the available data indicate that over one third of bereaved children experience significant adjustment difficulties, the issue that must be addressed is identifying what factors exacerbate grief reactions and what factors serve as buffers.

Numerous child bereavement studies have focused on identifying factors that are associated with child adjustment following parental death. As with the between group analyses of bereaved and non-bereaved children, the results are mixed. However, some consistencies across studies can be delineated. First, the mixed results are often grounded in demographic variables such as age and gender of the child, gender of deceased parent, or whether the death was unexpected. For example, while several studies have found some relationships between age or gender of the child and child adjustment following parental death (e.g., Gray, 1987; Mireault & Compas, 1996; Silverman & Worden, 1993; Stoppelbein & Greening, 2000), many studies have failed to demonstrate such relationships (e.g., Elizur & Kaffman, Raveis et al., 1999), and the relationships that are found are often inconsistent.

In contrast, some variables have been repeatedly shown to impact child adjustment associated with parental death. The most consistent finding is that the functioning of the surviving parent following the death of their spouse is the best predictor of subsequent child adjustment. For example, Worden (1996) found that the most powerful predictor of poor child adjustment following parental death was the surviving caregiver's level of functioning, and that this association remained two years after the loss. Similarly, in a study conducted with a group of children who had experienced paternal loss, Elizur and Kaffman (1983) reported that the mother's psychological functioning and emotional availability were associated with children who demonstrated "pathological bereavement" (defined as severe and persistent behavior problems that impaired every day functioning, including internalizing and externalizing behavior).

The impact of the emotional adjustment of the surviving parent has been found so consistently that both Kranzler et al. (1990) and Stoppelbein and Greening (2000) examined whether parental distress level accounted for the difference between the adjustment of bereaved versus non-bereaved children. Interestingly, Kranzler et al.

(1990) found that the difference disappeared when controlling for the surviving parent's level of depressive symptoms, while Stoppelbein and Greening (2000) found that the difference between groups remained after controlling for parent distress level in the analyses. Thus, it can be argued that the surviving parent's emotional adjustment is the most critical factor in how well a child adjusts to the death of a parent, but that parental death is a profound loss that can have unique effects on child functioning.

A second factor consistently identified as associated with child adjustment after parental death is the relationship between the child and surviving caregiver. Gray (1987) reported that bereaved adolescents who had a good relationship with the surviving parent, particularly prior to the loss, reported significantly fewer depressive symptoms than adolescents reporting a poorer relationship. Christ et al. (1993), in a bereavement study with children of a terminally ill parent, demonstrated that the surviving parent-child relationship is critical, and designed an intervention program aimed at increasing communication between the surviving parent and child. Elizur and Kaffman (1983) also found that the surviving parent-child relationship was the most influential factor in the years following parental loss in determining the duration and severity of child bereavement. Finally, Raveis et al. (1999) found that the most reliable predictor of depressive symptomatology in a group of bereaved children was the child-reported quality of communication with the surviving parent. Because quality of communication is often considered a representation of the parent-child relationship, these results reiterate the important role of the surviving parent-child relationship following parental loss.

Other family variables that studies have shown to be associated with child adjustment following parental loss include the amount and extent of changes that occur in the child's life after the death and the number of concomitant stressors experienced by the family. For example, changes in routines, discipline, and structure in the home, changes in residence and school, and changes in family constellation can have a major impact on how well a child adjusts to the loss (Dowdney, 2000; Krupnick, 1984; Worden, 1996). However, the strength of the relationship between child adjustment following parental death and each of these family variables is not as strong or consistent as those involving the primary caregiver's depressive symptoms and the caregiver-child relationship.

Thus, across studies, the main family variables associated with child adjustment after the loss of a parent, both in the short term and for years following the death, are the surviving caregiver's level of depressive symptoms and the relationship between the caregiver and child. However, in almost all of the bereavement studies delineated, the children were from predominantly upper middle class, Caucasian, two-parent families. While the aforementioned factors that serve as moderators of the relationship between parental death and child adjustment may seem intuitive and, thus, generalizable to children of other socioeconomic groups or ethnicities, this generalization is not justifiable. Clearly, in a family in which a child has likely had relatively few chronic stressors prior to parental death, including being in the care of two parents, being in a family with sufficient income, and being a member of the ethnic majority, the impact of parental death would, on one hand, be very traumatic and salient, but on the other hand, may be better weathered due to the intrinsic supports available. However, this comparison cannot be made because, aside from children who reside in an Israeli kibbutz (Elizur & Kaffman, 1982, 1983) and a study of children whose parents died from AIDS (Rotheram-Borus, Stein, & Lin, 2001) there is virtually no research that examines child bereavement in a sample other than predominantly Caucasian, middle-class, intact families.

Moreover, in the studies conducted both prior to and following parental death due to terminal illness, the primary illness studied was cancer. While losing a parent to cancer is undoubtedly very distressing, losing a parent to an illness such as AIDS introduces an added component that potentially compromises a child's healthy adaptation to loss: stigmatization (Rotheram-Borus, Stein & Lin, 2001). Given that AIDS disproportionately impacts African American women, most of whom are of child bearing age and from economically disadvantaged communities (Michaels & Levine, 1992), the children who are most likely to experience maternal death due to AIDS face a host of additional stressors beyond the grief they experience when their primary, and often only, parent dies. These children represent a very unique group of bereaved children, and the impact of maternal death from AIDS may be very different from the impact of parental death in a Caucasian, middle socioeconomic status sample.

Overview of AIDS-related grief

Children who have lost a parent to AIDS are often kept uninformed of the cause of death, or are often told not to disclose such information to anyone outside the family. This is problematic because talking about the loss is widely considered therapeutic for children who are grieving. The reason children are told not to discuss a parental death from AIDS is because of the social stigma associated with the disease (Dane, 1997; Gray, 1991; Siegel & Gorey, 1994; Wind, 2001). In fact, even within the family, discussion about the illness may be avoided and extended family members may be kept uninformed (Fair, Spencer, Wiener, & Riekert, 1995; Siegel & Gorey, 1994; Zayas & Romano, 1994). This secrecy is motivated by both shame and by a fear of the social consequences of the parent's HIV status being known (Siegel & Gorey, 1994). For example, children may be ostracized at school, and family housing may be jeopardized. Doka (1989) describes the children whose parents have died from AIDS as experiencing disenfranchised grief, or the inability to openly grieve based on the fear and shame that results from stigma. Nicholas and Abrams (1992) report that because of the secrecy that results from the stigma of AIDS, many potential sources of help are not sought. Consequently, the social support that plays such a large role in buffering the stress of a death may not be received. As a result of the inability to discuss the death with others, and the potential ridicule and rejection at school because of stigmatization, children whose parents have died of AIDS become increasingly isolated (Dane, 1997; Dane & Miller, 1992; Geballe & Gruendel, 1998). "Most children, even at young ages, are somewhat aware of the stigma attached to the disease. After the loss of a parent, the child's sense of isolation and feeling of being different are often exacerbated by an awareness of the negative feelings associated with the nature of the death. The child who undergoes these changes will inevitably feel somehow diminished by the experience" (p. 49, Siegel & Freund, 1994).

In addition to the loss of social support, lack of communication leads to child misconceptions about the death, which may cause considerable distress. Children whose parents have died of AIDS may feel an incredible sense of guilt and shame, and may blame themselves (Dane, 1997; Dane & Miller, 1992). Often, children who experienced the death of a parent from AIDS will experience multiple deaths from AIDS, potentially causing compounded distress. Wild (2001) reviewed the available literature on orphans of AIDS and describes common themes of stress-provoking conditions for children of parents with AIDS: being kept uninformed about the AIDS illness, economic deprivation and disrupted schooling, experiencing multiple losses, disturbing and uncertain course of the illness, and lack of adequate care. Several of these stress-provoking conditions are unique to AIDS. Specifically, being kept uninformed about the AIDS illness, and thus not having a clear understanding of the cause of death, is potentially a factor that exacerbates the grief process (Geballe & Gruendel, 1998).

The disclosure of AIDS status by parents to their children has been one focus of the AIDS literature. Several researchers have suggested that disclosure, or lack thereof, contributes to misunderstanding and potential isolation by the child (Siegel & Gorey, 1994). Few empirical studies have been conducted examining this relationship directly. Instead, some studies have considered the level of distress for the infected parent. For example, one study revealed that women with AIDS who had disclosed to their children were less depressed and had more cohesive families than mothers who had not disclosed (Wiener, Battles, & Heilman, 1998). However, this is potentially more a reflection of the nature of the family relationships and communication. Indeed, two studies revealed that disclosure of parental HIV status was not associated with child adjustment (Armistead, Klein, Forehand, & Wierson, 1997; Armistead, Tannenbaum, Forehand, Morse, & Morse, 2001) and, in one of these studies, results revealed that it is the parent-child relationship that was the critical factor associated with child adjustment in families affected by HIV (Armistead et al., 1997). Thus, it appears that it is not necessarily the knowledge of the mother's HIV status, but the mother-child relationship that is the critical component for the psychosocial adjustment of a child whose parent has HIV or AIDS. Indeed, in one of the few empirical studies that examined the psychosocial adjustment of adolescents whose parents had AIDS, revealed that the parent's level of distress prior to death was associated with more internalizing and somaticizing problems experienced by the adolescent (Rotheram-Borus & Stein, 1999). It was suggested that a parent's physical and emotional symptomatology can interfere with the ability to care for and feel close to his or her adolescent and the adolescent's anticipatory grief may have manifested as somatic and internalizing symptoms.

Given that having a parent who is living with HIV or AIDS is in and of itself a major risk factor for experiencing poor psychosocial adjustment (e.g., Forehand et al., 1998; Rotheram-Borus & Stein, 1999), the question is raised whether experiencing parental death from AIDS represents a unique negative impact over and above having a parent with AIDS. Building on the previous study, Rotheram-Borus and her colleagues examined this issue by following the adjustment of a multi-cultural sample of adolescents coping with a parent who was living with HIV/AIDS as well as adolescents who had lost a parent to AIDS (Rotheram-Borus et al., 2001). It was hypothesized that having to adjust to living with a parent who has a chronic and unpredictable illness over time puts a child at high risk for adjustment problems, as would coping with parental death. Thus, it was expected that adolescents in both groups would be negatively affected. Rotheram-Borus et al. found that adolescent adjustment two years after the baseline assessment was more impaired for adolescents who had experienced parental death from AIDS (Rotheram-Borus et al., 2001). Thus, it would appear that experiencing parental death from AIDS leads to greater psychological problems over and above coping with a parent living with AIDS.

In contrast, Forehand et al. (1999) compared a group of African American children from high risk, inner-city neighborhoods who had lost a parent due to AIDS-related illnesses and found that they were not functioning more poorly than a control group of children from the same neighborhood whose mothers were non-infected. However, Forehand et al. did not make comparisons to children whose mothers were living with HIV. Thus, based on the two primary studies that examined the psychosocial adjustment of children and adolescents who lost a parent to AIDS, the results are somewhat contradictory and each in opposition to what was hypothesized. One group found that children who lost a parent to AIDS were functioning more poorly than children living with an HIV-infected parent (Rotheram-Borus et al, 2001) while the other group found that these children were not functioning more poorly than children whose mothers were not infected (Forehand et al, 1999).

Because a majority of the children whose parents die from AIDS are from poor, inner-city communities, there are additional obstacles to coping with parental death. For inner-city children, Dane (1997) and Dane and Miller (1992) describe the difficulties of resolving grief in the face of a paucity of resources and the burden of dealing with multiple crises as a way of life. These children are constantly exposed to negative environmental assaults associated with high-risk environmental factors, and, thus, do not have the resources to meet the crisis of AIDS bereavement.

As stated earlier, concomitant stressors are associated with compromised child adjustment to parental loss (e.g., Worden, 1996). Thus, for the inner-city orphans of the AIDS epidemic, these children are experiencing a large number of risk factors, and are highly vulnerable to adjustment difficulties as was found by Rotheram-Borus and her colleagues (Rotheram-Borus et al., 2001). In addition, these children are also more likely to have uncertain custody arrangements following maternal death (Dane, 1997; Fair et al., 1995; Geballe & Gruendel, 1998; Levine, 1996; Siegel & Gorey, 1994; Taylor-Brown, Teeter, Blackburn, Oinen, & Wedderburn, 1998). Mothers with AIDS from impoverished neighborhoods often fail to make custody arrangements for their children, and this lack of permanancy planning can have adverse consequences. The potential negative ramifications include a move from the home, siblings, school, and friends. Children are typically cared for by extended family members, including grandparents, aunts, and older siblings. However, they may go to foster homes, or they may become wards of the court. In one of the few empirical studies based on orphans of the AIDS epidemic, it was found that legal arrangements for the new caregiver was made in only 35% of the cases, although almost all of the orphans were being cared for by a family member (Forehand et al., 1999). Furthermore, 72% of the children experienced a change in residence following maternal death due to AIDS, and, in some cases, not all the siblings moved with the child (Forehand et al., 1999).

Moreover, once a family member has assumed guardianship for the orphan, government aid to support the orphan is often lacking. Funding that was available to a mother with AIDS to care for her children is typically discontinued following her death (Dane, 1997; Levine, 1996). Frequently, the new caregiver is not in a position to work to support the family given the responsibility of the orphans, as well as the caregiver’s age. Research has shown that the majority of orphans of AIDS are cared for by grandparents who are significantly older than the mothers who are deceased (e.g., Forehand et al., 1999; Joslin & Harrison, 1998, 2002). Data have revealed that these individuals experience a significant number of their own chronic health problems (Joslin & Harrison, 2002) which interferes with their ability to work as well as affect their ability to care for the orphans. With the added responsibility of caring for young children, these 'hidden patients' are more likely to neglect their own emotional and health needs which ultimately may render them unable to care for the orphans (Joslin & Harrison, 1998, 2002).

Taken together, the orphans of the AIDS epidemic who are forced to cope with multiple changes and transitions while grieving the loss of their mothers, in conjunction with the caregivers who also are grieving and are at a large risk for severe emotional and health problems, creates an environment that could severely exacerbate the orphans' adjustment to maternal loss.

Because of the unique challenges facing both orphan and caregiver, the caregiver-child relationship is at risk for being troubled or may not be very well-established, both of which could potentially exacerbate the child's functioning, paralleling the bereavement literature with the surviving parent in higher SES, Caucasian children. In contrast, the relationship between the bereaved child and new caregiver may be long-standing and positive such that the new caregiver is a well-known relative, and likely was caring for the child during the terminal phase of the mother's illness. Thus, this relationship may have served as a valuable buffer during the terminal phase and following the death.

In sum, there are myriad stressors inherent in the lives of orphans of the AIDS epidemic. Because these children experience a much different world than the children typically studied in the bereavement literature, it is of utmost importance to empirically identify and examine the factors that most likely exacerbate the grief process, or, alternatively, serve as buffers as a child copes with the loss of a parent due to AIDS. It is important to ascertain whether the death of a parent does represent a unique challenge to child adjustment over and above having a parent living with HIV/AIDS. Furthermore, orphans of the AIDS epidemic represent a unique and understudied population, and a population that is increasing in number. Indeed, several researchers have noted the lack of empirical studies with orphans of the AIDS epidemic and emphasize the great need for more empirical research with this population (Dane, 1997; Fair et al., 1995; Gardner & Preator, 1996; Geballe & Gruendel, 1998; Levine, 1996; van den Boom, 1995; Wild, 2001). The few studies that do exist, while valuable, leave gaps that the current study is designed to address. Specifically, Rotheram-Borus et al. (2001) revealed that children whose parents died from AIDS were functioning more poorly two years after the baseline assessment than they were functioning at baseline. However, no control group was used for comparison, and time since parental death was not controlled for in the analyses. That is, parental deaths from AIDS occurred at various times during the two year course of the project, and, thus, the two year assessment could have occurred a few months to almost two years after parental death, confounding whether these results are truly 'long-term' effects of parental loss. In contrast, Forehand et al. (1999) compared a group of orphans to a control group of children and looked at adjustment 6 months following death, but did not examine the potential anticipatory grief before death (e.g., Siegel et al., 1996) or delay effect two years after death (e.g., Worden, 1996). Furthermore, neither study evaluated whether factors that are typically considered to be associated with the psychosocial adjustment of bereaved children apply to orphans of the AIDS epidemic. Thus, the current study not only evaluates whether orphans differ from two groups of control children (children whose mothers are living with HIV and children whose mothers are non-infected) and makes these evaluations before and at two points after maternal loss, but the role of family variables in the grief process for these children also is examined as it is a first step toward intervening with these families to promote positive child adaptation to the loss.

Hypotheses

The first purpose of the present study was to determine whether children whose mothers are in the terminal phase of an AIDS-related illness are functioning more poorly than two comparison groups: children whose mothers are infected with HIV but are not in a terminal phase of illness, and children whose mothers are not infected with HIV. It was hypothesized that children of mothers dying from AIDS would be functioning worse than either control group on mother and child-report measures of internalizing behavior problems, externalizing behavior problems, social competence and cognitive competence. This hypothesis is based on research by Siegel et al., (1996) who found evidence that children whose parents were dying demonstrated more adjustment problems than a control group of children, and Rotheram-Borus and Stein (1999) who found that, among adolescents with a parent with AIDS, those adolescents with parents who were experiencing more health problems were functioning worse than children whose parents were not symptomatic. The differences between groups are examined in two ways: by comparing group means and by comparing the percentage of children in each group who are in the clinical range on standardized assessment measures for internalizing and externalizing problems.

The second purpose of the present study was to determine whether a significant difference in child psychosocial adjustment exists between the orphan group and each of the comparison groups six months following maternal death from AIDS. It was hypothesized that, in comparison to the non-infected control group, the orphan group would be functioning at a lower level on child and caregiver report of each measure of adjustment: internalizing behavior, externalizing behavior, social competence and cognitive competence. Although one study found no differences in adjustment of children who lost a mother to AIDS compared to children whose mothers were non-infected (i.e., Forehand et al., 1999), the results may be largely explained by the stressful environment in which both groups of children resided. However, several studies have found differences in adjustment following parental death, including when the bereaved children were compared to children coping with other major stressors (e.g., Stoppelbeing & Greening, 2000). It also was hypothesized that the orphan group would be functioning more poorly than the HIV-infected group, based on findings by Rotheram-Borus et al. (2001) that adolescents who experienced the death of a parent from AIDS was associated with more adjustment problems than having a parent living with AIDS. Again, differences between the orphan and control groups were examined in two ways: by comparing group means and by comparing the proportion of children in each group that are in the clinical range on standardized measures of internalizing and externalizing problems.

The third purpose of the present study was to determine whether a significant difference in psychosocial adjustment exists between the orphan group and each of the control groups at two years following maternal death. Based on Worden's (1996) argument that there is often a two-year delay effect for adjustment difficulties in bereaved children, and based on Rotheram-Borus et al.'s (2001) findings that two years following the baseline assessment, children who experienced parental death from AIDS were functioning worse than children whose parents had AIDS but had not died, it is hypothesized that, in comparison to the non-infected and HIV-infected control groups, the orphan group would be functioning at a lower level on child and caregiver report on each adjustment measure. Again, differences between groups were examined both by comparing group means and by comparing proportion of children in each group that are in the clinical range on standardized measures of internalizing and externalizing behavior problems.

The fourth purpose was to examine specific family variables that were hypothesized to be associated with the psychosocial adjustment of children who were going to be orphaned by AIDS. For these analyses, the to-be-orphaned group was of primary interest. In each analysis the following child adjustment factors, based on both mother and child report, were examined: internalizing, externalizing, social and cognitive competence. Based on relevant studies of children with terminally ill parents that revealed the adjustment of the dying parent and the relationship between that parent and child are important variables for child adjustment (e.g., Krupnick, 1984), it was hypothesized that 1) higher levels of maternal depressive symptomatology prior to her death are associated with greater adjustment problems by the child concurrently, and 2) lower ratings of the mother-child relationship, based on mother and child report, are associated with greater adjustment problems by the child concurrently.

To address the fifth purpose of the present study, which is to examine factors associated with child psychosocial adjustment six months following maternal death from

AIDS, it is hypothesized that 1) higher levels of depressive symptomatology by the caregiver at six months following maternal death are associated with greater child adjustment problems, and 2) the poorer the caregiver-child relationship is, the more child adjustment difficulties will exist. These variables were selected based on the vast majority of child bereavement research which indicates that the surviving parent's depressive symptoms and the relationship between the child and surviving parent are the strongest predictors of child adjustment (e.g., Worden, 1996).

Two points are worthy of mention. First, the to-be-orphaned group/orphaned group are of primary interest in purposes four and five, respectively. The purpose of these analyses is to examine if parent/caregiver depressive symptoms and the parent-/caregiver-child relationship are related to child psychosocial adjustment for this group of children. However, in order to examine whether the relationship between mother/caregiver depressive symptoms and child adjustment, and the relationship between relationship quality and child adjustment is unique to children whose mothers have died from AIDS, "exploratory analyses" were conducted to compare the magnitude of the relationships for the orphan group with both control groups. Second, an hypothesis about the relationship of caregiver depressive symptoms and caregiver-child relationship to child psychosocial adjustment at two years after maternal death is not proposed because of lack of sufficient power (i.e., number of participants) to formally test the hypothesis. However, "exploratory analyses" were conducted at two years after maternal death examining the relationship between these two variables and child psychosocial adjustment.

METHOD

Participants

Participants were drawn from 100 HIV-infected women and one of their non-infected 6-to-11-year-old children and 149 women who did not self-identify as being HIV infected and one of their 6-to-11-year-old children who also was not infected. All participants are African American, were recruited from the inner-city area of New Orleans, and participate in the Family Health Project (1998). The majority of participants live in government housing projects, which are characterized by overcrowding, high levels of poverty, and crime.

In order to be eligible to participate, mothers originally had to be 18 to 45 years of age. In addition, mothers had to have at least one biological child between the ages of 6 and 11 years who is not HIV-infected and who is residing with them. Target children were required to be enrolled in age-appropriate regular classes (i.e., not special education). At recruitment, women in the HIV-infected group had to have CD4 counts below 600 (indicating a relatively advanced stage of infection) and must have reported not having used intravenous drugs in at least the past six months.

After an initial assessment, the women and their children were followed for approximately four years. Over that time period, 35 of the HIV-infected women died from AIDS-related illnesses. The participating child of these women was eligible for inclusion in the sample. The 35 children whose mothers were deceased due to AIDS-related illnesses constitute a group henceforth labeled as the Orphan Group. However, for the two assessments following maternal death, not all orphans and their caregivers participated. Thus, for the first post-death assessment that took place approximately 6 months following maternal death, 23 orphans and their caregivers participated. At the second post-death assessment, approximately 2 years following maternal death, 15 orphans and their caregivers participated.

Two comparison samples (labeled “HIV-infected” and “Non-infected” henceforth) were selected from among the children of HIV-infected mothers who were not deceased and non-infected mothers, respectively. The samples were selected so that child age, child gender, and maternal age, income, education and marital status were similar for the three groups based on the demographics of the Orphan group at the pre-death assessment. Furthermore, one control participant was selected for each Orphan Group participant, resulting in a sample size of 35 in each control group at the pre-death assessment, 23 in each control group at the first post-death assessment, and 15 per group in the second post-death assessment. The 23 and 15 control participants in each control group were selected from the original 35 participants in each control group based on demographic data from the pre-death assessment. In this way, the control groups remained equal with the Orphan group for demographics from the first assessment, with the opportunity to evaluate the natural change in demographics (i.e., residence, caregiver) for the orphan group in comparison to the control groups following maternal death (presented in the Results section). Pre-death demographic information by group at each assessment is presented in Table 1. As expected, there were no differences between the Orphan group and either control group. CD4 counts are included in this table with an

Table 1.
Demographic characteristics for the Orphan, HIV-infected control group and Non-infected control group at pre-death, 6 months, and 2 years following maternal death.

Pre-death Assessment

Demographic Variable	(1) Pre-Orphan (n = 35)	(2) HIV+ (n = 35)	(3) HIV- (n = 35)	(1) vs (2)	(1) vs (3)
Child Age	x = 10.41 (SD = 2.02)	x = 10.43 (SD = 1.70)	x = 10.14 (SD = 1.56)	t = .45, n.s.	t = .57, n.s.
Child Gender	male = 14 female = 21	male = 15 female = 20	male = 14 female = 21	X^2 = .23, n.s.	X^2 = 0, n.s.
Maternal Age	x = 38.1 (SD = 6.1)	x = 38.5 (SD = 6.2)	x = 40.6 (SD = 7.2)	t = .30, n.s.	t = 1.6, n.s.
Maternal Marital Status	not married=29 married = 6	not married=30 married = 5	not married=28 married = 7	X^2 = .47, n.s.	X^2 =.09, n.s
Maternal Education	< HS = 13 HS/GED = 13 >HS = 9	< HS = 12 HS/GED = 10 >HS = 13	< HS = 13 HS/GED = 14 > HS = 8	X^2= .64, n.s.	X^2=.10, n.s.
Family Income (Monthly)	x = $856 (SD = $1347)	x = $772 (SD = $407)	x = $878 (SD = $626)	t = .08, n.s.	t = .11, n.s.
CD4 count`	x = 94.45 (SD = 121.85)	x = 381.85 (SD = 160.55)		t = 8.19, $p < .000$	

Post-Death Assessment 1

Demographic Variable	(1) Orphan (n = 23)	(2) HIV+ (n = 23)	(3) HIV- (n = 23)	(1) vs (2)	(1) vs (3)
Child Age	x = 10.41 (SD = 2.02)	x = 10.43 (SD = 1.70)	x = 10.14 (SD = 1.56)	t =.27, n.s.	t = .09, n.s.
Child Gender	male = 14 female = 21	male = 15 female = 20	male = 14 female = 21	X^2 =.09, n.s.	X^2 = 0, n.s.
Maternal Age	x = 38.1 (SD = 6.1)	x = 38.5 (SD = 6.2)	x = 40.6 (SD = 7.2)	t = .09, n.s.	t = 1.02, n.s.
Maternal Marital Status	not married=29 married = 6	not married=30 married = 5	not married=28 married = 7	X^2 =.17, n.s.	X^2 = .14, n.s.
Maternal Education	< HS = 13 HS/GED = 13 >HS = 9	< HS = 12 HS/GED = 10 >HS = 13	< HS = 13 HS/GED = 14 > HS = 8	X^2 = .16, n.s.	X^2 =.17, n.s.
Family Income (Monthly)	x = $856 (SD = $1347)	x = $772 (SD = $407)	x = $878 (SD = $626)	t = .60, n.s.	t = .15, n.s.

Post-Death Assessment 2

Demographic Variable	(1) Orphan (n = 15)	(2) HIV+ (n = 15)	(3) HIV- (n = 15)	(1) vs (2)	(1) vs (3)
Child Age	x = 9.65 (SD = 1.41)	x = 10.16 (SD = 2.09)	x = 9.64 (SD = 1.50)	t = .78, n.s.	t = .03, n.s.
Child Gender	male = 7 female = 8	male = 7 female = 8	male = 7 female = 8	X^2 = 0, n.s.	X^2 = 0, n.s.
Maternal Age	x = 39.2 (SD = 7.0)	x = 39.0 (SD = 4.5)	x = 40.1 (SD = 8.0)	t = .14, n.s.	t = .32, n.s.
Maternal Marital Status	not married=12 married = 3	not married=13 married = 2	not married=12 married = 3	X^2 = .24, n.s.	X^2 =.0, n.s
Maternal Education	< HS = 6 HS/GED = 8 >HS = 1	< HS = 5 HS/GED = 8 >HS = 2	< HS = 6 HS/GED = 8 > HS = 1	X^2= .42, n.s.	X^2=.0, n.s.
Family Income (Monthly)	x = $1058 (SD = $1800)	x = $819 (SD = $360)	x = $812 (SD = $488)	t = .48, n.s.	t = .49, n.s.

expected difference between mothers who are near death due to AIDS-related illness and the mothers in the HIV-infected group who are not near death.

Furthermore, reasons for the decreases in sample size should be delineated. From the pre-death to first post-death assessment, four participants refused, six were unable to be located, one orphan moved out of state, and one went to state custody and could not be located. Of the 23 who participated in the first post-death assessment, eight did not participate in the second post-death assessment for the following reasons: two orphans could not be located, three caregivers refused participation, and for three participants, the project ended prior to the two year timeline following maternal death.

Recruitment

Participants in the HIV-infected group were recruited across two years from the primary public HIV clinic in the city of New Orleans (93%) and the private practices of physicians treating HIV-infected females (7%). At a regularly scheduled checkup, women who met the inclusion requirements were approached by a project staff member who explained the study, confirmed eligibility, and scheduled a data collection session.

A stratified random sample of non-infected women and their children were drawn from the zip code areas in which the HIV-infected sample resided. The non-infected sample was stratified on the basis of school attended, gender of child, and age of child, and were drawn in two equal waves spanning two school years. Mother-child dyads were recruited through five of the six public schools serving the targeted zip code areas. In each of the two waves, letters describing the study and inviting participation were sent home to 30 African American mothers randomly selected by school personnel at each school. The women were asked to return a card indicating their interest in participating in the project. In each wave, the first 15 women at each school to return a reply card constituted the sample. Women in this group identified themselves as non-infected in the first interview.

Measures

In order to utilize measures that are culturally sensitive and appropriate for the target population, a number of steps were undertaken. These included the use of focus groups and piloting measures with demographically similar individuals. Additionally, instruments developed or modified for use in the current study were subjected to exploratory factor analyses. The number of factors was determined by examination of both eigenvalues and scree plots. Items loading .40 or higher were retained for each factor. Original, unmodified instruments not previously used with a sample similar to the current study were subjected to confirmatory factor analysis with items loading .40 and higher being retained for use. For instruments with standardization data with samples similar to the current one, only an alpha coefficient was calculated. Only instruments with an alpha coefficient of .60 or higher will be retained for use in this study.

Demographic Information. Demographic information (e.g., age and gender of child, age of mother or caregiver) was obtained from the mother and caregiver. For HIV-infected mothers, information regarding health status (e.g., CD4 counts and number of opportunistic diseases) was obtained through medical chart review.

Mother/Caregiver Depressive Symptoms. Mother and caregiver depressive symptoms were based on the Brief Symptom Inventory (BSI: Derogatis & Spencer, 1982). The BSI is a 53-item inventory that was developed as a global measure of psychological symptomatology. Adequate reliability, with test-retest coefficients ranging from .68 to .91, and validity data have been presented (Derogatis, Rickels, & Rock, 1976; Kremer & Atkinson, 1981). For the purposes of the present study, only the Depression subscale was utilized. The internal consistency (.85) and test-retest reliability (.84) of this scale have been shown to be adequate and to have adequate discriminant and convergent validity data (see Derogatis & Spencer, 1982). Each item is rated on a 4-point Likert scale ranging from 0 (*not at all*) to 3 (*extremely*). This scale represents a modification of the standard BSI, on which individuals rate the items on a 5-point Likert scale. Alpha coefficient for the present study was .97

Relationship Quality with Mother/Caregiver. Mothers, caregivers and children will complete the short form of the Interaction Behavior Questionnaire (IBQ: Prinz, Kent, & O'Leary, 1979). The IBQ assesses quality of the mother/caregiver-child relationship (e.g., "You enjoy spending time with your mom/caregiver," "You think your mom and you get along very well"). Each item is rated as true or false. Items were scored so that higher scores indicate better relationship quality. Adequate internal consistency and discriminate validity have been reported (Prinz et al., 1979; Robin & Weiss, 1980). For the current sample, confirmatory factor analysis for the mother, caregiver, and child-completed IBQ were conducted. Children in the Control Groups completed the IBQ on their relationship with their mother at the pre-death and both post-death assessments, whereas children in the Orphan Group completed the measure on their relationship with their mother at pre-death and their female caregiver at both assessments after the mother's death. Alpha coefficients for mother/caregiver report and child report were .89 and .72, respectively.

Child Psychosocial Adjustment. Four areas of child psychosocial adjustment were examined: externalizing problems, internalizing problems, social competence and cognitive competence.

Externalizing Problems. As a self-report indicator of externalizing problems, the child will complete the Aggressive Behavior Subscale from the Youth Self-Report of the CBCL (Achenbach, 1991). This subscale, selected because it assesses the type of externalizing problems displayed by 6-to-11-year old children, has acceptable reliability and validity data (Achenbach, 1991); however, it has not been standardized with 6-to-11-year old children. Consequently, a confirmatory factor analysis was conducted specifying one factor. Scores can range from 0 to 32 with higher scores indicating higher levels of self-reported externalizing problems. The alpha coefficient with the current sample was .83.

Mothers and caregivers completed the Child Behavior Checklist (CBCL; Achenbach, 1991a), a 113-item instrument that yields indexes of internalizing and externalizing behavior problems. Each item describes a problem behavior and is rated on a 3-point scale for the target child: 0 (*Not true*), 1 (*Sometimes or Somewhat True*), and 2 (*Very or Often True*). Achenbach (1991a) reported mean test-retest reliability of .87 and evidence for content and criterion-related validity with samples similar to the current one. As recommended by Achenbach (1991a), raw scores were converted to T scores (Mean= 50, SD= 10), which can range from 30 to 100, with higher scores indicating more behavior problems. The alpha coefficient for the present study was .90.

Internalizing Problems. Children completed the Children's Depression Inventory (CDI; Kovacs, 1981) as an indicator of internalizing problems. The CDI is a 27-item questionnaire that allows the child to select the “best description” of him/herself from among three alternatives that reflect varying degrees of a particular depressive symptom. Standardization data are available for children ranging in age from 7 to 17, and adequate reliability and validity data have been reported with ethnically diverse samples, including ones similar to the current sample (e.g., Fitzpatrick, 1993). Scores can range from 0 to 54, with higher scores indicating more depression. The alpha coefficient for the current sample was .79.

The internalizing problems subscale of the CBCL was used as a mother and caregiver reported proxy for child internalizing problems. The alpha coefficient for the present study was .84.

Cognitive and Social Competence. The Perceived Competence Scale for Children (PCSC; Harter, 1982) and the Parent’s Rating Scale of Child’s Actual Competencies (PRS; Harter, 1982) were administered to the children and the mothers/caregivers, respectively, to assess child and mother/caregiver perceptions of child competence (i.e., cognitive & social competence). The PCSC assesses a child’s perception of her or his competence in several areas, whereas the PRS assesses parents’ perception of their child’s competence in the same areas. Two subscales of each instrument were of interest: cognitive and social competence. Internal consistency has been found to range from .93 to .96. Additionally, test-retest reliability after three months in one sample ranged from .70 to .87 (Harter, 1982). Because the PCSC and PRS have not been used with samples similar to the one in the present study, confirmatory factor analyses, specifying one factor, were performed separately on the child-reported PSCS Cognitive subscale and on the PSCS Social subscale. In addition, factor analysis also was performed for the mother/caregiver report of each subscale, Cognitive and Social. Alpha coefficients indicated poor internal consistency for the child-completed PSCS for both the Cognitive and Social subscales (alpha coefficients below .60). As a result, competence as a measure of child adjustment was based solely on mother or caregiver report in the analyses. Alpha coefficients for the mother/caregiver report of Cognitive and Social competence were .87 and .78, respectively.

Procedure

Once the woman and her child agreed to participate, a data collection session was scheduled. In order to hold constant the impact the child's attendance at school might have on the interaction patterns between mother/caregiver and child, sessions for both groups of families were conducted while the child's school was in session (e.g., not during summer or Christmas breaks). Assessments occurred at the child's school or in a medical setting. When necessary, a taxicab was provided for transportation. Upon arrival at the first assessment, the mother and child were consented and reassured of confidentiality. Subsequently, the mother and child were separately administered the sociological interview during which demographic information was obtained. Participants receive $50 per dyad as compensation.

A second interview followed the first interview within a window of time from 2 days to 2 weeks. The purpose of this interview was to gain information regarding the psychosocial functioning of each woman and her child. This interview lasted approximately two-hours for women and one-hour for children. Participants again received $50 in compensation for their time and effort.

Within each session, all materials were administered verbally to participants. In addition, for the second interview, cue cards were used. These cue cards contained the descriptors (e.g., “not true,” “sometimes true,” and “often true”), their corresponding numeric values (e.g., 0, 1, or 2), and pictorial representations of the descriptors (e.g., thermometers with various portions shaded).

Subsequent regular assessments were scheduled approximately 13 months after the first assessment, approximately 19 months after the second assessment, and approximately 15 months after the third assessment. However, death of an HIV-infected mother, which is tracked through the public HIV clinic and through newspaper obituaries, changed the scheduling of appointments. When a mother died, a contact person previously designated by the mother is contacted and, through this individual, the child is located. The caregiver was contacted approximately six months after the mother’s death, informed that the mother and child were participating in the project, and asked to participate with the child. The same assessment procedures that were used with the mother and child, including compensation for participants, were used with the caregiver and child. A 6 month interval between the mother’s death and the interview was selected in order to allow for an initial adjustment to the mother’s death and to the new living situation. For the orphan group, the mean interval from the pre-death assessment to maternal death was 8.69 months (SD = 5.45). A third assessment also was conducted with the Orphan Group and their caregivers which occurred approximately 18 months following the second assessment. Thus, the third assessment for the Orphan Group was two years after maternal death.

In order to examine if the mean length of time between the initial assessment and last assessment was equivalent across groups, time in months was calculated for each group. The mean interval was 32 months for the orphan group, as compared to 33 and 34.5 months for the HIV-infected group and non-infected group, respectively. No significant difference in length of interval between the orphan group and each control group emerged (orphan group vs. HIV-infected group, $t = .37$, n.s.; orphan group vs. non-infected group, $t = 1.16$, n.s.).

RESULTS

Overview and Preliminary Analyses

For each of the primary analyses, four areas of child adjustment were utilized: internalizing problems, externalizing problems, social competence and cognitive competence. Because internal reliability for child report of social and cognitive competence was insufficient, only mother/caregiver report of social and cognitive competence was included in the analyses. Furthermore, correlations between child report and mother or caregiver report were calculated for child internalizing and externalizing behavior in order to determine whether these measures could be aggregated to form a single construct. Results from these correlations are presented in Table 2. As Table 2 indicates, the correlations between child and mother or caregiver report were generally poor at each assessment. Thus, child and adult report of internalizing and externalizing problems are considered separately in all subsequent analyses.

Next, demographic variables were examined for the orphan group as compared to both control groups at each post-death assessment. Demographic data for each assessment, based on the pre-death assessment data, was described in the Method section to demonstrate equality between groups for analyses. However, as many of the orphans experienced demographic changes following maternal death (e.g., family income), it is important to depict how their demographics changed for each post-death assessment. These data are presented in Table 3. T-tests and chi square analyses were conducted

Table 2.
Correlations between mother/caregiver report and child report of externalizing and internalizing problems.

	Externalizing	Internalizing
Pre-death Assessment	r = .07	r = .09
Post-death Assessment 1	r = .16	r = -.11
Post-death Assessment 2	r = .07	r = .25

Table 3.
Demographic characteristics of Orphans before mother's death and at 6 months and 2 years following maternal death.

Demographic Variable	(1) Pre-death (n = 35)	(2) 6 months Post-death (n = 23)	(3) 2 years Post-death (n = 15)	(1) v (2)	(1) v (3)
Child Age	x = 10.41 (SD = 2.02)	x = 11.22 (SD = 1.85)	x = 12.57 (SD = 1.49)		
Mother/ Caregiver Age	x = 38.1 (SD = 6.1)	x = 50.19 (SD = 12.96)	x = 53.77 (SD = 13.23)	t = 25.55**	t = 19.76**
Mother/Caregiver Marital Status	not married= 29 married = 6	not married= 14 married = 9	not married = 10 married = 5	$X^2 = 3.5$	$X^2 = 1.6$
Mother/Caregiver 3.19 Education	< HS = 13 HS/GED = 13 >HS = 9	< HS = 9 HS/GED = 9 >HS = 5	< HS = 9 HS/GED = 5 > HS = 1	$X^2 = .12$	$X^2 =$
Family Income (Monthly)	x = \$856 (SD = \$1347)	x = \$1135 (SD = \$603)	x = \$996 (SD = \$315)	t = .91	t = .37

** p < .001

separately to determine if significant differences existed for maternal/caregiver age, income, education, or marital status between pre-death and each post-death assessment. The only significant difference that emerged was for age of new caregiver as compared to age of mother before death.

In addition, to ensure that child demographics do not play a role in the outcome variables of interest (i.e., internalizing and externalizing problems), t-tests were conducted to evaluate whether differences emerged between boys and girls in child adjustment at each assessment. No gender differences emerged for either mother/caregiver or child report of adjustment. Similarly, correlations were conducted at each assessment to evaluate whether child adjustment was associated with child age based on both child and mother/caregiver report. No significant correlations between child adjustment and child age emerged.

Hypothesis 1: The pre-orphan group will be functioning more poorly than either Control Group prior to maternal death based on mother and child report of internalizing and externalizing behavior problems, and mother report of social and cognitive competence.

To evaluate the first hypothesis, two sets of analyses were conducted: t-tests and chi squares. First, t-tests were conducted separately between the pre-orphan group and the HIV-infected group, and between the pre-orphan group and the non-infected group on each of the child adjustment variables. While a one-way MANOVA is typically the test of choice for such an analysis, the small sample size in the present study would not allow for enough power to detect differences across three groups. Thus, t-tests were conducted to evaluate each of the control groups against the orphan group utilizing Dunnett's approach to control for family-wise (Type I) error (Howell, 1992).

Results of Dunnett's t-tests are presented in Table 4. Significant differences emerged between the orphan group and one of the control groups for three comparisons. Based on maternal report, the orphan group was exhibiting more externalizing behavior than both the HIV-infected and non-infected control groups, and the orphan group's level of social competence was significantly lower than the children in the non-infected control group. Although not reported in Table 4, it should be noted that the HIV-infected control group did not differ from the non-infected control groups in any analyses.

The second way Hypothesis 1 was tested was by utilizing chi square analyses on a standardized measure of child internalizing and externalizing behavior problems. The percentage of children who were rated by their mothers to be in the clinical range for internalizing and externalizing problems was compared to the percentage of children who were not rated in the clinical range. Because the children in the pre-orphan group were experiencing the imminent death of their mothers, it was hypothesized that a significantly larger proportion of children in the pre-orphan group would fall in the clinical range for both internalizing and externalizing problems than either of the control groups. Consistent with the t-test analyses presented previously, the orphan group was evaluated against the two control groups separately. Results are presented in Table 5. As expected, a significantly larger proportion of the pre-orphan group was rated in the clinical range for internalizing and externalizing problems than the non-infected group. No significant differences emerged between the pre-orphan group and HIV-infected group although there was a larger proportion of pre-orphans in the clinical range for behavior problems than the HIV-infected group. Although not reported in Table 5, chi square analyses indicated that the HIV-infected group did not differ from the non-infected group.

Table 4.
Means, Standard Deviations, and results of t-tests comparing orphans with HIV-infected controls and non-infected controls at pre-death assessment.

Child Adjustment: **Mother Report**	(1) Pre-Orphan	(2) HIV+	(3) HIV-	(1) vs. (2) t-test value	(1) vs. (3) t-test value
Externalizing Problems	63.20 (11.22)	58.63 (11.94)	58.46 (11.64)	-1.67*	-1.71*
Internalizing Problems	63.36 (12.98)	63.04 (11.82)	59.41 (9.76)	-.11	-1.44
Social Competence	16.07 (3.72)	16.43 (3.14)	17.37 (2.30)	.43	1.76*
Cognitive Competence	12.77 (3.0)	12.43 (2.9)	13.31 (2.3)	-.48	.85
Child Report					
Externalizing Problems	7.71 (8.20)	8.38 (6.83)	6.91 (5.15)	.37	-.49
Internalizing Problems	7.83 (6.5)	8.43 (6.5)	7.09 (6.7)	.39	-.51

Means, Standard Deviations, and results of t-tests comparing orphans with HIV+ and HIV- controls at first post-death assessment.

Child Adjustment: **Mother Report**	(1) Orphan	(2) HIV+	(3) HIV-	(1) vs. (2) t-test value	(1) vs. (3) t-test value
Externalizing Problems	59.54 (11.38)	59.81 (13.13)	57.12 (11.70)	.07	-.71
Internalizing Problems	64.45 (14.97)	60.27 (11.80)	60.17 (11.55)	-1.05	-1.09
Social Competence	16.29 (2.67)	16.74 (2.00)	15.96 (2.03)	.64	-.46
Cognitive Competence	13.30 (1.92)	13.30 (2.34)	13.00 (2.59)	.00	-.45
Child Report					
Externalizing Problems	5.78 (5.21)	4.52 (3.29)	4.77 (4.52)	-.98	-.69
Internalizing Problems	7.74 (4.79)	8.22 (5.33)	6.74 (4.26)	.32	-.75

Means, Standard Deviations, and results of t-tests comparing orphans with HIV+ and HIV- controls at second post-death assessment.

Child Adjustment: **Mother Report**	(1) Orphan	(2) HIV+	(3) HIV-	(1) vs. (2) t-test value	(1) vs. (3) t-test value
Externalizing Problems	62.15 (9.56)	58.30 (14.24)	62.77 (9.80)	-.87	.18
Internalizing Problems	65.39 (13.47)	60.23 (13.93)	64.94 (10.15)	-1.03	-.22
Social Competence	15.20 (2.51)	16.53 (2.13)	15.13 (3.07)	.57	-.07
Cognitive Competence	13.07 (2.99)	13.73 (1.79)	11.80 (2.51)	.74	-1.26
Child Report					
Externalizing Problems	6.50 (6.37)	8.64 (6.96)	6.20 (5.35)	.87	-.14
Internalizing Problems	6.40 (4.67)	8.50 (4.70)	7.93 (6.54)	1.21	.74

* p ≤ .05

Table 5.
Chi Squares results for clinical cutoff score on mother and caregiver-completed Child Behavior Checklist for orphan group versus HIV-infected controls and orphan group versus non-infected controls.

	(1) Orphans	(2) HIV+	(3) HIV-	(1) vs. (2)	(1) vs. (3)
Pre-Death Assessment					
EXTERNALIZING PROBLEMS					
60+	20	14	13	X^2= 2.06	X^2=2.81*
	57%	40%	37%		
< 60	15	21	22		
	43%	60%	63%		
INTERNALIZING PROBLEMS					
60+	24	18	14	X^2= 2.14	X^2=5.8**
	69%	51%	40%		
< 60	11	17	21		
	31%	49%	60%		
First Post-Death Assessment					
EXTERNALIZING PROBLEMS					
60+	12	10	7	X^2= .35	X^2=2.2
	52%	43%	30%		
< 60	11	13	16		
	48%	57%	70%		
INTERNALIZING PROBLEMS					
60+	14	10	11	X^2= 1.4	X^2=.80
	61%	43%	48%		
< 60	9	13	12		
	39%	57%	52%		
Second Post-Death Assessment					
EXTERNALIZING PROBLEMS					
60+	10	6	6	X^2= 2.1	X^2= 2.1
	67%	40%	40%		
< 60	5	9	9		
	33%	60%	60%		
INTERNALIZING PROBLEMS					
60+	11	5	8	X^2= 4.8*	X^2=1.3
	73%	33%	53%		
< 60	4	10	7		
	27%	67%	47%		

* $p < .05$, ** $p < .01$

Hypotheses 2 and 3: It was hypothesized that there is a significant difference in child adjustment between the orphan group and both control groups at six months and two years following maternal death.

To evaluate hypotheses two and three, Dunnett's t-tests were again conducted to examine whether the orphan group differed from either the HIV-infected or non-infected control groups at 6 months and two years following maternal death. It was hypothesized that the orphan group would be functioning more poorly than both control groups at both post-death assessments, but particularly at the 2-year assessment. Results of Dunnett's t-tests at six months and two-years following maternal death reveal no significant differences between the orphan group and either of the control groups (see Table 4). Although not reported in Table 4, adjustment of the children in the HIV-infected group did not differ from children in the non-infected group at the first post-death assessment. At the second post-death assessment, one difference emerged: children in the non-infected group were rated as having lower levels of social competence than children in the HIV-infected group (t = 2.43, p = .02; see Table 4 for means and standard deviations).

As with the pre-death analyses, chi square analyses were conducted as another way to evaluate hypotheses 2 and 3. It was hypothesized that a larger proportion of the orphan group would be rated in the clinical range for internalizing and externalizing problems than both control groups at 6 months and 2 years following maternal death. No significant differences emerged between groups in proportion of children in the clinical range at the first post-death assessment (see Table 5). However, at the second post-death assessment, a significantly larger proportion of children in the orphan group were rated in the clinical range for internalizing problems than children in the HIV-infected group. No differences emerged for externalizing problems at the second post-death assessment (see Table 5). As a point of comparison, no differences emerged between the HIV-infected group and non-infected group in the chi square analyses.

Hypothesis 4: It was hypothesized that two constructs would be significantly correlated with child adjustment in the orphan group at each assessment: quality of the relationship between mother/caregiver and child and maternal/caregiver depressive symptoms.

Specifically, it was hypothesized that a negative relationship would emerge between quality of the relationship and child internalizing and externalizing problems, and a positive association between quality of the relationship and child social and cognitive competence. Similarly, it was hypothesized that a positive relationship exists for maternal/caregiver depressive symptoms and child internalizing and externalizing behavior, and a negative relationship between mother/caregiver depressive symptoms and child competence. Mother/caregiver report and child report of the relationship are examined separately due to the low correlation between them (r = -.05, .02, .04 at pre-death, post-death 1 and post-death 2, respectively).

With regard to the analyses examining the associations between mother/caregiver depressive symptoms and relationship quality with child adjustment, correlations were conducted separately by group rather than regression analyses with group as a factor due to the exploratory nature of the present study. In the latter type of analysis, a Group X Relationship Quality (or maternal depressive symptoms) interaction initially would need to emerge in order to examine the association between relationship quality (or Maternal Depressive Symptoms) and child adjustment for each group separately. The small sample size would make it difficult for such an interaction to emerge. Thus, correlational analyses, which should be viewed as exploratory, were conducted. Specifically, correlations between relationship quality and mother/caregiver depressive symptoms and the child adjustment variables were calculated separately for each group at each assessment. The primary correlations of interest were those for the orphan group. However, as a point of comparison, correlations also were computed for the HIV-infected and non-infected groups. Tests for significant differences in the magnitude of correlation were then conducted. This addresses the question of whether the correlates of child adjustment operate the same or differently across groups.

Before examining the correlations, exploratory analyses were conducted to test for differences between groups for maternal/caregiver depressive symptoms and mother and child report of the relationship. These analyses were conducted to ascertain if mean differences existed between groups that may qualify any conclusions about relationships with the outcome variables. At each assessment, t-tests were conducted to determine whether the mothers/caregivers in the orphan group endorsed more or fewer depressive symptoms than in the control groups, and whether the relationship quality in the orphan group was better or worse than in the control groups. As before, comparisons were made between the orphan group and each control group separately. Results of the t-tests comparing means for maternal/caregiver depressive symptoms, and mother/caregiver and child report of the relationship are presented in Table 6. At the pre-death assessment, both mothers and children in the pre-orphan group rated their relationship as less positive than the non-infected mothers and children rated their relationship quality. At the first post-death assessment, no significant differences emerged for these variables. However, at the second post-death assessment, caregivers in

Table 6.
Means, Standard Deviations, and results of t-tests comparing orphans with HIV-infected controls and non-infected controls at each assessment on correlates of child adjustment.

Predeath	(1) Pre-Orphan	(2) HIV+	(3) HIV-	(1) vs. (2) t-test value	(1) vs. (3) t-test value
Child report of relationship	8.41 (2.43)	8.49 (2.27)	9.17 (1.10)	.13	1.68*
Mother report of relationship	13.21 (5.19)	14.91 (8.41)	15.54 (5.19)	1.02	2.19**
Maternal Depressive Symptoms	.52 (.51)	.49 (.61)	.43 (.52)	.25	.76

Postdeath 1	(1) Orphan	(2) HIV+	(3) HIV-	(1) vs. (2) t-test value	(1) vs. (3) t-test value
Child report of relationship	8.70 (1.61)	9.13 (1.36)	9.13 (1.46)	.99	.96
Mother/Caregiver report of relationship	15.62 (3.35)	14.39 (4.90)	16.43 (3.70)	.96	.76
Maternal/Caregiver Depressive Symptoms	.41 (.49)	.46 (.66)	.36 (.40)	.34	.38

Postdeath 2	(1) Orphan	(2) HIV+	(3) HIV-	(1) vs. (2) t-test value	(1) vs. (3) t-test value
Child report of relationship	8.67 (1.84)	8.86 (.86)	8.93 (1.84)	.35	.39
Mother/Caregiver report of relationship	14.47 (2.99)	15.13 (4.76)	14.40 (4.20)	.46	.05
Maternal/Caregiver Depressive Symptoms	.71 (.67)	.56 (.67)	.26 (.36)	.63	2.32*

* $p \leq .05$; ** $p \leq .01$

the orphan group endorsed significantly more depressive symptoms than the non-infected mothers. Although not reported in Table 6, it should be noted that the HIV-infected group did not differ from the non-infected group for mother or child report of the relationship or for maternal depressive symptoms.

Relationship Quality and Child Adjustment

As the orphan group is the group of primary focus in the present study, the significant relationships that emerged for this group are highlighted. Results of the correlational analyses for relationship quality and child adjustment at pre-death, post-death 1 and post-death 2 assessments are presented in Table 7, 8 and 9, respectively. At each assessment, there was a significant negative relationship between mother/caregiver report of the relationship and mother/caregiver report of child externalizing problems. At the pre-death and first post-death assessments there was a significant negative relationship between mother/caregiver report of the relationship and mother/caregiver report of child internalizing problems. In addition, significant negative associations emerged between child report of the relationship and child report of externalizing problems at the pre-death and first post-death assessments, as well as with child report of internalizing problems at the first post-death assessment. The magnitude of the relationships between child report of the relationship and child report of adjustment decreased by the second post-death assessment.

Mother/Caregiver Depressive Symptoms and Child Adjustment

With respect to the association between mother/caregiver report of depressive symptoms and child adjustment, results are presented for the pre-death, post-death 1and post-death 2 assessments in Tables 10, 11 and 12, respectively. Results indicate that a

Table 7.
Correlations between child adjustment variables and *mother* report of relationship quality with results of test for difference in correlation between orphans and HIV-infected controls, and between orphans and non-infected controls at *pre-death* assessment.

Child Adjustment: **Mother Report**	(1) Pre-Orphan	(2) HIV+	(3) HIV-	(1) vs. (2) z-score	(1) vs. (3) z-score
Externalizing Problems	-.62**	-.25	-.62**	1.88	0
Internalizing Problems	-.47**	-.27	-.47**	.93	0
Social Competence	.19	-.16	.04	1.41	.61
Cognitive Competence	.20	.21	.05	.04	.61
Child Report					
Externalizing Problems	-.15	-.01	.08	.56	.92
Internalizing Problems	-.02	.37*	-.13	1.47	.44

Correlations between child adjustment variables and *child* report of relationship quality with results of test for difference in correlation between orphans and HIV+ controls, and between orphans and HIV- controls at pre-death assessment.

Child Adjustment: **Mother Report**	(1) Pre-Orphan	(2) HIV+	(3) HIV-	(1) vs. (2) z-score	(1) vs. (3) z-score
Externalizing Problems	.05	.23	-.33	.74	1.57
Internalizing Problems	.30	.17	.06	.55	1.0
Social Competence	.10	-.11	-.32	.84	1.73
Cognitive Competence	-.04	-.19	.32	.61	1.49
Child Report					
Externalizing Problems	-.50*	-.31	-.43*	.92	.36
Internalizing Problems	-.07	-.35*	-.54**	1.88	2.14*

* $p \leq .05$; ** $p \leq .01$

Table 8.
Correlations between child adjustment variables and *mother* report of relationship quality with results of test for difference in correlation between orphans and HIV-infected controls, and between orphans and non-infected controls at *first post-death* assessment.

Child Adjustment: **Mother Report**	(1) Orphan	(2) HIV+	(3) HIV-	(1) vs. (2) z-score	(1) vs. (3) z-score
Externalizing Problems	-.66**	-.62**	-.50*	.22	.77
Internalizing Problems	-.62**	-.54**	-.17	.38	1.75
Social Competence	.18	-.06	-.35	.77	1.73
Cognitive Competence	-.03	.43*	-.40	2.01*	1.25
Child Report					
Externalizing Problems	.21	-.29	-.53	1.62	2.54*
Internalizing Problems	.30	-.23	.05	1.72	.82

Correlations between child adjustment variables and *child* report of relationship quality with results of test for difference in correlation between orphans and HIV-infected controls, and between orphans and non-infected controls at first post-death assessment.

Child Adjustment: **Mother Report**	(1) Orphan	(2) HIV+	(3) HIV-	(1) vs. (2) z-score	(1) vs. (3) z-score
Externalizing Problems	-.15	-.01	-.24	.46	.30
Internalizing Problems	.37	-.14	-.12	1.67	1.59
Social Competence	-.20	-.17	-.03	.10	.55
Cognitive Competence	.24	.44*	-.12	.72	1.16
Child Report					
Externalizing Problems	-.46*	-.18	.01	1.58	1.0
Internalizing Problems	-.65**	-.61**	-.66**	.21	.06

* $p \leq .05$; ** $p \leq .01$

Table 9.
Correlations between child adjustment variables and *mother* report of relationship quality with results of test for difference in correlation between orphans and HIV-infected controls, and between orphans and non-infected controls at *second post-death* assessment.

Child Adjustment: **Mother Report**	(1) Orphan	(2) HIV+	(3) HIV-	(1) vs. (2) z-score	(1) vs. (3) z-score
Externalizing Problems	-.62*	-.60*	-.53	.09	.34
Internalizing Problems	-.30	-.39	-.21	.25	.24
Social Competence	-.13	.23	.34	.25	.54
Cognitive Competence	.43	.33	-.07	.29	1.29
Child Report					
Externalizing Problems	-.36	.22	-.03	1.47	.85
Internalizing Problems	-.17	-.31	-.30	.37	.34

Correlations between child adjustment variables and *child* report of relationship quality with results of test for difference in correlation between orphans and HIV-infected controls, and between orphans and non-infected controls at second post-death assessment.

Child Adjustment: **Mother Report**	(1) Orphan	(2) HIV+	(3) HIV-	(1) vs. (2) z-score	(1) vs. (3) z-score
Externalizing Problems	-.05	-.05	-.01	0	.10
Internalizing Problems	-.05	-.33	-.04	.71	.02
Social Competence	.02	-.16	-.10	.44	.29
Cognitive Competence	.08	-.31	.15	1.41	.17
Child Report					
Externalizing Problems	-.25	-.42	-.12	.47	.33
Internalizing Problems	-.10	-.36	-.69**	.68	1.82

p ≤ .05; ** P ≤ .01

Table 10.
Correlations between child adjustment variables and *mother* report of depression with results of test for difference in correlation between orphans and HIV-infected controls, and between orphans and non-infected controls at pre-death assessment.

Child Adjustment: **Mother Report**	(1) Pre-Orphan	(2) HIV+	(3) HIV-	(1) vs. (2) z-score	(1) vs. (3) z-score
Externalizing Problems	-.04	.48**	-.04	2.25*	0
Internalizing Problems	.30	.45**	.08	.70	.92
Social Competence	-.11	-.25	-.08	.58	.12
Cognitive Competence	-.05	-.10	.01	.20	.24
Child Report					
Externalizing Problems	.06	.06	-.10	0	1.6
Internalizing Problems	-.06	-.14	-.08	.32	.08

* $p \leq .05$; ** $p \leq .01$

Table 11.
Correlations between child adjustment variables and *mother/caregiver* report of depression with results of test for difference in correlation between orphans and HIV-infected controls, and between orphans and non-infected controls at first post-death assessment.

Child Adjustment: **Mother Report**	(1) Orphan	(2) HIV+	(3) HIV-	(1) vs. (2) z-score	(1) vs. (3) z-score
Externalizing Problems	.22	.49*	.12	1.0	.33
Internalizing Problems	.44*	.42*	-.09	.08	1.78
Social Competence	-.39	-.07	.25	1.08	2.11
Cognitive Competence	.18	.06	.52*	.39	1.25
Child Report					
Externalizing Problems	-.46*	-.05	.20	1.84	2.64*
Internalizing Problems	-.19	.08	.10	.86	.92

* $p \leq .05$

Table 12.
Correlations between child adjustment variables and *mother/caregiver* report of depression with results of test for difference in correlation between orphans and HIV-infected controls, and between orphans and non-infected controls at second post-death assessment.

Child Adjustment: **Mother Report**	(1) Orphan	(2) HIV+	(3) HIV-	(1) vs. (2) z-score	(1) vs. (3) z-score
Externalizing Problems	.13	.35	.29	.57	.41
Internalizing Problems	.65**	.66**	.57*	.04	.31
Social Competence	-.40	-.35	-.39	.14	.03
Cognitive Competence	.45	.11	.19	.91	.71
Child Report					
Externalizing Problems	-.39	-.18	.42	.56	2.10*
Internalizing Problems	-.34	.04	.54*	.96	2.34*

* p ≤ .05; ** p ≤ .01

significant positive relationship exists between caregiver report of depressive symptoms and caregiver report of child internalizing at the two post-death assessments. It is interesting to note that these relationships were not found for mother report at the pre-death assessment. Also of interest is that a significant *negative* relationship exists between caregiver report of depressive symptoms and child report of externalizing problems at the first post-death assessment. The second post death assessment also revealed negative relationships between caregiver report of depressive symptoms and child report of internalizing and externalizing behavior (r = .34 and .39, respectively), although these correlations did not reach significance, most likely due to the small sample size.

Tests for Significant Differences Between Groups

Differences in the magnitude of the relationships (i.e., correlations) between groups were conducted and are also presented in Tables 5-10. In order to test for a significant difference between correlations, each correlation was converted to a Z-score, with the difference in Z-scores evaluated based on sample size. A critical Z-score value of 1.96 was chosen as a two-tail test of significance at the .05 level.

For mother report of the relationship, no significant differences in strength of correlation were found at the pre-death assessment in comparisons of the pre-orphan group with each control group. For child report of the relationship at the pre-death assessment, one significant difference emerged: there was a strong negative correlation between child report of internalizing problems and child report of the relationship for the non-infected control group, while no correlation emerged between these two variables for the pre-orphan group (Table 7). For mother and child report of the relationship and child adjustment at the first post-death assessment, two significant differences in correlations emerged. First, for the orphan group, there was a weak, positive correlation between caregiver report of the relationship and child report of externalizing behavior. In contrast, for the non-infected control group, a strong negative correlation emerged between these two variables (Table 8). Second, for mother/caregiver report of the relationship and mother/caregiver report of child cognitive competence, a strong positive relationship emerged for the HIV-infected control group, while no relationship emerged for the orphan group (Table 8). No significant differences in strength of correlation between groups emerged for mother or child report of the relationship and child adjustment at the second post-death assessment (Table 9).

In terms of the relationship between mother/caregiver report of depressive symptoms and child adjustment, one significant difference in strength of relationship emerged at the pre-death assessment: for mother report of child externalizing problems, a strong positive relationship emerged for the HIV-infected group in contrast to no relationship found for the orphan group (Table 10). At the first post-death assessment two differences in strength of relationship are observed. First, for child report of externalizing problems, a strong negative relationship with caregiver depressive symptoms emerged for the orphan group, in contrast to a moderately positive correlation between these variables for the non-infected control group. Second, for mother/caregiver report of child social competence, a strong negative relationship emerged with caregiver report of depressive symptoms for the orphan group and a moderately positive relationship emerged between these variables for the non-infected group (Table 11). Finally, at the second post-death assessment, two significant differences in strength of relationship were found between the orphan group and the non-infected group. For child report of externalizing behavior and mother/caregiver report of depressive symptoms, a moderately strong negative correlation emerged for the orphan group, and a strong positive relationship was found for the non-infected group. The same pattern emerged for child report of internalizing behavior (Table 12).

DISCUSSION

The current study was an effort to address two primary questions regarding children whose mothers die from an AIDS-related illness. First, how does the psychosocial adjustment of these soon-to-be orphans, before and after their mother's death, compare to control children? Second, are the most common correlates of child adjustment from the research on childhood bereavement (i.e., parental/caregiver depressive symptoms, quality of the parent-child relationship before death and quality of relationship between the bereaved child and surviving parent after death) associated with child adjustment for orphans of the AIDS epidemic?

In brief, results indicate that children whose mothers are near death due to an AIDS-related illness appear to be functioning worse than children whose mothers are not infected by HIV based both on a comparison of group means, and the proportion of children rated in the clinical range for adjustment problems. These differences appear to diminish immediately following maternal death. However, two years after maternal death, a larger proportion of bereaved children were in the clinical range for internalizing behavior as compared to the HIV-infected group, lending partial support for the premise of a delay effect in child adjustment problems following parental death (Worden, 1996). With regard to correlates of child adjustment for the orphan group, some support emerged for an association between the parent/caregiver-child relationship and child adjustment before the mother's death and 6 months after death. These correlations rarely differed from those in the control groups. Interestingly, while maternal depressive symptomatology prior to death was not associated with concurrent child adjustment, associations did emerge between child adjustment and caregiver depressive symptoms following maternal death.

The first hypothesis posited that, prior to maternal death, the pre-orphan group would be functioning more poorly than children in both the HIV-infected and in the non-infected control groups. Overall, the pre-orphan group appeared to be functioning worse than both control groups; however, the majority of significant differences that emerged in both types of comparisons (group means and proportion in clinical range) were between the pre-orphan group and the non-infected control group. Specifically, the pre-orphan group was exhibiting significantly more externalizing behavior as reported by mothers than children in either the HIV-infected or non-infected groups. However, no other differences emerged between the pre-orphan group and the HIV-infected group with regard to the first hypothesis. In terms of the comparison of proportion of children in the clinical range on a standardized assessment measure, significantly more of the pre-orphans were rated in the clinical range for internalizing and externalizing problems than children in the non-infected group. For both group mean comparisons and proportion of children in the clinical range, children in the pre-orphan group, but not those in the HIV-infected group, differed from those in the non-infected group. Taken together, children who are experiencing the imminent death of their primary caretaker because of AIDS appear to exhibit more behavior problems than children whose mothers are not infected with HIV. This difference is less apparent when the comparison is between children whose mothers are dying because of an AIDS-related illness and children whose mothers are infected with HIV but do not have a terminal illness. This finding is consistent with the study by Rotheram-Borus et al. (2001) who argue that the impact of a parent's HIV status on child adjustment can be profound, regardless of whether the parent dies or survives. It seems likely that the impact of coping with HIV and all the concomitant stressors associated with it may account for much of the behavioral issues exhibited by children in these families before the death occurs. However, it also seems that over and above the impact of HIV, the imminent death of a child's primary caretaker takes a toll on the child as evidenced by increased behavior problems. And, as noted above, the failure to find differences between children in the HIV-infected group and the non-infected group further supports this conclusion.

Hypothesis two, which argued that a significant difference would emerge between the orphan group and both control groups at six months following maternal death, was not supported by the results, either by comparison of group means or by the proportion of children rated in the clinical range for behavior problems. These results are consistent with some research that also failed to find significant differences between bereaved and non-bereaved children on measures of child adjustment, including children who were orphaned by the AIDS epidemic (e.g., Mireault & Compas, 1996; Forehand et al, 1999). In addition, in considering both the first and second hypotheses, these findings replicate Siegel et al.'s (1996) study with children of terminally ill parents. Siegel et al. (1996) found that children whose parents were dying of a terminal illness (primarily, but not exclusively from cancer) were functioning more poorly than a group of control children prior to parental death but this difference disappeared following death. This pattern of differences ostensibly occurs because children with a terminally ill parent begin grieving as soon as they are faced with the knowledge their parent is dying, whereas following parental death, they may feel a sense of closure, and can begin to adjust to life without their parent.

The third hypothesis of the study, based on research that found support for long-term effects of death of a parent (e.g., Worden, 1996) including parents who die of AIDS (Rotheram-Borus et al., 2001), received partial support. This hypothesis suggested there would be a significant difference in child adjustment between the orphan group and both control groups at two years following maternal death. Although no significant differences emerged for comparison of group means at the second post-death assessment, a significantly larger proportion of children in the orphan group than in the HIV-infected group was exhibiting clinical levels of internalizing behavior two years following maternal death. It would appear that, during an initial adjustment period soon after maternal death, the orphans exhibited fewer behavior problems; however, as time progressed, a large proportion of orphans continued to struggle with the loss and internalize their distress, consistent with several studies that found experiencing parental loss as a child can continue to cause grief-related affect and behavior for years following the death (e.g., Elizur & Kaffman, 1982; Siegel & Gorey, 1994).

One consideration in interpreting the two-year post-death finding that a larger proportion of orphans were rated as exhibiting clinical levels of internalizing is that the caregivers also were exhibiting significant depressive symptomatology at the second post-death assessment, and thus, it is possible this finding is partially a result of reporter bias. However, the caregivers reported significantly more depressive symptoms than the *non*-infected group, and yet the significant difference in proportion of children in the clinical range for internalizing at this assessment was between the orphans and the *HIV*-

infected group, reducing the probability that caregiver depressive symptoms were a critical factor in the finding. Nevertheless, the role of caregiver depressive symptoms should be considered in future research.

Taken together, the findings of the current study are consistent with previous research that children with a terminally ill parent exhibit increased behavior problems before death due to anticipatory grief (e.g., Siegel et al., 1996), and that differences between groups diminish immediately after death (e.g., Forehand et al., 1999; Mireault & Compas, 1996; Siegel et al., 1996) but may emerge after more time has passed (e.g., Worden, 1996). The current study fills in gaps from the bereavement literature, particularly with orphans of the AIDS epidemic, in that no study has examined data pre-death, immediately post-death and years following death that utilizes two control groups: children with HIV-infected mothers and those with non-infected mothers. The results of this study lend support to the argument that these children began grieving as their mothers were dying of a terminal illness, experienced either relief or perhaps detachment immediately following maternal death, and two years later, as they had time to adjust to their new lives and new homes, began to fully experience the distress of maternal loss.

As many of the differences between groups emerged in the proportion of children exhibiting clinical levels of behavior problems, it is valuable to compare whether the proportions in the current study are similar to that of previous parental bereavement research. Interestingly, results of the current study far exceed findings by previous research that approximately 30-40% of bereaved children fall in the clinical range in at least one area of child adjustment (e.g., Elizur & Kaffman, 1982; Mireault & Compas. 1996). In fact, in the current study, 70-80% of the orphan group was in the clinical range for internalizing or externalizing problems at each assessment. Surprisingly, between approximately 50-60% of the HIV-infected and non-infected samples also were rated in the clinical range in at least one area at each assessment. This would indicate that perhaps the stressful environment where these children reside has a significant impact on child adjustment, and that, although these rates are already high, maternal loss to AIDS is an added trauma that further increases the likelihood a child will have clinically-elevated levels of behavior problems.

Another important consideration in how the current study is a departure from the majority of bereavement literature is that the orphans in the present study typically did not have a remaining parent with whom they resided and were thus forced to change residence and adjust to a new caregiver. Such transitions to a new caregiver typically lead to a change in demographic characteristics that could influence the results. However, in contrast to differences found by Forehand et al. (1999), the only significant difference in mother/caregiver demographics from before death to after death was for caregiver age, as most children resided with a grandparent after the mother's death. Thus, the results cannot be explained by increase in income or an increase in number of caregivers (i.e., because the surrogate caregiver was married whereas the deceased mother had been single).

With regard to correlates of child adjustment, the fourth hypothesis evaluated whether the most common factors in the existing literature associated with child adjustment prior to and following parental loss (i.e., relationship quality, mother/caregiver depressive symptoms; Worden, 1996) are similarly associated with adjustment of the orphan group in the present study. First, however, the control groups were compared to the orphan group to determine whether there were overall differences for mother and child report of relationship quality, and mother/caregiver report of depressive symptoms. Based on both mother and child report, prior to maternal death the quality of the relationship was worse for the orphan group than for the non-infected group. This may be due to the fact that as these mothers became more ill, it was increasingly more difficult to maintain the closeness and open communication that was possible for the non-infected families. A child may begin to distance from his or her mother as he/she is aware she is nearing death, and a mother's deteriorating health may interfere with her ability to be patient and nurturing of her child. Furthermore, it is possible that differences did not emerge between the orphan group and the HIV-infected group as the mother's HIV status could also interfere with her ability to foster a close relationship with her children as she is faced with the stigma of HIV and the knowledge she is likely to develop a life-threatening illness. In fact, previous research has shown that the quality of the mother-child relationship is worse in families in which the mother is HIV-infected as compared to families in which the mothers were non-infected (Kotchick et al., 1997).

For mother and caregiver depressive symptoms, the mothers who died of an AIDS-related illness did not report significantly more depressive symptoms prior to their death than mothers in either control group. Surprisingly, caregivers did not endorse significantly more depressive symptoms than the mothers in the control groups at the first post-death assessment, but did endorse more depressive symptoms at the second post-death assessment, paralleling the pattern of adjustment for the orphans. In fact, the mean level of depressive symptoms endorsed by the caregivers nearly doubled from the first to second post-death assessment. Although it is difficult to ascertain why caregivers as a group were experiencing more depressive symptoms, it is possible that at the first post-death assessment, the caregivers were largely focused on adjusting to the issues inherent in taking in children, including supporting the orphans with their grief, addressing practical issues such as the children's schooling, setting up new routines and rules, and working with other family members in the home to adjust to the new family constellation. By the second post-death assessment, the caregivers may have begun to internalize the increased pressure and personal demands that accompany caring for additional children. The task of caring for one or more additional children can be particularly taxing to caregivers who are typically grandparents to the orphans, thus much older as a group, and often have chronic health conditions of their own (Joslin & Harrison, 2002).

As mentioned previously, the association between maternal depressive symptoms and child internalizing has been well-established across ethnic groups (e.g., Jones, Forehand, & Neary, 2001), and the correlations in the current study between caregiver depressive symptoms and child internalizing problems at both post-death assessments is thereby not very surprising. The increased rate of depressive symptoms in the caregivers may be the primary factor contributing to the higher proportion of orphans in the clinical range for internalizing problems at the second post-death assessment. Without a larger sample, it is difficult to differentiate to what degree the internalizing problem level of the orphans is a result of a delay effect from maternal loss, the result of increased caregiver depressive symptoms, or the result of reporter bias such that a depressed caregiver is more likely to rate their child as depressed. It is likely a combination of these factors. Nonetheless, this finding suggests that the adjustment of the surrogate caregiver is an important factor in how well children orphaned by the AIDS epidemic function following maternal death.

Further evidence for this premise can be found in a rather unexpected finding that caregiver depressive symptoms was negatively associated with child report of behavior problems, externalizing difficulties in particular. It was expected that the more depressive symptoms endorsed by the caregiver, the more behavior problems the child would be experiencing. As mentioned, this was indeed the case for caregiver report of child adjustment. However, just the opposite emerged for child report of behavior problems such that the more depressive symptoms endorsed by the caregivers, the fewer behavior problems endorsed by the child. This was true for externalizing behavior at the first post-death assessment, and, while the correlations did not reach significance at the second post death assessment (most likely due to sample size), were still what would be considered moderately strong relationships (-.39 and -.34 for externalizing and internalizing problems, respectively).

This finding initially seems counterintuitive and contradicts previous bereavement research that found a positive association exists between caregiver adjustment and child adjustment following parental death (e.g., Worden, 1996). However, this finding captures an important difference between a bereaved child being cared for by a surviving parent versus a non-parental caregiver. When a child must change homes and adjust to a new caretaker because their primary parent is deceased, the child may not feel as comfortable exhibiting symptoms of bereavement or adjustment problems as she/he would if she/he remained with the surviving parent of a married couple. It is plausible that for those orphans whose caregivers exhibited more depressive symptoms, the orphan children were more acutely aware of and careful of their behavior and were thereby less likely to perceive themselves as exhibiting behavioral problems, perhaps out of guilt or worry. This is further supported by the fact that the children in the control groups, who did not have to adjust to a new caregiver, exhibited the opposite and more typical finding that greater adjustment problems for the mother was associated with greater adjustment problems for the child.

Considering that the findings for caregiver depressive symptoms and child adjustment are contradictory, yet generally strong associations, it would seem to indicate how important caregiver adjustment is to the well-being of the orphans. Given how differently the orphans and their caregivers perceive the orphans' behavior, particularly when the caregivers have more depressive symptoms, only underscores the challenge of this period of adjustment for both parties, and raises the question as to whether the orphans do not feel at liberty to openly grieve or express their distress.

Further associations that emerged for correlates of child adjustment were based on relationship quality. At the pre-death assessment, the more negative the mothers rated their relationship with their child, the more internalizing and externalizing behavior problems the mother rated the child as having. This finding also may partially explain why, at the pre-death assessment, mothers rated their children as having more behavioral problems than children whose mothers were non-infected: quality of the mother-child relationship was significantly worse for the orphan group only at the pre-death assessment, and in turn, relationship quality was correlated with child behavioral problems at the same assessment. Thus, the orphan group may have been functioning more poorly prior to maternal death because the mother-child relationship was less positive. The clinical implication of this finding is valuable such that targeting the mother-child relationship prior to her death may have positive effects on the child's adjustment.

Furthermore, relationship quality with the new caregiver proved to be an important variable in child adjustment after maternal death. Specifically, the more negative the caregiver rated her relationship with the orphan, the more externalizing problems she rated the child as having at the first post-death assessment, and the more internalizing problems at both post-death assessments. Thus, across all three assessments, the less positive the relationship with the child, the more likely the adult (mother or caregiver) was to rate the child as exhibiting behavior problems. Alternatively, it can be argued that the more behavior problems the child is perceived as having, the more problematic the mother or caregiver perceives her relationship to be with the child. In essence, the cross-sectional nature of the data used in the analyses being discussed prevent causal conclusions from being reached.

For both relationship quality and mother/caregiver depressive symptoms, associations were only found for child internalizing and externalizing behavior, not for social or cognitive competence. Including competence measures in the analyses was one way to assess both positive and negative adjustment variables. However, the correlations for competence were inconsistent and did not reach significance in any analysis. It is possible that competence levels are more intrinsic and stable and are thus less influenced by challenges and losses experienced by children. As a result, the predicted finding that competence would decline as relationship quality declined or as depressive symptoms increased was not found. In addition, given how overwhelmed both the mother near death due to AIDS, and the new caregiver adjusting to caring for the orphans likely would be, it is likely that competence levels are far less salient than child depressive symptoms, withdrawal or acting out behavior. Thus no consistent relationship between the correlates of child adjustment and competence as a component of adjustment emerged.

From the child's perspective, the results appear to parallel the associations based on mother or caregiver report of the relationship and mother/caregiver report of child adjustment. That is, the more negative the orphan's view of the relationship with his/her mother or caregiver, the more behavior problems the child endorsed at the first two assessments. Of interest is the strength of the association between child report of the relationship and child endorsement of adjustment problems at the first post death assessment, and that these associations diminished considerably by the second post-death assessment. Perhaps as the orphans are adjusting to their new caregiver, they are acutely aware of the relationship, and the better the relationship seems to them, the more likely they are to see themselves as experiencing fewer adjustment problems. An alternative explanation is that the orphans who are experiencing more difficulty following maternal death are more likely to perceive the relationship with the new caregiver as the blame for their problems.

Based on both child and adult report, the current findings largely support previous research regarding childhood bereavement in that the quality of the relationship with the parent who dies, and more importantly, with the surviving caregiver, is paramount to the child's adjustment to the loss (Elizur & Kaffman,1983; Gray, 1987; Raveis et al., 1999). Of note is that while previous research has examined relationship quality between the child and the surviving parent as a critical variable in child adjustment following parental death, the current study replicates that finding with a non-parental caregiver. This finding lends support for the premise that the quality of the relationship is critical, regardless of whether the caregiver is a surviving parent who has always cared for the child, or an extended family member who has taken on the new responsibility of rearing the child.

Some limitations of the current study should be noted. First, the current study was based on a small sample size. Thus, there was much less power to detect differences, and analyses were conducted with less rigorous methods than would be ideal. Some variables were not able to be controlled for (i.e., demographic characteristics) and may have influenced the results. However, given the small sample size, it is impressive that some findings were as strong as they were, particularly in the strength of the relationships for correlates of child adjustment. Another limitation to this study is common method variance such that most significant associations in the correlational analyses were based on measures filled out by the same individual which increases the likelihood associations would emerge. The failure to find significant relationships between different reporters is not uncommon (Forehand et al., 2002). As Forehand et al. (2002) noted, that although this may be a function of biased perceptions that may result in inflated relationships between correlates, it may also reflect the different realities experienced by each individual, underscoring the importance of incorporating both viewpoints. A third limitation to this study is that the results are not generalizable to children of different ethnicities, socioeconomic backgrounds or regions of residence. These results are specific to children who are African American, residing in the inner-city of New Orleans, and whose mothers were infected with HIV. A final limitation to this study is lack of a comparison sample of children who experienced the loss of a parent from a cause other than an AIDS-related illness, and who did not change residences. In this way, the influence of losing one's primary parent to a stigmatized illness could have been compared to the influence of losing a parent due to a less-stigmatizing illness. In addition, the differences in child adjustment when remaining with a surviving parent, versus changing residences and caregivers entirely could also have been examined.

Several strengths of this study also should be noted. First, the population in the present study is highly unique and sorely understudied. Very few studies have examined the impact on child adjustment of losing one's primary parent to AIDS, with an examination of child adjustment both before and after maternal death. In addition, this study utilized two control groups to more thoroughly compare the pattern of results. In so doing, a clearer picture could be developed to determine whether 1) the findings were unique to children who experienced maternal loss due to AIDS; 2) whether it is the experience of having a mother who is HIV-infected that is most critical, or 3) whether the nature of the inner-city neighborhood and all its concomitant stressors removes any influence of maternal loss. The results indicate that, indeed, having a mother who dies from an AIDS-related illness has negative effects on child adjustment over and above having a mother who is HIV-infected or from residing in a highly stressful environment.

There are numerous clinical implications based on the findings of this study; however, the most relevant to intervention efforts are highlighted. First, three factors converge to suggest the point of intervention with these children appears to be improving the mother-child relationship: (a) the children whose mothers are near death due to AIDS are experiencing more adjustment problems; (b) the relationship quality with their mothers is also more poor for these children; and (c) relationship quality is associated with child adjustment. In fact, one study evaluated an intervention to assist families in which a parent had HIV or AIDS to establish positive daily routines to assist the family in coping with the illness, as well as target disclosure issues and making custody plans (Rotheram-Borus et al., 2001). These goals of the intervention seem to specifically address factors that would contribute to poor communication and a compromised relationship for children about to lose a parent to AIDS. As expected, the authors found that adolescents in the intervention condition demonstrated better functioning than adolescents who did not receive the intervention.

Another implication of the current study is the role of the relationship with the new caregiver, and the powerful influence of the caregiver's adjustment on the adjustment of the orphan. As an extension of previous research with parentally bereaved children and a surviving parent, the relationship between a surrogate caregiver and orphan appears to play the same role with regard to child adjustment as the relationship between a surviving parent and a bereaved child. However, the role of the psychological adjustment of the new caregiver actually demonstrates somewhat of a departure from previous research. Caregivers are at risk for experiencing more depressive symptoms, and this seems to contribute to greater challenges for the orphan. From the caregiver's perspective, the orphan's functioning is worse when the caregiver is more depressed. From the orphan's perspective, their behavior is better the more depressed their caregiver, which is of concern, because the orphan may be masking or in denial of the emotional difficulties of their situation. In either case, targeting the relationship and psychological adjustment of the new caregiver should clearly be a focal point of any intervention with this population.

Furthermore, it appears that, for various reasons, the orphans experience more difficulties before maternal death and two years after death as compared to children from the control groups. Thus, it is critical not to merely assess the adjustment of orphans from AIDS in the short term following maternal death. Indeed, given that 6 months after death, the adjustment of both the caregivers and orphans were similar to that of the control groups, it is likely that the period immediately following maternal death is characterized by some relief, as well as multiple transitions and adjustments to a new life. As a result, both caregivers and orphans may be focused on navigating the more practical aspects of adapting to each other and coping as best they can. Thus, it is imperative that the longitudinal nature of an orphan's grief and adjustment to maternal loss be considered and incorporated into any intervention approach.

Finally, while the current study fills in some gaps in the scant research on orphans of the AIDS epidemic, much more research is needed to more specifically assess how to best meet the needs of this emotionally at-risk group of children who are ever-increasing in number.

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