Children's Religious Coping Following Residential Fires: An Exploratory Study

by

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(ABSTRACT)

Recent advancements in the general child disaster literature underscore the important role of coping in children's postdisaster adjustment. Religious coping in children, a potentially important category of coping strategies, has received little attention until recent years. Moreover, its role in the context of post fire adjustment has not been studied. The present study examined the psychometric soundness of the Religious Coping Activities Scale (RCAS; Pargament et al., 1990) in children and adolescents and explored its utility in predicting children's religious coping over time: moreover, the study evaluated its role in predicting PTSD symptomatology over an extended period of time.

This investigation included 140 children and adolescents (ages 8-18). Factor analyses of the RCAS revealed a 6-factor solution very similar to the factor structure in the original study. This finding suggests that the RCAS is a promising instrument to measure children's religious coping efforts.

Hypotheses concerning the prediction of children's religious coping were only partially supported. Regression analyses indicated mixed findings in terms of the contributions of selected variables to the prediction of children's Spiritually Based Coping and Religious Discontent.

Overall, the regression model predicted Religious Discontent better than Spiritually Based Coping.

A mixed-effects regression model and hierarchical regression analyses were both employed to examine the role of children's religious coping in predicting short-term and long-term PTSD symptomatology following the residential fires. Results from the mixed-effects regression indicated that loss, time since the fire, child's age, race, and race by age interaction significantly predicted children's PTSD symptoms over time. However, time specific regression analyses revealed different predictive power of the variables across the three assessment waves. Specifically, analyses with Time 1 data revealed the same findings as did the mixed-effects model, except that time since the fire was not a significant predictor in this analysis. General coping strategies appeared to be the only salient predictors for PTSD at Time 2. Finally, Religious Discontent appeared to be negatively related to PTSD at a later time.

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Children's Religious Coping Following Residential Fires: An Exploratory Study

A number of studies examining children who have been exposed to disasters indicate that a significant percent of them experience psychological distress at least shortly after the disaster (e.g., Dollinger, 1986; McFarlane, 1987; Seroka, Knapp, Knight, Siemon, & Starbuck, 1986), whereas others do not display such maladaptive responses (Compas & Epping, 1993). Many researchers attribute this differential outcome to coping as it is widely believed that the ability to cope effectively plays an important role in determining adjustment following disaster (Matheny, Aycock, Pugh, Curlette, & Cannella, 1986). In the past several decades, the area of stress and coping has attracted much attention and numerous studies have been conducted. Many researchers have adopted Lazarus and Folkman's (1984) definition of coping as "constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person" (p.141), which highlights the effortful and process-oriented perspective of coping.

Coping has been studied both as an independent variable and as a dependent variable (Compas, Worsham, & Ey, 1992). As an independent variable, coping is often used to predict psychological and somatic symptoms (see Fields & Prinz, 1997, for a 10-year research review on the relationship between coping strategies and adjustment in children and adolescents). On the other hand, other studies investigate factors that may influence the way a person copes. Coping resources constitute a group of variables that are thought to directly influence children's use of coping strategies or make children more effective in carrying out specific coping strategies (Lengua & Sandler, 1996). According to Lazarus and Folkman (1984), coping resources include health and energy, existential beliefs (e.g., about God) or general beliefs about control, commitment, skills, social support, and material resources. Although other researchers have used

the concept of coping resources in their research, interestingly, it appears that many have minimized or seemingly dismissed the role of existential beliefs in particular (e.g., Sandler, Wolchik, MacKinnon, Ayers, & Roosa, 1997). As pointed out by Lazarus and Folkman (1984), in spite of its theoretical importance as a resource, little research has been conducted on how existential beliefs, including religious or spiritual beliefs, are manifested in coping processes.

Research on Religious Coping

Religion is a complex phenomenon that takes many shapes and forms (Pargament, 1997). It has been defined in myriad ways. For example, Webster's New Universal Unabridged Dictionary (1996) defines religion as "a set of beliefs concerning the cause, nature, and purpose of the universe, especially when considered as the creation of a superhuman agency or agencies, usually involving devotional and ritual observances, and often containing a moral code governing the conduct of human affairs." James (1902, p.32) defined religion as "the feelings, acts and experiences of individual men in their solitude, so far as they apprehend themselves to stand in relation to whatever they may consider the divine." Batson, Schoenrade, and Ventis (1993, p.8) offered the following definition: "whatever we as individuals do to come to grips personally with the questions that confront us because we are aware that we and others like us are alive and that we will die." After reviewing both the substantive and functional definitions of religion, Pargament (1997) defines religion as a process and "a search for significance in ways related to the sacred." Although religion and spirituality have often been used interchangeably in the literature, there is a general consensus that religion emphasizes an organized system of tradition, beliefs, and practices, whereas spirituality expresses a more universal experience and includes religion and relationships with others in a faith community (Josephson & Dell, 2004). This paper focuses primarily on the role of religion in the coping process. However, as a

reflection of the literature, religion and spirituality are used together in this paper with no clear distinction being made.

The practice of religion dates back to prehistoric times and has been an integral component of human society across nations and cultures (Joseph, 1998). Lukoff, Lu, and Turner (1992) asserted that "religion and spirituality are among the most important factors that structure human experience, beliefs, values, behavior, and illness patterns." Indeed, a number of surveys have revealed a high prevalence of religious involvement among people in the United States. For example, approximately 95% of adults express a belief in God (Hoge, 1996), and 90% of Americans identify themselves as being "religious" (Goldman, 1991). In addition, 72% report religion as the single most important influence in their lives (Bergin & Jensen, 1990). Historically, body, mind, and spirit were seen as intertwined and healing involved both the body and the soul. Early psychology leaders such as William James and G. Stanley Hall suggested that religion represented one of the more complex fields of human endeavors that warranted scientific study.

The advent of Freud's psychoanalysis and Watson's behaviorism marked the beginning of a long-term separation between psychology and religion, that is until recent years. Researchers have begun to recognize the important role of religion/spirituality in coping across a wide range of situations ranging from daily hassles to severe crises. Tix and Frazier (1998) defined religious coping as "the use of cognitive or behavioral techniques, in the face of stressful life events, that arises out of one's religion or spirituality." It is noted that this definition includes both religious coping and spiritual coping. To make a clearer distinction between the two, religious coping itself may be better defined as "the use of cognitive or behavioral techniques, in the face of stressful life events, that arises out of one's religion." Aspects of religious coping have been

recognized as "normative and adaptive coping strategies" for most people (Bjorck & Cohen, 1993; Ross, 1990). Indeed, some studies, which employed open-ended questions, suggest that 18-69% of participants spontaneously report their faith was helpful to them in coping with a variety of life problems (see Pargament & Brant, 1998, for review). In another comprehensive review, 50-100% of studies indicated positive effects of religious factors on health and psychological functioning (Matthews, Larson, & Barry, 1994). Hood, Spilka, Hunsberger, and Gorsuch (1996) discussed three major coping functions of religion: to provide answers to the fundamental needs of *meaning*, *control*, and *self-esteem* especially in times when threatened by life stress. Kenneth I. Pargament is the foremost scholar in research on the role of faith in relation to coping behavior and has extensively studied the contribution of religion to the various facets of the coping process. He and his colleagues assert that religious coping may serve to provide comfort, stimulate personal growth, enhance closeness with God and others, and offer meaning and purpose in life (Pargament & Park, 1995).

Despite the conceptual importance of religion in coping, empirical research in this area has long been limited to the "macro-analytic" or "dispositional" level, in which religion is measured as a global construct by a few static indicators, such as type of religion, frequency of prayers, church attendance, and reported importance of faith in God (Pargament, 1997; Pargament et al., 1990; Pargament & Brant, 1998). Frequently, these indicators are combined into measures of more general coping making it impossible to sort out specific religious effects *per se*. Building upon Lazarus and Folkman's coping process theory, Pargament and his colleagues have developed measures of specific religious efforts (Pargament et al., 1990; Pargament, Koenig, & Perez, 2000). Compared to global religious orientation measures, this

"micro-analytic" approach allows assessment of specific, functionally-oriented expressions of religion in response to specific life situations.

The Religious Coping Activities Scale (RCAS) was one of the first religious coping measures developed (Pargament et al., 1990). The RCAS targets the broad mainstream of religious practices in Americans from a Judeo-Christian tradition. The items were generated through empirical literature, interviews with clergy and other adults, and written personal accounts of those who use religion in coping. A principal factors analysis revealed a five-factor solution (Pargament et al., 1990). The first factor, Spiritually Based Coping, stresses the intimate partnership between the individual and God in the coping process. Good Deeds Coping, the second factor, focuses on living a more religiously integrated life. It expresses the shift from the stressful event to one's change in life style. The third factor, Discontent, expresses anger, distance, and doubt with God and church members. The fourth factor, Religious Support Coping, involves seeking support from the clergy or congregation. Finally, Pleading Coping includes pleas, bargaining, and questioning with God. Unexpectedly, two items of the RCAS, both regarding religious avoidance, did not load onto any of the five factors. However, the authors were interested in exploring the concept of avoidance further and added a third item to keep the three Avoidance items in the RCAS. As such, Religious Avoidance involves actions to divert the individual from problems through focusing on the afterlife, reading the Bible, and relying on God to solve problems for them. The internal consistency estimates ranged from .61 to .92 for the six factors.

A number of studies have examined variables that predict adults' religious coping. Pargament (1997) conducted a comprehensive review of this research and classified the predictors of religious coping into three categories: situational forces (e.g., loss, event type),

cultural forces (e.g., local culture and culture of origin), and individual forces (e.g., demographic variables). In response to both hypothetical and real events, greater use of religious coping has been found to be associated with a greater number of life events and appraisals of the events as a threat or loss than as a challenge (e.g., Bjorck & Cohen, 1993; McCrae, 1984). There is evidence that supports the influence of culture on religious coping. For example, in a national sample of 3,417 adults, religious coping was found to be more frequent among people living in the South (Ferraro & Koch, 1994). With respect to demographic variables, the adult religious coping literature has consistently shown that females (Ellison & Taylor, 1996; Ferraro & Koch, 1994; Gurin, Veroff, & Feld, 1960), older individuals (Ferraro & Koch, 1994; Gurin, Veroff, & Feld, 1960; Koenig et al., 1992), those less educated (Bearon & Koenig, 1990; Croog & Levine, 1972; Gurin, Veroff, & Feld, 1960), and those with lower income (Gurin, Veroff, & Feld, 1960) report a higher frequency of religious coping. Some studies have also found that African Americans report a higher frequency of religious coping compared to other ethnic groups (Bearon & Koenig, 1990; Ellison & Taylor, 1996; Koenig et al., 1992). Two other studies have shown that Mexican American youths are more likely than their European American counterparts to endorse religious coping (Codega et al., 1990; Copeland & Hess, 1995). It should be noted, however, that in most studies SES and ethnicity status have been confounded. Therefore, caution should be taken in the interpretation of findings when it is impossible to separate out the effects from both sources.

Religious coping has been studied as an independent variable as well. A series of studies by Pargament and his colleagues compared religious orientation and religious coping and indicated that variables characterizing religious coping activities were better predictors of psychological outcome than religious orientation measures (Pargament et al., 1990; Pargament et

al., 1994; Pargament, Smith, & Brant, 1995). Furthermore, the unique predictive power of the religious coping variables was tested after controlling for the effects of non-religious coping measures and results indicated that religious coping added a unique contribution to outcome measures above and beyond non-religious coping (Pargament et al., 1990). Pargament and Brant (1998) interpreted this finding as the unique value of religion to offer a response to "the problems of human insufficiency." Particularly in a disaster situation, when the circumstances are out of personal control, many turn to a higher power for explanation, support, and a sense of control.

It should be noted that the majority of studies to date on religious coping have been conducted with adults. Research on children's religious coping has been sparse. However, the last decade has witnessed an increasing recognition of the importance of religion/spirituality in the mental health of children and adolescents (Houskamp, Fisher, & Stuber, 2004). In fact, a recent issue in Child and Adolescent Psychiatric Clinics of North America (Vol. 13, 2004) was dedicated to the topic of religion and spirituality in child and adolescent psychiatry (Josephson & Dell, 2004). This special issue addresses historical aspects of the relationship between psychiatry and religion/spirituality, reviews relevant theories and research findings, presents major faith traditions and their clinical implications, discusses ethical issues arising at the interface between religion/spirituality and child psychiatry, and provides guidelines for integrating religion and spirituality into the assessment, case formulation, and treatment of pediatric patients.

Moreover, developmental differences in cognition and psychosocial functioning between children and adults justify the need to study the religious and spiritual aspects of children in their own right. It is suggested that children may be more open to spirituality than adults in that their perception of reality is less constricted by social conventions (Garbarino & Bedard, 1996). In

addition, the manifestation of religion may differ for children and adolescents from that for adults in that from childhood to adulthood there seems to be a shift from a set of concrete and external religious rules to a more internally based religion (Fowler, 1981; Fowler & Dell, 2004). Building upon Eriksonian and Piagetian developmental theories, Fowler proposed five stages of faith development through adolescence and three later stages (Fowler, 1981; Fowler & Dell, 2004). For instance, by middle childhood, children reach the third stage of "mythic-literal" faith, characterized by literal and concrete understandings of God and religion. They understand a higher being as caring, dependable, and just but controlling. Also, they have concrete concepts about rewards for good behavior and punishment for wrongdoings. By early adolescence, children enter the fourth stage of "synthetic-conventional faith," during which they begin to incorporate different beliefs into the formation of their identities, while maintaining conventional family values. Fowler denotes the next stage as the "individuative-reflective" faith, during which the adolescent or young adult is able to critically reflect on and evaluate his/her beliefs while utilizing third-person perspective taking and to make active choices about his/her ideology and lifestyle.

Only a few studies have empirically examined religious experiences in childhood and adolescence. For example, a large scale study of religious experiences in childhood and adolescence was conducted by Tamminen (1994), who included 1,588 children and adolescents (age 7-20) who were first studied in 1974. This study showed that the majority of youngsters reported religious experiences but the percent reporting religious experiences decreased as age increased. A study of coping strategy selection in pediatric patients in Switzerland reported that patients of lower socioeconomic status used religious coping strategies significantly more often than those with higher SES (Landolt, Vollrath, & Ribi, 2002). However, it is noted that religious

coping strategies in this study were measured by two items developed by the authors based on their clinical experiences. The contents of the two items were not reported in the paper. Hence, it is difficult to evaluate the construct validity of this measure of religious coping strategies or its significance.

Britt (1995) conducted one of the few studies examining the role of religion in fourth and fifth grade children's coping with everyday hassles. Findings of this study indicated that some children used their faith to cope with everyday stressful situations and that (parent-reported) religious involvement was positively related to children's use of religion as a coping strategy. Moreover, the more threatening children appraised a situation to be, the more likely they were to use religion to cope. The study further revealed a positive relation between use of religious coping and use of social support and positive appraisal.

Another study looked at the relationship among stress, religious coping, social support, self-esteem, depression and anxiety in adolescents (Olszewski, 1994). This study focused on the Spiritually Based Coping factor from Pargament's RCAS scale and examined its direct effects on depression and anxiety, moderator effects on the relationship between stress and symptoms, and social support and self-esteem as mediators between Spiritually Based Coping and depression and anxiety. The findings of this study suggest that Spiritually Based Coping has an indirect effect on adolescents' depression and anxiety that is mediated by self-esteem and social support from friends. It should be noted that this study simply adopted the Pargament scale without conducting exploratory or confirmatory factor analysis to examine the validity of the application of the scale to its adolescent sample. The Cronbach's alpha, however, for the Spiritually Based Coping scale was reported to be .93 in this study.

Two studies by Strizenec and his colleagues used a variant of Pargament's scale (assessing Self-Directing, Deferring, and Collaborative coping styles) to study religious coping in Slovak adolescents. The authors confirmed the reliability of the Slovak translation of the Pargament scale, showed a preponderance of the collaboration with God coping style, and a significant inverse relationship between Deferring coping style and the Openness factor in the Big Five personality structure (Extraversion, Agreeableness, Neuroticism, Conscientiousness, and Openness) (Strizenec, 2000; Strizenec, & Ruisel, 1999).

More recently, a qualitative study was conducted to investigate 23 pediatric patients' (age 5-12, with cystic fibrosis) perspectives on religion/spirituality in coping with their illness (Pendleton, Cavalli, Pargament, & Nasr, 2002). Through use of in-depth interviews with children and their parents, children's drawings, and self-administered parental questionnaires as well as standard qualitative data analysis techniques, the study suggested that religious and spiritual coping emerged as the most salient theme. Specifically, the children discussed 11 religious/spiritual coping strategies, including a belief in God's support and intervention, support from religious community, pleading for God's help, religious rituals, benevolent or punishing religious reappraisal, discontent with God, and a belief that God is irrelevant. Of note, most of these religious/spiritual coping strategies reported by the children with cystic fibrosis were very similar to those delineated in the RCAS. Boeving (2003) conducted a preliminary study to design a measure of children's spiritual coping with chronic cancer and examined the contribution of spiritual coping to the prediction of psychosocial outcomes of child cancer survivors. This study used the broad concept of spirituality and designed the Child Spiritual Coping Survey following the standard procedure of literature review, interviewing with a sample of child cancer survivors, developing a first version of the measure, testing the initial measure with another sample, and

making revisions. Factor analyses revealed two dimensions of spiritual coping, namely, existential coping and religious coping. It is noted that some of the items of the religious coping subscale are similar to items in the RCAS (Pargament et al., 1990). For example, "God will not let anything terrible happen to me" and "God will make things turn out okay." Contrary to hypotheses, results of this study suggest that either existential or religious coping did not contribute significantly to the prediction of child adjustment outcomes. Although the findings of the above two studies are limited by small sample sizes, they both demonstrated admirable efforts to develop appropriate measures of children's religious/spiritual coping and to explore the role of spirituality and religion in children's coping with severe illnesses. Findings from these studies shed light on future research on children's spiritual/religious coping with other stressors as well.

The extant research examining the relationship between religion/spirituality and children's mental health is still in the preliminary stages of inquiry (Houskamp, Fisher, & Stuber, 2004). Investigation into the role of religion in children's coping with various stressors, including disasters, remains in great need of further exploration. The advancements of our knowledge of the role of religion in children's coping should aid practitioners in their interventions with such youth.

Research on Children and Adolescents' Adjustment to Residential Fires

Residential fire is one of the leading causes for fatality, injuries and property loss in the United States. The number of occurrences of residential fire was estimated to be 417,000 in 1996 (Karter, 1996) and 500,000 in 1997 (Greenberg & Keane, 1997). Statistics show that children and adolescents, particularly those from low-income families, are most likely to be injured by fire (Tarnowski, 1994). Residential fire shares some common features with other natural

disasters, such as unpredictability, low controllability, powerful impact, threat, terror, and horror (Jones & Ollendick, 2002). However, it also has some unique characteristics, including its man-made or technological nature, toxic gases and fumes, and fire appearance (Bickman, Edelman, & McDaniel, 1977). It usually occurs in isolation with one family or within a small community. Bernstein (1990) suggested that this isolation might lead to greater levels of psychological distress.

Relatively few studies have been conducted on the psychological consequences of residential fires compared to research on other disasters. However, some studies have examined adults' post-fire functioning. Other studies involving children and adolescents have shown that children and adolescents experience varying levels of distress including symptoms related to PTSD following fires (e.g., Greenberg, 1994; Jones & Ribbe, 1991; Jones, Ribbe, & Cunningham, 1994; Krim, 1983). In particular, one study reported that over 50% of burn-injured children displayed significant symptoms of Post-Traumatic Stress Disorder (PTSD) and 25% to 35% of them met the diagnostic criteria of PTSD (Stoddard, Norman, Murphy, & Beardslee, 1989). Only recently, Jones and Ollendick (2001) began a systematic investigation of children and their families' adjustments following residential fires. Still, many questions remain unanswered about children's coping efforts and adjustments following residential fires. Of particular interest, what factors influence children's reactions to the residential fires over time? What is the role of coping in post fire adjustments? How does religion play a role in children's coping? Given the paucity of research in the area of children's adjustment to residential fires, some relevant theories and findings from the general child disaster literature which should shed light on our investigation of the above issues will be examined.

In the general child disaster literature, a few theoretical models have been proposed to account for variables that may affect post-disaster adjustment. For example, the Psychosocial Model of Disaster (Korol, Green, & Grace, 1999) identifies four primary factors including: characteristics of the stressor (e.g., loss, life threat), cognitive processing of the traumatic event (e.g., appraisal), individual characteristics of the child (e.g., age, sex), and characteristics of the environment (e.g., reactions of family members). Similarly, La Greca and her colleagues (La Greca, Silverman, Vernberg, & Prinstein, 1996; Vernberg, La Greca, Silverman, & Prinstein, 1996) derived an integrated conceptual model to account for factors that are likely predictive of children's PTSD symptoms following hurricanes and related disasters. These factors included: exposure to trauma (i.e., life-threatening experiences and loss), preexisting child characteristics (i.e., demographic variables), postdisaster recovery environment (e.g., social support and intervening stressful life events), and coping skills. In particular, this model highlights the role of coping in post-disaster adjustment. Coping is viewed as a product of trauma, personal characteristics, and situational characteristics such as access to supportive others (La Greca et al., 1996). Concerning the role of social support, other researchers have also suggested that social support helps the individuals to cope more effectively with life stressors (see Cohen & Wills, 1985; Compas & Epping, 1993). In addition, this model proposes a bidirectional relationship between coping efforts and PTSD symptoms in that coping efforts both have an impact on postdisaster distress and are influenced directly by it (La Greca et al., 1996).

Empirical support of the above theoretical models has been reported in the general child disaster literature. Both the life threatening experience and loss aspects of the trauma exposure have been found to be associated with children's postdisaster distress (e.g., Burke, Moccia, Borus, & Burns, 1986; Green et al., 1991; La Greca et al., 1996; Lonigan, Shannon, Finch,

Dagherty, & Taylor, 1991; Vernberg et al., 1996). There is also evidence that suggests that girls initially report more PTSD symptoms than boys following natural disasters (e.g., Green et al., 1991; Lonigan et al., 1991; Shannon, Lonigan, Finch, & Taylor, 1994; Vernberg et al., 1996), although these gender effects may not persist over time (La Greca et al., 1996), and African American youth report more PTSD symptoms than their European American or other minority counterparts (Lonigan et al., 1991; Shannon et al., 1994). Findings concerning age differences in PTSD symptoms following natural disasters have been inconsistent, however. Some studies reported significant age differences in PTSD symptoms (Lonigan et al., 1991; Shannon et al., 1994), while others reported no age differences (e.g., Green et al., 1991). Social support has been found to be predictive of children's PTSD symptoms (La Greca et al., 1996; Vernberg et al., 1996). Although few studies have examined the role of children's coping efforts in postdisaster functioning, extant research has shown that children's coping efforts are positively associated with their PTSD symptoms (La Greca et al., 1996; Vernberg et al., 1996). In particular, negative coping strategies (e.g., blame and anger) have been found to have unique contributions to initial PTSD symptomatology (La Greca et al., 1996; Vernberg et al., 1996).

Although often not commented upon in the major disaster models, descriptive data have consistently indicated that children's PTSD symptomatology tends to decline over time after the traumatic events (e.g., Jones & Ribbe, 1991; La Greca et al., 1996). However, this relationship has rarely been investigated in more sophisticated analyses that include other variables.

In summary, as a unique disaster residential fire poses tremendous challenges upon its survivors, including children and adolescents. However, to date, little is known about children's coping efforts and their adjustment following residential fires. The general child disaster literature suggests that a number of factors are predictive of children's postdisaster functioning,

including PTSD symptomatology. These factors include, but are not limited to, time since the event, exposure and loss due to the disaster, demographic variables, social support, and coping efforts. These findings are yet to be replicated and tested with victims of residential fires. Besides general coping, religious coping is an important research area which has received little attention and the role of religious coping has not been studied in children's adjustment to residential fires. Moreover, in the few studies on children's religious coping in contexts of other stressors, as described earlier, only a small number of variables have been typically investigated and only cross-sectional designs have been used. Therefore, the findings of these studies are limited.

Purpose, Research Questions, and Hypotheses of the Present Study

The present study intended to add to this literature by employing a longitudinal design and using a relatively comprehensive battery of measures to explore issues related to religious coping in children and adolescents who experienced residential fires. Specifically, the study explored three research questions.

First, the psychometric soundness of the Religious Coping Activities Scale (RCAS) when used with children and adolescents was examined. Given the lack of research in children's religious coping, the RCAS appears to be a good candidate measure. To date, however, only one study applied the RCAS to adolescents (Olszewski, 1994). Unfortunately, only the Spiritually Based Coping subscale was used in that study and the study only reported the Cronbach's alpha for that subscale (.93). No other psychometric properties of the measure were reported in this adolescent sample.

As an additional reason to use the RCAS to measure religious coping in the current study, an earlier exploratory factor analysis (Khatri, Wang, Jones, & Ollendick, 2000) involving a

subset of the current sample revealed a factor solution similar to the one derived from the original Pargament study. Reliability analyses using the same sub-sample also indicated satisfactory reliability indices for the various factors (Cronbach's alphas ranged from .71 to .94). These results suggest that the RCAS is a promising measure to use with children and adolescents.

Second, variables that predict the level of religious coping efforts in children and adolescents were investigated. This study focused primarily on two dimensions of the RCAS: Spiritually Based Coping and Discontent. Spiritually Based Coping appears to represent a positive approach in religious coping with an emphasis on an intimate, trusting relationship with God in the coping process, whereas Discontent appears to represent a negative approach with a focus of expressing anger and doubt with God and members of the church. It has been found that Spiritually Based Coping is associated with positive outcomes and Discontent associated with poorer outcomes (Pargament et al., 1990). Pargament, Smith, Koenig, and Perez (1998) identified positive and negative patterns of religious coping methods. Although a different measure (Brief RCOPE) was used in their study, most of the items are similar to those in the Spiritually Based Coping and Discontent dimensions of the RCAS. The authors identified the Discontent items as falling in the negative patterns of religious coping and items similar to those in Spiritually Based Coping as falling in the positive patterns of religious coping.

Drawing from the literature, the following variables were examined as potential predictors for child's religious coping efforts: days since the fire, the amount of loss due to the fire, demographic characteristics (sex, race, age, and parents' education level), parents' religious coping, and support from parents. Conceivably, as more time passed by since the fire, the children and their families learned to adapt to the aftermath of the disaster, there would be less

needs to cope with the fire. Therefore, it was hypothesized that days since the fire would be negatively related to both Spiritually Based Coping and Discontent. Loss was expected to be positively related to both dimensions of religious coping in that loss represents the external demands that directly trigger the coping response.

Inasmuch as little research has been done to provide descripters of children's religious coping across different socio-demographic variables, the present study examined these variables in some detail. It was expected that child's sex, race, and parental education level would be related to a child's religious coping in a way similar to that suggested by the adult literature. That is, girls, African Americans, and children whose parents have lower education would engage in more religious coping compared to boys, European Americans, and those with higher parental education. However, based on findings from Tamminen's (1994) large-scale study, we expected the relationship between age and child's religious coping to be different from what the adult literature suggests (i.e., younger children were expected to engage in a higher level of religious coping). Besides the above demographic variables, whether race moderated the relationship between age and child's religious coping was also explored. The effect of race by age interaction has rarely been reported in the literature. However, in earlier data analyses of the RFP (Jones & Ollendick, 2001), it was found that race moderated the relationship between age and general coping (Jones, Wang, & Ollendick, 2001). It was hypothesized that there would be a similar moderation effect on child's religious coping. Due to the lack of research on the race by age interaction, no specific hypotheses were made, however.

Concerning the relationship between children's and parents' religious coping, several theorists have proposed a parallel model based on the social-learning perspective (Hood, Spilka, Hunsberger, & Gorsuch, 1996). That is, children's religious coping is likely to be influenced by

their parents' religious beliefs and practices through modeling and reinforcement contingencies. However, little research has been conducted to test this relationship empirically. Nonetheless, based on social-learning theory, it was hypothesized that parents' Spiritually Based Coping would be positively related to child's Spiritually Based Coping, whereas parents' Discontent would be positively related to their children's Discontent.

As a coping resource, parental support was expected to enhance effective coping. Therefore, based on previous findings from studies conducted by Pargament and colleagues, parental support was hypothesized to be related to Spiritually Based Coping positively and Discontent negatively.

A third major goal of our study was to examine the role of children's religious coping in predicting PTSD symptoms over a period of time. Again, based on Pargament and colleagues' work, it was hypothesized that child's religious coping efforts would be predictive of PTSD symptoms over time. Specifically, Spiritually Based Coping would be negatively related to PTSD symptoms, whereas Discontent would be positively related to PTSD symptoms. It was expected that religious coping would make a unique contribution in predicting child's PTSD symptoms even after controlling other variables including time since the fire, loss, demographic variables, as well as non-religious coping. A series of Pargament's studies on adults' religious coping found that after controlling the effects of non-religious coping, religious coping contributed significantly to the variance of outcome measures (Pargament et al., 1990; Pargament & Brant, 1998). This pattern of findings is yet to be replicated with children and adolescents in their adjustments to residential fires. However, it was expected that similar findings would be obtained with children and adolescents.

Method

Participants

Children and adolescents (age 8-18) who participated in an NIMH-sponsored investigation assessing the impact of residential fire on children and their families (Residential Fire Project -- RFP; Jones & Ollendick, 2001) served as participants in this study. Families were recruited from areas in and surrounding five locales: Atlanta, Georgia; Blacksburg and Richmond, Virginia; Charlotte, North Carolina; and Charleston, South Carolina. Recruiting criteria included: 1) the residential fire was severe enough such that the family lost at least 15% of their home or personal belongings, and 2) the family had a child between 8 and 18 years of age. When there was more than one child in the family who met inclusion criteria, the child whose birthday was closest to the date of the residential fire was identified and recruited for participation. Families who recently experienced fires in their homes were identified through incident reports forwarded to the investigators by fire departments, news reports in the newspaper or on television, and information given out to fire victims about the project by Red Cross agencies. Potential participants were informed about the project through letters and telephone calls. A brief screening survey was then conducted on the telephone. Families who met inclusion criteria were asked if they would be interested in participating in the RFP; subsequently, interviews were arranged for the families who agreed to participate. Approximately one third of the families contacted met inclusion criteria and two thirds of them agreed to participate. Approximately 90 percent of these families completed the first interviews.

Demographic information on the original sample is provided in Table 1. The adults who participated in the study were self-described primary caretakers of the children. One hundred and forty children and their parents or primary caretakers participated in the Time 1 interview, approximately four months after the residential fires. The sample consisted of 74 (53%) African

Americans and 66 (47%) European Americans. There was a higher proportion of African Americans in this sample compared to the national population (12.3% for African American) as well as populations of the four States where the participants resided (ranged 19.6% to 29.5%) (U.S. Census Bureau, 2000). Sixty-three youth (45%) from the sample were boys and 77 (55%) were girls. The mean age of the sample was 12.11 (SD = 2.81). One hundred and twelve (80%) of the adults were mothers, 13 (9.3%) were fathers, 7 (5%) were grandmothers or great grandmothers. Additionally, one caretaker identified herself as the aunt of the child and seven (5%) female caretakers did not identify their relationships with the children. Mean parental education level of the total sample was 4.53 (SD = 1.12) as measured by the Hollingshead's (1975) Index of Social Status, suggesting that the average education level of the families fell between high school graduation and partial college or specialized training. There was no significant difference in parental education between the African American and European American groups. Table 2 lists the distribution of the parents' religious affiliation by ethinicity. As indicated in Table 2, a wide range of religious affiliations was endorsed by both African American and European American parents and most parents of this sample were affiliated with churches of mainstream Christian denominations.

Ninety of the 140 children (64% of the original sample) participated in the Time 2 interviews approximately 11 months after the fire. Finally, 66 children and adolescents (47% of the original sample) participated in the Time 3 interviews, approximately 18 months after the fire.

Procedure

One child and one parent or primary caretaker from each family were assessed approximately four months after they experienced the residential fire. In addition, two follow-up

interviews were conducted approximately 11 months and 18 months after the fire. Each child and his/her parents were interviewed separately by advanced graduate students in an APA-approved clinical psychology training program who had been trained in the administration of the measures. Interviews were carried out in the participants' homes or in public places such as Red Cross offices, neighborhood churches, libraries, or mental health clinics. Measures employed in the present investigation were administered as part of a larger interview that took approximately three hours to complete for parents and one and one half hours for children.

For each assessment, informed consent was obtained from the parents or primary caretakers. In addition, assent was obtained from each child. Overall, the interview consisted of an unstructured interview during which time children and parents were asked to tell their story about the fire. Several self-report measures were also completed that examined the degree of exposure and loss experienced at the time of the fire and the participants' functioning following the fire. Each family was paid $75 for their participation.

Measures

Demographic Information. All demographic information was based on parent-report during the interview. Child's age, gender, ethnicity, and parents' education level were obtained. Parental education information was coded on a scale of 1-7 based on the Educational Factor classification of Hollingshead's (1975) Index of Social Status where 1 = less than 7th grade, 2 = junior high school (9th grade), 3 = partial high school (10th or 11th grade), 4 = high school graduate, 5 = partial college (at least one year) or specialized training, 6 = college or university graduation, and 7 = graduate degree.

Religious Coping Activities Scale (RCAS; Pargament et al., 1990) is a 32-item self-report measure that asks respondents to indicate the extent to which they used each item in their coping

with the fire based on a 4-point likert scale (1 = Not at all; 2 = Somewhat; 3 = Quite a bit; 4 = A great deal; rescaled to be 0-3). Sample items include "Experienced God's love and care" and "Sought support from religious leaders." Both children and their parents filled out the RCAS. These items reflect six facets of religious coping (Spiritually Based Coping, Good Deeds, Religious Support, Plead, Discontent, and Religious Avoidance). Internal consistency estimates ranged from .61 to .92 for the six subscales in the original study (Pargament et al., 1990), .80 to .92 in the current parent sample, and .69 to .94 in the current child sample, respectively.

How I Coped Under Pressure Scale (HICUPS; Ayers, Sandler, West, & Roosa, 1996) is a 45-item self-report checklist that asks children to indicate how often they have used each of a list of coping strategies based on a 4-point Likert scale (1 = Not at all, 2 = A little, 3 = Somewhat, 4 = A lot) in dealing with a single specified incident. Items for the scale were created to reflect 10 distinct categories, subsequently grouped into four factors (Active Coping, Distraction Strategies, Avoidance Strategies, and Support Seeking; Ayers, Sandler, West, & Roosa, 1996). Ayers et al. (1996) showed that the scale possessed acceptable internal consistencies, as measured by coefficient alpha, ranging from .57 to .74 for the 10 subscales. In addition, participants' responses in the original study did not vary as a function of age when they were divided into two groups: ages 10 and under and ages 11 and older. Concerning validity, the comparative fit index (CFI) of .98 suggested that the four factor model fit the data using the HICUPS. Moreover, the factor structure of the measure was supported for both boys and girls (Ayers et al., 1996). The children in this study were asked to complete the questionnaire with reference to the strategies they used to cope with the fire. Internal consistencies for the four major factors in the present study ranged from .77 to .86.

Resource Loss Scale for Children (RLSC; Jones & Ollendick, 1994) was modified for children from the Resources Questionnaire developed by Freedy, Shaw, Jarrell, and Masters (1992). This revised self-report measure consists of 22 items assessing loss following the fire on four factors: object loss (i.e., tangible possessions lost due to the fire such as clothing and toys), energy loss (e.g., free time), condition loss (e.g., a good relationship my parents), and personal characteristics loss (e.g., sense of humor). Children first responded "yes" or "no" to whether or not they experienced the loss of each item. If they answered yes to an item, they were further questioned about the extent of the loss on a 3-point scale (1 = a little, 2 = some, 3 = a lot). The sum of the impact of loss across the 22 items yields the total loss score. Internal consistency for the present sample was .79.

Dubow Social Support Scale (DSSS; Dubow & Ullman, 1989). This 9-item instrument contains items with the highest factor loadings from the original 41-item version designed to measure participants' subjective appraisals of family, teacher, and peer social support. Participants were asked to respond to questions using a 5-point Likert scale. Lower scores indicated that the participant perceived a low level of availability of support from family, teachers, or peers. Higher scores indicated that the participant perceived a high level of availability of support. Internal consistency has been reported as .88, while test-retest reliability for a 3 – 4 week period has been found to be .75 (Dubow & Ullman, 1989). In order to obtain a measure of fire-related social support for this study, three newly devised items were added to this instrument (e.g., "Some kids feel that they are free to talk with their family/teachers/friends about a number of things, but other kids don't feel this way. Do you feel that you are able to talk with your family/teachers/friends about the fire?"). For the present study, only the 4-item family support dimension (the three original family items and the one newly added fire-related family

support item) was used to test the research hypotheses generated. Its internal consistency for the current sample was .89.

Children's Reaction to Traumatic Events Scale (CRTES; Jones, 1996) is a 15-item self-report checklist assessing children's PTSD symptoms (Intrusion and Avoidance) in the past week. A 4-point likert scale is used (0 = Not at all, 1 = Rarely, 3 = Sometimes, 5 = Often). The sum of points on each item yields the total CRTES score. Internal consistency for the current sample was .87. Jones, Fletcher, and Ribbe (2002) suggested the following criteria to distinguish different levels of distress based on the total CRTES score: 0-14 indicates a low distress level; 15-27, moderate distress; and 28 and higher, high distress.

Data Analyses

1. How psychometrically sound is the application of the Religious Coping Activities Scale (RCAS) in children and adolescents?

Analyses for the first research question of the current investigation were aimed at assessing the psychometric soundness of using the Religious Coping Activities Scale (RCAS) with children and adolescents. All analyses were conducted on data from the 123 child and adolescent participants who completed this instrument. SPSS 10.0 was employed to generate the covariance matrix that was subsequently analyzed by LISREL 8.

According to Pedhazur and Schmelkin (1991), exploratory factor analysis (EFA) is used "when it appears or is even expected that the factor structure may be different from the one reported by the author of the measure. This may happen, among other things, because a different type of respondent is being used (e.g., males versus females, young versus old) or changes due to history (e.g., prewar versus postwar conditions)" (p. 69). In the present study, a youth sample (age 8-18) was used whereas the original sample used to develop this measure mainly consisted

of middle age adults (mean age = 46) (Pargament et al., 1990). Therefore, EFA was deemed appropriate for this study.

A confirmatory factor analysis was also conducted to assess how the items loaded onto the original factor structure with the current sample. In addition, internal consistency indices were obtained for each of the 6 subscales derived from the factor analysis.

2. What predicts the level of religious coping efforts in children and adolescents?

Multiple regression analyses were conducted with days since the fire, the amount of loss due to the fire, demographic characteristics (sex, race, age, and parental education level), family support, and parental religious coping entered in this order as predictors and two facets of child's religious coping (Spiritually Based Coping and Discontent) as the response variables. Note that days since the fire, family support, and parental religious coping were measured repeatedly on three occasions. We were interested in how these predictor variables predicted child's religious coping concurrently as well as at a later time point. Therefore, the following six sets of regression analyses were conducted on each of the two facets of child's religious coping:

a) Time 1 predictors → Time 1 child's religious coping
b) Time 1 predictors → Time 2 child's religious coping
c) Time 1 predictors → Time 3 child's religious coping
d) Time 2 predictors → Time 2 child's religious coping
e) Time 2 predictors → Time 3 child's religious coping
f) Time 3 predictors → Time 3 child's religious coping

When predicting child's religious coping at a later time point, child's religious coping measured at an earlier time was entered first in the hierarchical regression for control purposes.

3. How does child's religious coping predict PTSD symptoms over time and does religious coping add to the explanation of PTSD symptoms above and beyond that predicted by non-religious coping?

Two sets of analyses were conducted to address this research question [a]. First, to obtain a full picture of the relationships between the predictor variables and child's PTSD symptoms over time, we employed a mixed-effects regression model. The mixed model imposes a correlation structure on the model such that observations on the same individual are correlated and observations between individuals are independent. This model takes the form:

$$Y_{ij} = \underline{x}'_{ij}\,\underline{\beta} + \delta_i + \varepsilon_{ij}$$

where Y_{ij} is the response of the i^{th} individual at time j, $\underline{x}'_{ij}$ is the vector of predictors for the i^{th} individual at time j, $\underline{\beta}$ is the vector of regression coefficients, $\delta_i \overset{iid}{\sim} N(0,\sigma_\delta^2)$ is the random effect due to individual i, and $\varepsilon_{ij} \overset{iid}{\sim} N(0,\sigma_\varepsilon^2)$ is the standard error term for the regression model. This model further assumes that δ_i and ε_{ij} are independent. These models were introduced by Laird and Ware (1982). For a complete and readable coverage of these models see Schabenberger and Pierce (2001) and for the SAS software implementation of these models see Littell, Milliken, Stroup, and Wolfinger (1996).

Second, a series of hierarchical regression analyses were run with PTSD symptom measure (CRTES) entered as the response variable. The predictor variables were entered in the following sequence: days since the fire, loss, demographic characteristics (sex, race, age, and parental education level), general non-religious coping, and, finally, religious coping (Spiritually Based Coping and Discontent). Thus, child's religious coping variables were entered at the last

Footnote a: A repeated measures analysis was considered. However, inasmuch as complete data were available only for 34 participants, it was not considered further.

step after all other variables were entered into the regression equation. By examining whether they contributed to a significant amount of additional variance in the response variables, we would be able to answer the question of whether they added to the explanation of PTSD symptoms above and beyond the general coping variables.

Furthermore, we wanted to examine how the predictor variables predicted both concurrent PTSD symptoms as well as PTSD symptoms measured at a later time point. Therefore, the outcome variable (i.e., CRTES) was regressed on the predictor variables measured concurrently as well as at previous times. In the latter case, PTSD symptoms measured at the previous interview were entered first in the hierarchical regression for control purposes. Specifically, the following six hierarchical regression analyses were conducted:

a) Time 1 predictors → Time 1 PTSD symptoms

b) Time 1 predictors → Time 2 PTSD symptoms

c) Time 1 predictors → Time 3 PTSD symptoms

d) Time 2 predictors → Time 2 PTSD symptoms

e) Time 2 predictors → Time 3 PTSD symptoms

f) Time 3 predictors → Time 3 PTSD symptoms

Given the exploratory nature of this study, a large number of regression analyses were undertaken. Normally, some adjustments of the significance tests, such as the Bonferroni approach would be recommended to control for Type I error. However, the Bonferroni approach imposes a highly stringent criterion on rejecting the null hypotheses and drastically increases the risk of Type II error. Again, inasmuch as our purpose was to explore potential relationships between child's religious coping and other variables, we wanted to minimize Type II error and

opted to take a relatively liberal approach in reporting the findings. Therefore, we decided not to use the Bonferroni adjustment and reported marginally significant relationships as trends in the next sections. Nevertheless, appropriate precautions should be taken in interpreting the findings, particularly with the significance tests.

Results

The Psychometric Soundness of the RCAS

According to Pedhazur and Schmelkin's (1991) suggestion, raw scores on the 32-item RCAS were entered into an EFA with Principal Axis Factoring (PAF) as the extraction method and an oblique rotation. Using the default cut-off of an eigen value of 1, a six-factor solution was chosen which accounted for 65% of the common variance in the sample. It was noted that only 4 items out of 32 loaded differently from the original factor structure. That is, Item 1 now loaded most highly (.48) with a factor along with the 5 original Plead items and 3 of the original Good Deeds items (Item 13-15) now loaded most highly (.36 to .41) on the first factor along with the other 11 Spiritually Based Coping items in the original scale (See Table 3 for factor loading and Cronbach alphas; item 1, 13, 14, and 15 are in bold and italicized for reading convenience). Factor loadings of all items on other factors were below .3 except for Item 2 (.36 on Religious support and .42 on Spiritually Based Coping). The original Spiritually Based Coping Scale emphasized an intimate partnership between the individual and God in coping efforts, the current analysis adds a response component to this relationship by adding the three items that tap efforts to live one's life that is consistent with one's faith by confessing sins (Item 14), trying to be less sinful (Item 13), and leading a more loving life (Item 15). Given that the children who participated in the present study all experienced fires in their homes (which is different from the original study that asked respondents about their religious coping with significant negative life

events in general), it seems reasonable for children to have perceived Item 1 ("Trusted that God or a higher power would not let anything terrible happen to me") as a plead-like response. Overall, the factor structure yielded from the EFA appears to have satisfactory interpretability and internal consistency (range from .69 to .94) within each subscale. In fact, these internal consistency indices are commensurate with or even slightly higher than those reported in the original study (see Pargament et al., 1990).

A confirmatory factor analysis (CFA) was also conducted. The resulting four common indices for assessing model fit are listed below:

1) Chi square = 668.16, df = 449, p-value = .0000), which is very significant, indicating poor fit.
2) Goodness of fit = .74, which suggests poor fit
3) Adjusted goodness of fit = .70, which suggests poor fit
4) Root mean square error of approximation = .063 (ideally less than .05), suggesting borderline fit.

Overall, these indices suggest a poor fit of the original model with the youth sample in this study. Therefore, the factor structure from EFA for children's religious coping was used for subsequent analyses in this study.

Table 4 shows the means and standard deviations for the six factors as well as their correlations based on Time 1 data in the youth sample. As indicated in Table 4, children scored the highest on Spiritually Based Coping and the lowest on Discontent. In addition, Spiritually Based Coping was highly correlated with other factors except for Discontent. Compared with other bivariate correlations, Discontent had the lowest correlations with other factors.

Descriptive Statistics

Means, standard deviations, and internal consistency reliability estimates of all variables appear in Table 5. All internal consistency reliability estimates were acceptable (range from .72 to .94) for the included variables.

Days since the fire. Despite efforts to interview the families for the first time approximately one month after the fire and six months and 12 months thereafter, we were unable to interview these families according to this timeframe due to various reasons, such as family relocation, delay in getting in touch with the families since the fire, and scheduling difficulties for the interviews. As indicated in Table 5, the average duration between the fire and Time 1 interview was close to 16 weeks or four months. On average, Time 2 interviews were conducted approximately 11 months since the fire, and Time 3 interviews were conducted approximately 18 months following the fire. The large standard deviations for each time also suggested there was significant variability in the days since the fire for each assessment wave. Given this variability and evidence from research that PTSD symptoms tend to diminish as time passes (e.g., La Greca et al., 1996; Jones & Ollendick, 2002), it is important to take this time factor into account in our subsequent analyses in predicting children's PTSD symptoms following the fire.

Resource loss. Children in this study reported a wide range of resource loss due to the fire (Mean = 14.91, SD = 8.99; ranged from 0 to 45).

Family support. In general, children perceived increased support from their families as time passed by since the fire.

Religious coping. Overall, it appeared that both children and their parents reported little changes in their religious coping efforts over time. However, both groups indicated increased variability in Spiritually Based Coping over time. On the other hand, children reported lower

level of Spiritually Based Coping but higher level of Discontent at all three times than did their parents.

General coping. On average, children reported decreased use of both Active Coping and Avoidance Strategies over time. In addition, increased variability of these two coping strategies was reported over time.

PTSD symptoms. Overall, children reported decreased severity of PTSD symptoms over time. Specifically, 33%, 26%, and 41% of children at Time 1 interview, 56%, 12%, and 32% of children at Time 2, and 59%, 19%, and 22% of children at Time 3 reported low, moderate, and high levels of distress, respectively.

Attrition Analyses

As noted earlier, some of the participants only completed the Time 1 interview, some others completed both Time 1 and Time 2 interviews, and others participated in all three assessments. Table 6 shows the means and standard deviations of major variables based on Time 1 data for the three groups of participants. In addition, t tests were conducted to compare the means of the variables between the groups. As shown in Table 6, children who only completed Time 1 assessment appeared to score higher on Spiritually Based Coping than those who completed both Time 1 and Time 2 assessments. The difference was only marginally significant however. In addition, children who only completed Time 1 assessment scored higher on Avoidance Strategies than those who completed all three assessments. There were no other significant differences on the variables between the three participant groups. Moreover, the proportions of females and African Americans in the groups were compared. It was found that there was a marginal significant difference in the proportion of African Americans between the group of children who only completed Time 1 assessment and the group who completed all three

assessments with the former having a higher percent of African Americans. No other differences were observed.

Age Analyses

Inasmuch as there was a wide range of ages in the participants, we divided the participants into a child group (ages 8-12) and an adolescent group (ages 13 to 18) and compared the means of major variables between the two groups based on Time 1 data. As shown in Table 7, parents of the adolescent group appeared to have higher levels of education than the parents of children and child participants scored higher on Spiritually Based Coping than adolescent participants. Proportions of participants by sex and ethnicity were also compared. The proportion of females in the adolescent group was found to be significantly higher than that in the child group. There was no significant difference in the composition of ethnicities between the two groups. Moreover, Cronbach alphas were computed for the Time 1 variables for both groups. As indicated in Table 7, internal consistency of the major variables ranged from .76 to .92 for the child group and .63 to .96 for the adolescent group. All were found to be in the significant range. Based on these analyses, it appeared acceptable to analyze the children and adolescents together in the subsequent analyses.

Regression Analyses

Prediction of children's religious coping. The second research question was aimed at exploring variables that might predict the level of religious coping efforts in children. Multiple regressions were conducted with the number of days since the fire, resource loss, demographic variables (parent's education, child's sex, race, age, and race × age), family support (again family only), and parent's religious coping entered in that order as predictors and children's religious coping (including Spiritually Based Coping and Discontent) as the response variables.

The same set of regression analyses were run for the child's Spiritually Based Coping and Discontent, respectively, except that parent's Spiritually Based Coping was included when predicting child's Spiritually Based Coping, whereas parent's Discontent was included when predicting children's Discontent. In order to test the predictive power of the predictors over time, response variables at a certain time point were regressed on the predictor variables measured at the same time or at previous times. Specifically, six regressions analyses were conducted for each response variable, including: Time1 variables predicting Time1 response (Time 1 → Time 1), Time 1 variables predicting Time 2 response (Time 1 → Time 2), Time 1 variables predicting Time 3 response (Time 1 → Time 3), Time 2 variables predicting Time 2 response (Time 2 → Time 2), Time 2 variables predicting Time 3 response (Time 2 → Time 3), and Time 3 variables predicting Time 3 response (Time 3 → Time 3). When predicting the response variables at a later time point, the response variable measured at an earlier time was also entered following the days since fire as a control variable.

Spiritually Based Coping. Tables 8 to Table 13 showed the results of regression analyses when predicting children's Spiritually Based Coping. As shown in Table 8 (Time 1 → Time 1), results indicated that days since fire and loss at steps 1 and 2 did not contribute significantly to the prediction of children's Spiritually Based Coping. However, demographic variables accounted for a significant portion of the variance in children's Spiritually Based Coping at the third step (R^2 =.163, F(5,85) = 3.422, p = .007). Perceived family support at step 4 did not contribute significantly to the variance in children's Spiritually Based Coping. However, parent's Spiritually Based Coping, entered at the last step, accounted for an additional 3.5% of the variance in children's Spiritually Based Coping (F change (1,83) = 3.716, p = .057), a marginally significant finding. When all predictors were entered in the model, they accounted for

22.8% of the variance in children's Spiritually Based Coping. The following variables had significant or marginally significant coefficients: days since the fire (β = .183, t = 1.754, p = .083), loss (β = .233, t = 2.167, p = .033), age (β = -.360, t = -2.350, p = .021), and parent's Spiritually Based Coping (β = .202, t = 1.928, p = .057).

Results in Table 9 (Time 1 → Time 2) indicated that children's Spiritually Based Coping measured at Time 1 was the only variable that accounted for a significant portion of the variance in children's Spiritually Based Coping measured at Time 2 (R^2 = .409, F(1,44) = 31.739, p = .000). When all variables were included in the model, they accounted for 54.9% of the total variance in children's Spiritually Based Coping measured at Time 2. In the full model, the only variable that had a significant regression coefficient continued to be children's Spiritually Based Coping measured at Time 1 (β = .642, t = 4.615, p = .000).

Table 10 (Time 1 → Time 3) showed that days since fire entered at step 1 accounted for a marginally significant portion of variance in children's Spiritually Based Coping at Time 3 (R^2 =.084, F(1,44) = 4.029, p = .051). Children's Spiritually Based Coping measured at Time 1 at step 2 also contributed significantly to the variance in children's Spiritually Based Coping measured at Time 3 (R^2 = .160, F(1,43) = 9.097, p = .004). In addition, family support entered at Step 5 added a marginally significant portion of variance (R^2 = .060, F(1,36) = 3.480, p = .070).When all variables were included in the model, they accounted for 38.6% of the total variance in children's Spiritually Based Coping measured at Time 3. In the full model, only two variables had significant regression coefficients: days since fire (β = -.343, t = -2.080, p = .045) and children's Spiritually Based Coping measured at Time 1 (β = .467, t = 3.058, p = .004).

As shown in Table 11 (Time 2 → Time 2), results indicated that demographic variables at step 3 contributed to a marginally significant portion of variance in children's Spiritually Based

Coping measured at Time 2 (R^2 = .190, F (5,45) = 2.134, p = .079) and family support entered at step 4 accounted for a significant portion of the variance in the response variable (R^2 = .095, F(1,44) = 5.960, p = .019). When all variables were included in the model, they accounted for 33.1% of the total variance in the response variable. In the full model, the only variable that had a significant regression coefficient continued to be perceived family support (β = .329, t = 2.357, p = .023). In addition, the coefficients of resource loss and children's age approached significance (β = .251, t = 1.699, p = .096; β = -.337, t = -1.858, p = .070, respectively).

Results in Table 12 (Time 2 → Time 3) indicated that children's Spiritually Based Coping measured at Time 2 was the only variable that accounted for a significant portion of the variance in children's Spiritually Based Coping measured at Time 3 (R^2 = .345, F (1,33) = 17.912, p = .000). In addition, loss entered at step 3 accounted for a marginally significant portion of variance in children's Spiritually Based Coping at Time 3 (R^2 = .072, F (1,32) = 4.082, p = .052). When all variables were included in the model, they accounted for 51.6% of the total variance in children's Spiritually Based Coping at Time 3. In the full model, children's Spiritually Based Coping at Time 2 continued to be the only variable that had a significant regression coefficient (β = .640, t = 3.388, p = .002).

Table 13 (Time 3 → Time 3) showed that none of the predictor variables entered accounted for a significant portion of variance in children's Spiritually Based Coping at Time 3. When all variables were included in the model, they only accounted for 19.8% of the total variance in the response variable. In the full model, none of the variables had significant regression coefficients.

Religious Discontent. Tables 14 to 19 showed the results of regression analyses when predicting children's Religious Discontent. As shown in Table 14 (Time 1 → Time 1), results

indicated that days since fire, demographic variables, and family support at steps 1, 3, and 4 failed to contribute significantly to the variance in children's Religious Discontent. However, loss and parent's Religious Discontent entered at steps 2 and 5 both accounted for significant portions of the variance in children's Discontent (R^2 = .069, F (1,91) = 6.783, p = .011; R^2 =.058, F(1,84) = 5.884, p = .017; respectively). When all predictors were entered in the model, they accounted for 17.2% of the variance in children's Religious Discontent. Only two variables had significant coefficients: loss (β = .224, t = 2.032, p = .045) and parent's Religious Discontent (β = .247, t = 2.426, p = .017).

Results in Table 15 (Time 1 → Time 2) indicated that days since the fire and resource loss contributed to a marginally significant portion of variance in children's Religious Discontent at Time 2 (R^2 = .075, F(1,45) = 3.636, p = .063; R^2 = .046, F(1,43) = 2.989, p = .091). In addition, children's Religious Discontent at Time 1 accounted for a significant portion of the variance in the response variable (R^2 = .220, F(1,44) = 13.714, p = .001). No other variable contributed significantly to the variance in the response variable. When all variables were included in the model, they accounted for 44.2% of the total variance in children's Religious Discontent measured at Time 2. In the full model, the following three variables had significant or marginally significant regression coefficients: days since fire (β = -.267, t = -1.859, p = .071), child's age (β = -.334, t = -1.785, p = .083), and children's Religious Discontent at Time 1 (β = .585, t = 3.499, p = .001).

Analyses in Table 16 (Time 1 → Time 3) showed that days since the fire, children's Religious Discontent at Time 1, demographic variables, and family support at step 1, 2, 4, and 5 accounted for significant or marginally significant portions of variance in children's Religious Discontent at Time 3 (R^2 =.155, F(1,44) = 8.070, p = .007; R^2 =.131, F(1,43) = 7.915, p = .007;

R^2 =.154, F(5,37) = 2.098, p = .088; R^2 =.066, F(1,36) = 4.989, p = .032; respectively), whereas the other two variables did not contribute significantly. In the full model, all predictors accounted for 53.3% of the total variance in children's Religious Discontent measured at Time 3 and the following variables had significant or marginally significant regression coefficients: days since fire (β = -.392, t = -2.779, p = .009), children's Religious Discontent at Time 1 (β = .279, t = 1.864, p = .071), children's sex (β = -.311, t = -2.255, p = .031), and family support (β = .275, t = 2.248, p = .031). A close inspection of the regression coefficient of children's sex suggested that girls overall exhibited a higher level of Religious Discontent than boys at time 3.

As shown in Table 17 (Time 2 → Time 2), results indicated that the days since fire entered at the first step was the only variable that accounted for a marginally significant portion of the variance in children's Religious Discontent at Time 2 (R^2 = .061, F(1,51) = 3.302, p = .075). When all variables were included in the model, they accounted for 19.5% of the total variance in the response variable. In the full model, the coefficients of the following three demographic variables approached significance: child's age (β = -.338, t = -1.729, p = .091), race (β = -1.043, t = -1.731, p = .091), and the age × race interaction (β = 1.061, t = 1.761, p = .085).

Results in Table 18 (Time 2 → Time 3) indicated that days since fire, children's Religious Discontent at Time 2, and demographic variables contributed significantly to the variance in children's Religious Discontent at Time 3 (R^2 = .137, F(1,34) = 5.386, p = .026; R^2 =.248, F(1,33) = 13.310, p = .001; R^2 =.181, F(5,27) = 2.626, p = .046; respectively). In addition, loss entered at step 3 added a marginally significant portion of variance in the response variable (R^2 =.063, F(1,32) = 3.636, p = .066). Family support and parent's Religious Discontent did not contribute significantly. When all variables were included in the model, they accounted for 65.8% of the total variance in children's Religious Discontent at Time 3. In the full model, the

following variables had significant or marginally significant regression coefficients: days since fire (β = -.250, t = -1.852, p = .076), children's Religious Discontent at Time 2 (β = .342, t = 2.463, p = .021), loss (β = .301, t = 1.999, p = .057), and children's sex (β = -.327, t = -2.291, p = .031). Similar to the results from Table 16, girls exhibited a higher level of Religious Discontent than boys at time 3.

Table 19 (Time 3 → Time 3) showed that days since the fire, demographic variables, and parent's Religious Discontent contributed significantly to the variance in children's Religious Discontent at Time 3 (R^2 = .133, F(1,46) = 7.051, p = .011; R^2 =.241, F(5,40) = 3.461, p = .011; R^2 =.119, F(1,38) = 10.844, p = .002; respectively). In addition, loss entered at step 2 added a marginally significant portion of variance in the response variable (R^2 =.069, F(1,45) = 3.879, p = .055). Family support did not contribute significantly. In the full model, all predictors accounted for 58.3% of the total variance in the response variable and the following variables had significant or marginally significant regression coefficients: days since the fire (β = -.295, t = -2.477, p = .018), loss (β = .313, t = 2.447, p = .019), and children's sex (β = -.331, t = -2.808, p = .008), children's age (β = -.290, t = -1.938, p = .060), and parent's Religious Discontent (β = .378, t = 3.293, p = .002).

In summary, the concurrent regression analyses (i.e., Time 1 → Time 1, Time 2 → Time 2, and Time 3 → Time 3) indicated that days since the fire significantly predicted Time 3 Discontent, loss significantly predicted both Spiritually Based Coping and Discontent at Time 1 as well as Discontent at Time 3. Child's age significantly predicted Time 1 Spiritually Based Coping. It was also a marginally significant predictor of Spiritually Based Coping at Time 2 and Discontent at both Time 2 and Time 3. Child's sex significantly predicted Time 2 Discontent. Race and race by age interaction were marginally significant in predicting Time 2 Discontent.

Family support only significantly predicted Time 2 Spiritually Based Coping. Parent's Spiritually Based Coping was a marginally significant predictor of child's Spiritually Based Coping at Time 1, whereas parent's Discontent significantly predicted child's Discontent at both Time 1 and Time 3. The above summary is presented in Table 20. Table 20 also shows the summary of findings in cross time regression analyses (i.e., Time 1 → Time 2, Time 1 → Time 3, and Time 2 → Time 3). Results of the cross time analyses indicated that child's religious coping measured at an earlier time significantly or marginally significantly predicted child's religious coping at a later time. Days since the fire was a significant or marginally significant predictor of religious coping except for Time 2 Spiritually Based Coping in presence of other Time 1 predictors and for Time 3 Spiritually Based Coping in presence of other Time 2 predictors. After controlling for days since the fire and child's religious coping measured at an earlier time, no other variables appeared to be predictive of later Spiritually Based Coping. On the other hand, a few variables added significant or marginally significant portions of variance to Discontent, including child's age for Time 2 Discontent, loss, child's sex, and family support for Time 3 Discontent.

Full model prediction of children's PTSD symptoms over time with hot deck missing data techniques. In order to take advantage of the longitudinal design of this study and to obtain an overall picture of the relationships between the predictor variables and child's PTSD symptoms over time, we employed a mixed-effects regression model.

Before running the mixed-effects regression analysis, we encountered the issue of missing data (see Table 21 for the rate of missing values for each variable), a problem that is not uncommon in longitudinal research. To address this issue, we first examined the properties of our data. Some of the predictor variables were discrete variables and hence were not normally

distributed, such as the demographic variables (including parent's education level, child's sex, age, and race). We also checked other predictor variables for their distribution by running normal probability plots. For example, Figures 1 and 2 show the normal probability plots for Days since the Fire, Parental Education Level, Child's Age, Resource Loss, Active Coping, Avoidance Strategies, Spiritually Based Coping, and Religious Discontent. From this, it can be seen that most of the predictor variables did not follow the straight line pattern needed to assume normality or approximate normality. Since our data did not meet the necessary multivariate normality assumption, it was not appropriate to employ the standard methods for addressing the problem of missing data. Therefore, we used alternative methods that are robust to this condition. After consulting with statistical experts at the Statistics Department at Virginia Tech and discussion with the RFP research team, we elected to use the Hot Deck Method of Rubin and Little (1986), also known as the Bootstrap Method of Efron (1994). The Bootstrap method is an iterative process that substitutes observed values, at their corresponding frequency, for the missing values and then averages the results over these iterations. This method assumes Missing Completely At Random (MCAR), i.e., the assumption that the variable is not missing because of its value or the value of any other variables (see Rubin, 1976). Due to the fact that the imputed data comes from the empirical distribution of the data, we assumed that this distribution adequately represents the underlying distribution from which the data arose. Compared to other missing data techniques, the Bootstrap method is a conservative one in that the missing data are substituted by observed values randomly selected from the pool of all the observed values and no underlying relationships among the variables were assumed in the data imputation process.

Note that some of the participants were interviewed at Time 2 and some others also at Time 3. Therefore, we have some predictor variables repeatedly measured, including Active

Coping, Avoidance Strategies, Spiritually Based Coping, and Religious Discontent. To address the issue of repeated measure we used a mixed-effects regression model.

To fit our model we used the SAS system to create the imputed data sets and analyzed each using the PROC MIXED procedure. We then averaged over the imputations to arrive at our estimates for our parameters. For our analysis, we used 200 imputation steps noting that the coefficient estimates appeared to converge to stable values after approximate 110 imputations. Indeed, convergence diagnostics showed that convergence was achieved before 125 iterations for all the models. Due to the complexity of our model, no exact tests were available to test between models. Also, the PROC MIXED procedure does not yield an index equivalent to the R^2 as in the standard multiple linear regression model. Instead, we present here the point estimates of the coefficients for each model and their corresponding approximate p-values.

The variables were entered into the regression model in groups to assess the stability of the coefficients at each stage. Table 22 showed the results of the mixed-effects regression analyses with child's PTSD symptoms as the response variable. In each of the nested models the coefficient interpretations are the same as in the standard multiple linear regression setting.

Table 22 indicated that as more variables were added to the model, loss, days since the fire, child's age, race, and race × age remained significant predictors for child's PTSD symptoms over time, whereas child's sex, parental educational level, Active Coping, Avoidance Strategies, Spiritually Based Coping, and Religious Discontent were not significant predictors. Further analysis of the estimate of the race by age interaction term suggested that overall younger (i.e., less than 12 years old) African American children reported lower levels of PTSD symptoms than their European American peers. However, African American children reported increased severity of PTSD symptoms as their age increased, whereas European American children reported their

PTSD symptoms decreased as their age increased at a higher rate than the increase rate of African American children.

Time specific prediction of child's PTSD symptoms. Tables 23 to 28 showed the results of regression analyses when predicting concurrent and later child's PTSD symptoms.

Table 23 (Time 1 → Time 1) indicated that only loss and demographic variables contributed significantly to the variance of child's PTSD symptoms at Time 1 (R^2 =.139, $F(1,72) = 11.629$, $p = .001$; R^2 =.150, $F(5,67) = 2.849$, $p = .022$; respectively). The full model accounted for 34.5% of the total variance in the response variable and the following variables had significant regression coefficients: loss ($\beta = .269$, $t = 2.281$, $p = .026$), child's age ($\beta = -.337$, $t = -2.089$, $p = .041$), child's race ($\beta = -1.279$, $t = -2.662$, $p = .010$), and race × age ($\beta = 1.299$, $t = 2.569$, $p = .013$). Further analysis of the regression coefficient of the race by age interaction term suggested that younger African American children reported lower levels of PTSD symptoms than their European American peers. However, African American children reported increased severity of PTSD symptoms as their age increased, whereas European American children reported the opposite trend. That is, European American children reported decreased PTSD symptoms as their age increased.

Results in Table 24 (Time 1 → Time 2) indicated that child's PTSD symptoms at Time 1 at step 2 was the only variable that accounted for a significant portion of the variance in child's PTSD symptoms at Time 2 ($R^2 = .226$, $F(1,43) = 12.607$, $p = .001$). In addition, child's religious coping at Time 1 which was entered at the last step contributed to a marginally significant portion of variance in the response variable ($R^2 = .110$, $F(2,33) = 3.035$, $p = .062$). No other variables contributed significantly to the variance in the response variable. When all variables were included in the model, they accounted for 40.1% of the total variance in child's PTSD

symptoms at Time 2. In the full model, Religious Discontent had a significant regression coefficient (β = -.383, t = -2.274, p = .030) and the coefficient of child's PTSD symptoms at Time 1 approached significance (β = .314, t = 1.776, p = .085).

Similar to Table 24, Table 25 (Time 1 → Time 3) showed that child's PTSD symptoms and religious coping at Time 1 at step 1 and 6 accounted for significant portions of variance in child's PTSD symptoms at Time 3 (R^2 = .303, F(1,35) = 16.749, p = .000; R^2 = .108, F(2,25) = 3.694, p = .039; respectively), whereas the other variables did not contribute significantly. In the full model, all predictors accounted for 63.5% of the total variance in the response variable. The following two variables had significant regression coefficients: loss (β = .436, t = 2.214, p = .036) and child's Religious Discontent at Time 1 (β = -.417, t = -2.598, p = .015).

As shown on Table 26 (Time 2 → Time 2), results indicated that loss entered at step 2 contributed to a marginally significant portion of variance in child's PTSD symptoms at Time 2 (R^2 = .071, F(1,49) = 3.754, p = .058). In addition, child's general coping at step 4 accounted for a significant portion of the variance in the response variable (R^2 = .250, F(2,42) = 9.687, p = .000). Variables entered at the other steps did not contribute significantly to the variance in the response variable. When all variables were included in the model, they accounted for 46.2% of the total variance in child's PTSD symptoms at Time 2. In the full model, only Avoidance Strategies had a marginally significant regression coefficient (β = .450, t = 1.982, p = .054).

Similar to Table 25, results in Table 27 (Time 2 → Time 3) showed that child's PTSD symptoms and religious coping at Time 2 at step 1 and 6 accounted for significant portions of variance in child's PTSD symptoms at Time 3 (R^2 = .408, F(1,35) = 25.807, p = .000; R^2 = .107, F(2,25) = 4.202, p = .027; respectively), whereas the other variables did not contribute significantly. In the full model, all predictors accounted for 68.1% of the total variance in the

response variable and the following variables measured at Time 2 had significant regression coefficients: child's PTSD symptoms ($\beta = .447$, $t = 2.805$, $p = .010$), Avoidance Strategies ($\beta = .584$, $t = 2.437$, $p = .022$), and child's Religious Discontent ($\beta = -.393$, $t = -2.869$, $p = .008$).

Table 28 (Time 3 → Time 3) showed that loss entered at step 2 was the only variable that contributed significantly to the variance in child's PTSD symptoms at Time 3 ($R^2 = .207$, $F(1,46) = 12.480$, $p = .001$). The full model accounted for 45.2% of the total variance in the response variable and only loss had a significant regression coefficient ($\beta = .392$, $t = 2.178$, $p = .036$).

Significant findings in the prediction of PTSD symptoms are summarized in Table 29. As can be seen, Time 1 → Time 1 regression revealed the same results as the mixed-effects model, except that days since the fire was not a significant predictor in this analysis. Loss significantly predicted PTSD at Time 1 and Time 3 in the presence of other Time 1 and Time 3 predictors, respectively. Avoidance strategies at Time 2 was a marginally significant predictor of PTSD at Time 2 and a significant predictor of PTSD at Time 3. Moreover, the three cross time analyses consistently indicated that Discontent significantly predicted later PTSD symptoms.

Discussion

Summary and Interpretation

This study represents one of the first attempts to investigate the role of religion in the coping efforts of children and adolescents following residential fires. This study addressed three gaps in the literature on children and disaster. First, there is no well-established tool in the literature to measure children's religious coping. We examined the psychometric soundness of the application of an existing adult religious coping measure (i.e., the Religious Coping Activity Scale, Pargament et al., 1990) in children and adolescents and the findings appear promising. Second, although a number of studies have investigated variables that predict adult's religious coping, little is known about factors that contribute to children's religious coping efforts over an

extended period of time. Guided by the concept of coping resource of Lazarus and Folkman (1984) and Pargament's (1998) classification of three forces that shape adult's religious coping, this multiwave study addressed the prediction of child's religious coping over time. Third, this longitudinal study examined the contributions of religious coping and other variables in predicting both short-term and longer-term PTSD symptoms in children following residential fires. By addressing the three issues, this study provided the opportunity to advance our understanding of the role of religion in the dynamic process of children's coping with the aftermath of disasters.

It should be noted, however, that besides the unique experience of residential fires, our participants all came from four adjacent Southeastern states in the United States. As suggested by Pargament (1997) and Ferraro and Koch (1994) different geographic locations may bear different cultures that influence religious beliefs and practices. This particular geographic area may provide a unique cultural environment that has shaped the children's religious experiences. Moreover, there was a higher percent of African Americans in our sample than that in national and state populations. This finding suggests that residential fires occur more often in the homes of African Americans than in the homes of European Americans. A number of factors may contribute to this ethnic difference, such as lower levels of income associated with poorer living condition and fire safety equipment. While the sample of this study may be representative of the population of residential fire victims, it is clearly not representative of the general population, nor is it our intention to suggest that it does represent the general population. Therefore, caution should be taken in generalizing the findings of the present study to the other populations.

The Psychometric Soundness of the RCAS

Findings from both exploratory and confirmatory factor analyses suggested that it was appropriate to use the RCAS with children and adolescents with some minor changes to the original factor structure. That is, exploratory factor analyses revealed the same six-factor structure as in the original scale with the exception of four items which now loaded on two different factors. The reliability coefficient for each subscale was satisfactory.

The similarity between the factor structures derived from the original adult sample and the current child sample may suggest that children utilize their faith in a similar way as adults do when coping with disasters in their lives. However, a closer look at the four items that loaded differently in the factor structures indicates important differences between adults and children in their religious cognition or belief system and religious coping efforts.

Item 1 is "Trusted that God or a higher power would not let anything terrible happen to me." It was one of the items in the Spiritually Based Coping subscale in the original study and it now loaded most highly (.48) on the Plead factor along with the five original Plead items. In addition, Item 13 ("Tried to be less sinful"), 14 ("Confessed my sins"), and 15 ("Led a more loving life") from the original Good Deeds factor now loaded most highly (.36 to .41) on the Spiritually Based Coping factor. It was noted that the participants in the original study and in the current one were asked to respond to different events when answering the RCAS. In the original study (Pargament et al., 1990), the adult participants were asked to respond to general negative life events, whereas in the present study children were asked to respond to the residential fire. It is possible that the unique experience of fire might activate one's religious coping in unique ways. For instance, as a recent terrible disaster in and of itself, the residential fire might have also brought considerable uncertainty into the children's lives. They might have worried about having their basic needs met, financial problems, family relocation, and change of school, to

name a few. The extensive impact of the fire on their lives might have led the children to perceive Item 1 as a plead to God rather than a statement of faith. In other words, children in this study might read Item 1 as "God, please help me and do not let anything terrible happen to me after the fire." Developmentally, adults with their life experiences and a higher sense of control may have developed an intrinsic faith that God would carry them through any difficulties. Comparatively, children who are less experienced, may have tended to feel more apprehensive and helpless when facing major disasters such as the residential fire. Consequently, they are more likely to plead with God or adults they trust to help them cope.

Other developmental differences between adults and children in their cognition may help explain the different loadings of Items 13 to 15. From the perspective of cognitive development, adults are able to engage in abstract operation and are more able to separate their beliefs and their actions, whereas children are more concrete in their thinking process and are likely to express their beliefs through their actions. From the perspective of Fowler's stages of faith, the majority of the participants in our study might fall in the "Mythic-literal" stage of faith, which is characterized with concrete understandings of God or a higher power and of the connections between behavior and consequences. In this study, the children might have used the actions indicated by Items 13 to 15 to express a close relationship with God, which is the primary focus of the Spiritually Based Coping factor. Nonetheless, the above interpretation should be viewed as speculative and treated as research hypotheses for future replicating studies.

Although it is always preferable to design an instrument through the standard process of deriving items from literature review, interviews with a sample of the population intended, consultation with experts in the area of research interest, and then testing the psychometric properties of the measure with another sample, revising it, and repeating the above algorithm

until it can be satisfactorily finalized, such a procedure typically costs a tremendous amount of time and energy. In recent years, researchers have just begun to devote such extensive efforts to develop measures of children's spiritual and religious coping (e.g., Boeving, 2003; Pendleton et al, 2002). However, no standard measures have emerged yet from these efforts. At the same time, findings from this study suggest that the RCAS may serve as a useful exploratory instrument to study children's religious coping efforts while alternative measures are being constructed and tested.

Prediction of Children's Religious Coping

Descriptively, on average, both parents and children endorsed a relatively high level of Spiritually Based Coping (1.73-2.20 on a 0-3 scale) and a relatively low level of Religious Discontent (.24-.51 on a 0-3 scale). Although it appeared on the group level that both parents and children reported little change of both types of religious coping over the three assessment waves, this global statistic could be deceiving. Indeed, a closer examination of the data profiles indicated a good range of variability between subjects in terms of changes of the levels of child's religious coping efforts over the three assessment waves. Thus it was meaningful to study variables that might predict child's religious coping over time.

In predicting child's Spiritually Based Coping and Religious Discontent, several interesting patterns emerged. Both similarities and differences were noted. We will highlight the findings of some variables that appeared to play important roles in predicting child's religious coping.

It was hypothesized that the length of time since the fire would be negatively related to child's religious coping efforts. This appeared to be more true in predicting child's Religious Discontent at the second and third assessment waves. This time factor only became a significant

predictor for child's Spiritually Based Coping at the Time 3 interview when entered into the regression equation with other Time 1 variables. Although the regression coefficient of days since fire in the full model was marginally significant in predicting Time 1 Spiritually Based Coping, it contributed minimally (1%) to the variance of the response variable when entered at the first step. Therefore, it did not appear to be significantly related to child's Spiritually Based Coping at Time 1.

Resource loss was hypothesized to be positively related to child's religious coping efforts. This was supported in predicting child's Spiritually Based Coping and Religious Discontent at the first assessment wave. Resource loss continued to be an important predictor for child's Religious Discontent at the third wave in the presence of other Time 3 variables. However, it did not appear to be a significant predictor in the presence of other variables for child's Religious Discontent at Time 2, nor for child's Spiritually Based Coping at Time 2 or Time 3.

Two demographic variables emerged as potentially significant predictors for child's religious coping in some of the analyses. Particularly, child's sex significantly predicted child's Religious Discontent measured at Time 3, but not for Time 1 or Time 2, nor was it a significant predictor for child's Spiritually Based Coping at any of the three assessment waves. Specifically, girls endorsed higher level of Religious Discontent than boys at Time 3 interview. This is consistent with the general finding from the adult literature that females tend to engage in higher level of religious coping than males. However, in the present study no other differences were indicated between boys and girls in their Spiritually Based Coping or Religious Discontent across the three waves. Moreover, there is some evidence suggesting that child's age appeared to be negatively related to Spiritually Based Coping at Time 1 and Time 2 and Religious Discontent

at Time 2 and Time 3, which is consistent with previous findings (e.g., Tamminen, 1994). The findings of the age effect on religious coping at Time 1 were also supported by the age group analyses, which indicated that at the first assessment wave children reported higher levels of Spiritually Based Coping than adolescents but that no group difference in Discontent was observed between children and adolescents. Child's race and parent's education level did not seem to predict child's religious coping.

At Time 1 interview, parent's corresponding facets of religious coping appeared to be significant predictors for both child's Spiritually Based Coping and Discontent. In addition, parent's Discontent at Time 3 is one of the significant predictors for child's Discontent at Time 3. As expected, parent's religious coping variables were positively related to child's religious coping. At the second assessment wave, family support significantly predicted child's Spiritually Based Coping. The direction of their relationship suggested that the more family support perceived, the higher level of child's Spiritually Based Coping, which was in support of our hypothesis. However, family support measured at Time 1 was also found to be positively related to child's Religious Discontent at Time 2, which was contrary to our hypothesis. We expected that support from family members would enhance a more positive pattern of coping and ease the child's anger or disappointment with God due to the fire. Our data suggested this was not the case. The reason why the two variables were positively related remains unclear.

To examine the findings from a different perspective, it is noted that in cross time regression analyses child's religious coping measured at an earlier assessment wave appeared to capture most of the variance of the corresponding type of religious coping measured at a later time and emerged as the only significant predictors or one of the significant predictors (with the only exception of Time1 → Time 3 prediction of child's Discontent, where at step 2 child's

Discontent at Time 1 accounted for a significant portion of variance of child's Discontent at Time 3, but became marginally significant when other variables were added to the regression model). This pattern of findings was expected and it was the reason why we purposefully entered these variables in the early steps to control for their contributions. By the same token, these cross-time analyses highlighted the unique contributions of the other variables that emerged as significant predictors for child's religious coping. These variables included time since the fire in predicting child's Religious Discontent at both Time 2 and Time 3, child's sex, resource loss, and initial family support (measured at Time 1) in predicting Time 3 Discontent.

We would like to highlight two differences between Spiritually Based Coping and Religious Discontent in the patterns of their relationships with the predictors. First, they appeared to be related to the length of time since the fire differently. Although at Time 1, days since the fire did not appeared to be related to Spiritually Based Coping nor Discontent. This predictor accounted for much higher proportions of variance in Discontent at Time 2 and Time 3 than for the variance in Spiritually Based Coping. Second, when predicting child's religious coping at a later time, other predictors contributed more to Discontent than to Spiritually Based Coping after controlling for days and corresponding religious coping variables measured at an earlier time. Overall, our regression model predicted Discontent better than Spiritually Based Coping.

Some differences between Spiritually Based Coping and Discontent should be noted to aid in the interpretation of the different patterns of findings. First, Spiritually Based Coping consisted of more items (14) than Discontent (3). Second, as conceptualized by Pargament et al. (1990), religious coping is a complex and multidimensional construct. It has cognitive, behavioral, emotional, and interpersonal components. Religious coping has personal, spiritual,

and social dimensions. It can be both active and passive or avoidant. From this perspective, Discontent is more clearly defined by its emotional focus, whereas Spiritually Based Coping is more reflective of the multidimensionality of religious coping. As delineated by Pargament et al. (1990), Spiritually Based Coping includes positive reframing of the event, accepting personal limits, emotional reassurance, and receiving guidance in problem solving. Compared to Discontent, the higher number of items and the multi-faceted composition of Spiritually Based Coping may have contributed to its relative stability. Third, the items of Discontent appeared to be phrased in a "negative" way and might have been perceived as socially inappropriate or socially less desirable by our participants. In contrast, the items of Spiritually Based Coping and the other four factors were phrased "positively" and might be perceived as more socially desired. Hence, there might be a strong influence of social desirability in the children's response to the RCAS. Specifically, scores on Discontent might be deflated and Spiritually Based Coping and the other factors might be inflated. Moreover, it is more likely that those who endorsed the Discontent items did in reality employ such a coping strategy. Future research on religious coping strategies should test and control the potential influence of social desirability.

Prediction of Children's PTSD Symptomatology

We conducted two sets of analyses in predicting child's PTSD symptoms. The mixed-effects regression model gave an overall picture of the relationships between predictor variables and child's PTSD over the three assessments period, whereas the six time-specific regression analyses provided more detailed information about how the predictors related to child's PTSD symptoms over time.

Descriptively, overall, children reported decreased severity of PTSD symptoms over time. This is further supported by the findings from the mixed-effects regression analyses. The

number of days since the fire remained one of the significant predictors as more variables were added to the regression model. Specifically, as more time elapsed since the fire, the severity of child's PTSD symptoms was lessened, which is consistent with the literature (e.g., Jones & Ribbe, 1991; La Greca et al., 1996). Moreover, the mixed-effects regression analyses revealed that resource loss, child's age, race, and race × age significant predicted child's PTSD symptoms over time, whereas child's sex, parental educational level, general coping, and religious coping were not significant predictors. As expected, resource loss was positively related to child's PTSD symptoms. Further analyses of the race by age interaction term suggested that overall younger African American children reported lower levels of PTSD symptoms than their European American peers. However, African American children reported increased severity of PTSD symptoms as their age increased, whereas European American children reported their PTSD symptoms decreased as their age increased at a higher rate than the increase rate of African American children. The race by age interaction has been rarely reported in the literature. Further investigation is called for to study its role in predicting child's PTSD symptoms and possible underlying mechanism.

The six time specific regression analyses revealed a somewhat different picture. Days since the fire did not emerge as a significant predictor in any of the six regressions. Resource loss was a significant predictor for child's PTSD symptoms at Time 1 and Time 3, but not at Time 2. Child's race, age, and their interaction significantly predicted child's PTSD symptoms at Time 1, but not at Time 2 or Time 3.

Moreover, two coping variables emerged as significant predictors for child's PTSD symptoms. First, Avoidance Strategies at Time 2 was a marginally significant predictor for concurrent PTSD and a significant predictor of PTSD at Time 3. It should be noted, however, the

two general coping variables combined (Active Coping and Avoidance Strategies) contributed to a substantial portion of variance (25%) in PTSD at Time 2 above and beyond days since the fire, resource loss, and demographic variables. Clearly, general coping played an important role in predicting concurrent PTSD symptoms at Time 2. It is likely due to the shared variance between Active Coping and Avoidance Strategies that in the full model of Time 2 → Time 2 regression Active Coping did not appear to be a significant predictor and Avoidance Strategies was only marginally significant. Indeed, Active Coping and Avoidance Strategies at Time 2 was highly correlated ($r = .796$, $p < .001$). To aid in interpretation, zero-order correlations among the variables used in the prediction of PTSD symptomatology were presented in Table 30. Correlation analyses also revealed that Active Coping and Avoidance Strategies were highly correlated at Time 1 ($r = .661$, $p < .001$) and Time 3 ($r = .855$, $p < .001$). Their high correlation may at least partially explain why the general coping variables did not emerge as significant predictors for PTSD symptoms in the mixed-effects regression model. Future study of the role of general coping in the prediction of PTSD symptoms may benefit from using a composite variable rather than including two or more highly correlated general coping variables.

Second, although child's religious coping efforts did not appear to contribute significantly to concurrent PTSD symptoms, they appeared to explain a sizable portion of the variance (11% in all three cross-time regressions) in PTSD symptoms measured at a later time even after controlling for prior PTSD symptoms and all other predictors. Specifically, one of the two religious coping variables, i.e., Religious Discontent, emerged as a significant predictor. Unexpectedly, Religious Discontent was found to be negatively related to later PTSD symptoms. That is, the more Religious Discontent a child experienced due to the fire, the fewer future PTSD symptoms he or she reported. In other words, Religious Discontent appeared to be a helpful way

for children to cope. This is contrary to Pargament's notion that adult's religious Discontent falls into the negative patterns of religious coping (Pargament et al., 1998) and that it was empirically found to be associated with poorer outcome (Pargament et al., 1990). The different relationships of Religious Discontent and outcome between adults and children may elucidate important difference in the functions and implications of specific religious coping strategies.

In addition, it is our view that the Religious Discontent concept closely resembles the use of blame and anger as a coping strategy from the Kidcope (Spirito, Stark, & Williams, 1988), except that the objects are different. That is, Religious Discontent expresses dissatisfaction towards God and church members, whereas the Blame and Anger strategy from the Kidcope expresses anger towards oneself and others. Different from our findings, the general child disaster literature has reported a positive relationship between the use of blame and anger (with self and others) and child's PTSD symptoms shortly following Hurricane Andrew (Vernberg et al., 1996) and that children who reported using blame and anger as a coping strategy early on had higher levels of PTSD symptoms later (La Greca et al., 1996). One interpretation is that perhaps expressing anger with God and church members is helpful, while expressing anger with oneself or others is harmful. Clearly, these relationships are not well understood and should be examined more closely.

Nonetheless, we speculated that two mechanisms might explain the negative relationship between Religious Discontent and PTSD symptoms. For one, Religious Discontent might serve as a healthy outlet of the negative emotions children experienced following the fire at their homes. As commonly believed and practiced in psychotherapy with emotion problems, bottling up negative emotions will lead to all sorts of psychological, behavioral, and physical problems, whereas finding an appropriate outlet of negative emotions is the way to go to maintain one's

psychological and physical health. In this study, all participating children experienced a major disaster in their homes (i.e., their homes were severely burned with at least 15% of their properties or belongings lost). If a child was able to express her or his anger, doubt, and disappointment with God and church members they trust, it somehow seemed to help them maintain their own emotional equilibrium in the long run, while those who did not have this outlet or did not use it effectively might have later turned their negative emotions into PTSD symptoms. Just as the development of an emotional problem typically follows a period of time after an individual has failed to find effective coping strategies and has exhausted his or her own resources to cope, in this study there was a time lag in the relationship between a child's religious coping efforts (i.e., Religious Discontent) and their psychological outcome (i.e., severity of their PTSD symptoms).

The other speculation has to do with the implication of one's relationship with God or a higher power when he or she expresses negative feelings toward this higher power in times of a major disaster. We would argue that this seemingly negative interaction might in fact symbolize a closer relationship between the individual and the higher power, compared to those who did not go through this negative transaction. The following analogy might be helpful. We tend to experience more disappointment and anger with those we hold dear to us in times when we feel most helpless. On the contrary, we are less likely to put the blame on those with whom we have a distant relationship. They are simply less relevant in times of crises. When we are able to express our negative feelings toward those to whom we are close, somehow this close relationship eventually helps carry us through difficult times. In this study, Spiritually Based Coping focuses on a close relationship with God or a higher power. Indeed, correlational analyses revealed a positive relationship between child's Spiritually Based Coping and Religious Discontent. In

particular, Religious Discontent measured at an earlier time was significantly or marginally significantly related to later Spiritually Based Coping (r's ranged from .27 to .31).

Both Avoidance Strategies and Discontent appear to fall into the emotion-focused coping category, whereas Active Coping and Spiritually Based Coping are more in line with problem-focused coping. Although a few items in Spiritually Based Coping could be conceptualized as emotion-focused, the majority of its items are more linked to problem-focused coping. Interestingly, only Avoidance Strategies and Discontent emerged as significant predictors of PTSD symptoms in this study. While the general stress and coping literature suggests problem-focused coping to be more effective than emotion-focused coping, findings of the present study suggest that in the context of a major disaster such as residential fire, emotion-focused coping may be either more effective than problem-focused coping or its efficacy may precede that of problem-focused coping. The results of the present study are consistent with the conceptualization that success of emotion-focused coping is necessary to ensure effective problem-focused coping efforts by preventing the interfering effect of heightened emotion upon cognitive processes engaged in problem-focused coping (Folkman, 1984). However, these hypotheses should be tested further in future research.

Furthermore, in the three cross-time analyses, we noted a pattern of findings similar to that in the prediction of child's religious coping. That is, child's PTSD symptoms measured at a previous time contributed to a significant portion of variance in child's PTSD symptoms measured at a later time.

Apparently, the mixed-effects model and the time specific regression analyses revealed both similar and different findings. We could have more confidence to draw conclusions about findings that were supported by both approaches. For example, resource loss, child's age, race,

and age by race interaction were found to be significant predictors for PTSD symptoms by the mixed-effects model and the same findings were indicated in the Time 1 → Time 1 analyses. On the other hand, it is equally important to explore reasons that might explain the discrepancies and to possibly consolidate the different findings from both sources.

As previously discussed, the mixed-effects regression model has the advantage of providing an overall picture of the relationships between selected predictors and child's PTSD symptoms over the three assessment waves, whereas the time specific regression model examined a segment of data in each of the analyses according to the time when the data were collected. Thus, compared to time specific analyses, the mixed-effects regression model is expected to have a superior power to detect significant relationships between variables by consolidating all the data into one analysis. Consequently, it revealed a strong negative relationship between time since the fire and child's PTSD symptoms, a finding that was not detected by the time specific analyses. However, it should be noted that the power to detect significant relationships of the mixed-effects model was compromised by the missing data problem in our study. Coincidentally, we had few missing data with child's race and age, resource loss, and days since the fire, but missing data was more of a problem with the general coping and religious coping variables. To deal with this issue, we employed the hot deck technique, a highly conservative approach. Since the missing data were substituted by values *randomly* selected from the pool of observed values of each corresponding predictor, this approach introduced a great amount of "noise" to the relationships between these variables and the response, to the extent that the "noise" might have diffused those otherwise significant relationships and made them no longer significant statistically. We suspected that this was the case with the general coping and religious coping variables in our study. Therefore, we have

more confidence in the findings of significant relationships between general coping and religious coping and PTSD symptoms as revealed by the time specific analyses. Notwithstanding, more definite conclusions about their relationships await further investigation. Moreover, by examining segments of data each time, the time specific analyses may be more sensitive to the changing dynamic of relationships between the variables over time, compared to the mixed-effects model.

In sum, both the mixed-effects model and the time specific analyses have their own advantages and limitations in examining the relationships between the variables of interests. It is important to take into account the specific properties of the data set to ensure accurate consolidation and interpretation of the findings from both approaches. When both are employed to examine the same data set and with a clear understanding of the properties of the data and its impact on the two approaches, they could each contribute unique and complementing information to answer our research questions. We feel it is one of the strengths of the present study to employ both approaches in addressing the same research questions and to explore related methodological issues.

Limitations, Future Directions, & Conclusions

Despite the important contributions of the present study, several limitations and directions for future research should be considered. First, there was a high attrition rate over the three assessment waves. This was primarily due to family relocation, an almost inevitable consequence of residential fires. In addition, some families were interviewed for the first time near the end of our data collection phase. Therefore, we were not able to schedule subsequent interviews according to our designed timeframe. Consequently, we only had a small sample size by the third assessment wave. Hence, the power of our statistical analyses was limited, especially

with Time 3 data. On the other hand, attrition analyses indicated that while there were no significant differences on demographic variables, the amount of loss due to the fire, family support, or severity of PTSD symptoms between children who only completed Time 1 assessment versus those who completed Time 2 and Time 3 assessments, there appeared to be some differences between the groups in how these children coped. In particular, children who only completed the first assessment appeared to score higher on Spiritually Based Coping than those who completed both Time 1 and Time 2 assessments. The reason for this difference remains unclear. In addition, children who completed the Time 1 interview only were found to score higher on Avoidance Strategies than those who completed all three assessments. This was understandable in that a child who used avoidance strategies more was likely less willing to participate in follow-up assessments that would necessarily ask him or her to process the impact of the residential fire. Consequently, the subsamples for Time 2 and Time 3 assessment might be biased in terms of children's coping style. Additional studies should examine this pattern of findings in greater detail.

Second, we encountered the missing data problems with some of the primary variables, including child's general coping and religious coping measures. In the time specific regression analyses, the standard listwise deletion approach was employed. It led to a significantly reduced sample size in these analyses, which further decreased their power. In the mixed-effects model, we used the hot deck technique to deal with the missing data problem. However, as discussed earlier, the hot deck technique is a highly conservative approach and it could also severely compromise the power of the mixed-effects model to detect significant relationships between the variables. Given that missing data is a common phenomenon in longitudinal research, more efforts are needed to explore appropriate statistical techniques to address this issue. More

collaboration between psychologists and statisticians may prove to be necessary to advance this avenue.

Third, unfortunately, we were unable to interview many families according to our planned timeframe. Consequently, there was a wide range of time since the fire at each assessment wave and there was significant overlap of time between the assessment waves. Therefore, it was difficult to pinpoint the timeline of changing relationships between the variables in our time specific analyses. It is expected that future research in this area with better control of the timeframe will be able to reveal a clearer process of the changing relationships.

Fourth, as discussed in the Method section, given the exploratory nature of the present study, a good number of regression analyses were conducted. This inevitably increased the probability of Type I error. As a result, caution should be taken when interpreting the statistical significance of the findings of the present study. Finally, this preliminary study only focused on two specific religious coping strategies, namely, Spiritually Based Coping and Religious Discontent. As delineated by Pargament (1998), religion may converge with the coping process in multiple ways. Future research is needed to investigate these and other aspects of children's religious coping. In addition, examination of potential moderation and mediation effects in the relations among religious coping and other variables awaits further investigation.

In conclusion, as one of the few attempts to examine children's religious coping, particularly in response to residential fires, the present study contributes to the literature of children and disaster by investigating this understudied but important aspect of children's coping to deal with the aftermath of a major disaster. Our study revealed a number of interesting and important findings, albeit inconclusive due to the limitations discussed above. Of note, there is some evidence to suggest that if children were able to express anger and doubt with God or a

higher power and church members early on following residential fires, they tended to have lower levels of PTSD symptoms later. This information should be taken into consideration in designing postdisaster intervention strategies. Given the paucity of research in the area of child's religious coping and the exploratory nature of our study, we realize that this study has raised more questions than it has answered. We also recognize the vast diversity of religion and spiritual experiences. Our investigation only represents one of the first attempts to study children's religious coping from a Judeo-Christian tradition, albeit there was some presence of other major religions (e.g., Islam and Mormon) in our sample. Hence, great caution must be taken to generalize findings from this study to populations affiliated with other religious traditions. Nonetheless, it is our hope that this study will be heuristic and it may help guide future research in the area of child's religious coping following a major disaster.

References

Ayers, T. S., Sandler, I. N., West, S. G., & Roosa, M. W. (1996). A dispositional and situational assessment of children's coping: Testing alternative models of coping. Journal of Personality, 64, 923-958.

Batson, C. D., Schoenrade, P., & Ventis, W. L. (1993). Religion and the individual: A social-psychological perspective. New York: Oxford University Press.

Bearon, L.B., & Koenig, H.G. (1990). Religious cognitions and use of prayer in health and illness. Gerontologist, 30, 249-253.

Bergin, A. E., & Jensen, J. P. (1990). Religiosity of psychotherapists: A national survey. Psychotherapy. 27, 3-7.

Bernstein, N. R. (1990). Fire. In J. D. Noshpitz & R. D. Coddington (Eds.), Stressors and the adjustment disorder (pp. 260-277). New York: John Wiley & Sons.

Bickman, L., Edelman, P., & McDaniel, M. (1977). A model of human behavior in a fire emergency (NBS-GCR-78420). Washington, DC: Center for Fire Research.

Bjorck, J. P., & Cohen, L. H. (1993). Coping with threats, losses, and challenges. Journal of Social and Clinical Psychology, 12, 56-72.

Boeving, C. A. (2003). Coping and adjustment in child cancer survivors: An investigation into spirituality as a predictor of psychosocial outcomes. Unpublished dissertation. Virginia Polytechnic Institute and State University.

Britt, G. C. (1995). Children's coping with everyday stressful situations: The role played by religion. Poster presented at the 61st Biennial Meeting of the Society for Research in Child Development, Indianapolis, Indiana.

Burke, J. D., Moccia, P., Borus, J. F., & Burns, B. J. (1986). Emotional distress in fifth-grade children 10 months after a natural disaster. Journal of the American Academy of Child Psychiatry, 25, 536-541.

Codega, S. A., Pasley, B. K., & Kreutzer, J. (1990). Coping behaviors of dolescent mothers. Journal of Adolescent Research, 5, 34-53.

Cohen, S., & Wills, T. (1985). Stress, social support, and the buffering hypothesis. Psychological Bulletin, 101, 310-357.

Compas, B. E., & Epping, J. E. (1993). Stress and coping in children and families: Implications for children coping with disaster. In C. F. Saylor (Ed.), Children and disasters (pp. 11-28). NY: Plenum Press.

Compas, B. E., Worsham, N. L., & Ey, S. (1992). Conceptual and developmental issues in children's coping with stress. In A. M. La Greca, L. J. Siegel, J. L. Wallander, & C. E. Walker (Eds.), Stress and coping in child health (pp. 7-24). NY: Guilford.

Copeland, E. P., & Hess, R. S. (1995). Differences in young adolescents' coping strategies based on gender and ethnicity. Journal of Early Adolescence, 15, 203-219.

Croog. S.H., & Levine, S. (1972). Religious identity and response to serious illness: A report on heart patients. Social Science and Medicine, 6, 17-32.

Dollinger, S. J. (1986). The need for meaning following disaster: Attributions and emotional upset. Personality and Social Psychology Bulletin, 12, 300-310.

Dubow, E. F., & Ullman, D. G. (1989). Assessing social support in elementary school children: The Survey of Children's Social Support. Journal of Clinical Child Psychology, 18, 52-64.

Efron, B. (1994). Missing Data, Imputation and the Bootstrap. Journal of the American Statistical Association, 89, 463-474.

Ellison, C. G., & Taylor, R. J. (1996). Turning to prayer: Social and situational antecedents of religious coping among African Americans. Review of Religious Research, 38, 111-131.

Fields, L., & Prinz, R. J. (1997). Coping and adjustment during childhood and adolescence. Clinical Psychology Review, 17, 937-976.

Ferraro, K.F., & Koch, J.R. (1994) Religion and health among black and white adults: Examining social support and consolation. Journal for the Scientific Study of Religion, 33, 362-375.

Fields, L., & Prinz, R. J. (1997). Coping and adjustment during childhood and adolescence. Clinical Psychology Review, 17, 937-976.

Folkman, S. (1984). Personal control and stress and coping processes: A theoretical analysis. Journal of Personality and Social Psychology, 46, 839-852.

Fowler, J. W. (1981). Stages of faith: The psychology of human development and the quest for meaning. San Francisco: Harper & Row.

Fowler, J. W., & Dell, M. L. (2004). Stages of faith and identity: Birth to teens. Child and Adolescent Psychiatric Clinics of North America, 13, 17-33.

Freedy, J. R., Shaw, D. L., Jarrell, M. P., & Masters, C. R. (1992). Towards an understanding of the psychological impact of natural disasters: An application of the Conservation of Resource Model. Journal of Traumatic Stress, 5, 441-454.

Garbarino, J., & Bedard, C. (1996). Spiritual challenges to children facing violent trauma. Childhood, 3, 467-478.

Goldman, A. L. (1991, April 10). Portrait of religion in U.S. holds dozens of surprises. The New York Times, pp. A1, A18.

Gonzales, N. A., & Kim, L. S. (1997). Stress and coping in an ethnic minority context: Children's cultural ecologies. In S. A. Wolchik & I. N. Sandler (Eds.), Handbook of children's coping: Linking theory and intervention (pp. 3-40). New York: Plenum.

Green, B. L., Korol, M. Grace, M. C., Vary, M. G., Leonard, A. C., Gleser, G. C., & Smitson-Cohen, S. (1991). Children and disaster: Age, gender, and parental effects n PSD symptoms. Journal of American Academy of Child and Adolescent Psychiatry, 30, 945-951.

Greenberg, H. S. (1994). Response of children and adolescents to a fire in their homes. Child and Adolescent Social Work, 11, 475-492.

Greenberg, H. S., & Keane, A. (1997). A social work perspective of childhood trauma after a residential fire. Social Work in Education, 19, 11-22.

Gurin, G., Veroff, J., & Feld, S. (1960) Americans view their mental health: A nationwide interview survey. New York: Basic Books.

Hoge, D. R. (1996). Religion in America: The demographics of belief and affiliation. In E. P. Shafranske (Ed.), Religion and the clinical practice of psychology (pp. 21-41). Washington, DC: American Psychological Association.

Hollingshead, A. B. (1975). Four Factor Index of Social Status. New Haven, CT: privately printed.

Hood, R. W., Spilka, B., Hunsberger, B., & Gorsuch, R. (1996). The psychology of religion: An empirical approach. 2nd edition. New York: Guilford.

Houskamp, B. M., Fisher, L. A., & Stuber, M. L. (2004). Spirituality in children and adolescents: Research findings and implications for clinicians and researchers. Child and Adolescent Psychiatric Clinics of North America, 13, 221-230.

James, W. (1902). The varieties of religious experience: A study in human nature. New York: Modern Library.

Jones, R. T. (1996). Child's reaction to traumatic events scale (CRTES): Assessing traumatic experiences in children. In J. P., Wilson & T. Keane (Eds.), Assessing psychological trauma & PTSD (pp. 291-298). New York: Guilford.

Jones, R. T., Fletcher, K., & Ribbe, D. R. (2002). Child's Reaction to Traumatic Events Scale-Revised (CRTES-R): A self report traumatic stress measure. Available from the first author, Department of Psychology, Stress and Coping Lab, Virginia Tech University, Blacksburg, VA 24060.

Jones, R. T., & Ollendick, T. H. (2002). Residential fires. In A. M. La Greca, W. K. Silverman, E. Vernberg, & M. C. Roberts (Eds.), Helping children in disasters: Integrating research and practice (pp. 175-199). Washington, DC: American Psychological Association.

Jones, R. T., & Ollendick, T. H. (2001). Residential Fire Grant Project: An NIMH investigation. Unpublished manuscript. Virginia Polytechnic Institute and State University.

Jones, R. T., & Ollendick, T. H. (1994). Resource Loss Scale for Children (RLSC): A revised self report measure of resource loss. Available from the first author, Department of Psychology, Stress and Coping Lab, Virginia Tech University, Blacksburg, VA 24060.

Jones, R. T., & Ribbe, D. P. (1991). Child, adolescent and adult victims of residential fire. Behavior Modification, 139, 560-580.

Jones, R. T., Ribbe, D. P., & Cunningham, P. (1994). Psychosocial correlates of fire disaster among children and adolescents. Journal of Traumatic Stress, 7, 117-122.

Jones, R. T., Wang, Y., & Ollendick, T. H. (2001). Predictors of coping strategies following residential fire. Unpublished manuscript. Virginia Polytechnic Institute and State University.

Joseph, M. (1998). The effects of strong religious beliefs on coping with stress. Stress Medicine, 14, 219-224.

Josephson, A. M., & Dell, M. L. (2004). Religion and spirituality in child and adolescent psychiatry: A new frontier. Child and Adolescent Psychiatric Clinics of North America, 13, 1-16.

Karter, M. J. (1996).U.S. fire loss. NFPA J. September/October 1997: 77-83.

Khatri, M., Wang, Y., Jones, R., & Ollendick, T.H. (2000, August). Spiritually Based Coping as a predictor of post-residential fire adjustment. Poster presentation at the 108th APA Annual Convention, Washington, DC.

Koenig, H.G., Cohen, J.J., Blazer, D.G., Pieper, C., Meador, K.G., Shelp, F., Goli, V., & DiPasquale, B. (1992). Religious coping and depression among elderly, hospitalized medically ill men. American Journal of Psychiatry, 149, 1693-1700.

Korol, M., Green, B. L., & Grace, M. C. (1999). Developmental analysis of the psychosocial impact of disaster on children: A review. Journal of the American Academy of Child and Adolescent Psychiatry, 38, 368-375.

Krim, A. (1983). Families after urban fire: Disaster intervention (MH29197). Washington, DC: National Institute of Mental Health.

La Greca, A. M., Silverman, W. K., Vernberg, E. M., & Prinstein, M. J. (1996). Symptoms of posttraumatic stress in children after Hurricane Andrew: A prospective study. Journal of Consulting and Clinical Psychology, 64, 712-723.

Laird, N. M. & Ware, J. H. (1982). Random-Effects Models for Longitudinal Data. Biometrics, 38, 963-974.

Landolt, M. A., Vollrath, M., & Ribi, K. (2002). Predictors of coping strategy selection in paediatric patients. Acta Paediatrica, 91, 954-960.

Lazarus, R. S., & Folkman, S. (1984). Stress, appraisal, and coping. New York: Springer.

Lengua, L. J., & Sandler, I. N. (1996). Self-regulation as a moderator of the relation between coping and symptomatology in children of divorce. Journal of Abnormal Child Psychology, 24, 681-701.

Littell, R. C., Milliken, G. A., Stroup, W. W., & Wolfinger, R. (1996). SAS System for Mixed Models, Cary NC: SAS Institute.

Lonigan, C. J., Shannon, M. P., Finch, A. J., Dagherty, T. K., & Taylor, C. M. (1991). Children's reactions to a natural disaster: Symptom severity and degree of exposure. Advances in Behavioral Research and Therapy, 13, 135-154.

Lukoff, D., Lu, F., & Turner, R. (1992). Toward a more culturally sensitive DSM-IV: Psychoreligious and psychospiritual problems. Journal of Nerv. Mental Disorder, 180, 673-682.

Matheny, K. B., Aycock, D. W., Pugh, J. L., Curlette, W. L., & Cannella, K. A. S. (1986). Stress coping: A qualitative and quantitative synthesis with implications for treatment. The Counseling Psychologist, 14, 499-549.

Matthews, D. A., Larson, D. B., & Barry, C. P. (1994). The faith factor: An annotated bibliography of clinical research on spiritual subjects. Vol. 1. John Templeton Foundation.

McCrae, R. R. (1984). Situational determinants of coping response: Loss, threat, and challenge. Journal of Personality and Social Psychology, 46, 919-928.

McFarlane, A. C. (1987). Posttraumatic phenomena in a longitudinal study of children following a natural disaster. Journal of the American Academy of Child and Adolescent Psychiatry, 26, 764-769.

Olszewski, M. E. (1994). The effect of religious coping on depression and anxiety in adolescence. Unpublished dissertation. Oregon State University.

Pargament, K. I. (1997). The psychology of religion and coping: Theory, research, practice. New York: Guilford.

Pargament, K. I., & Brant, C. R. (1998). Religion and coping. In H. G. Koenig (Ed.), Handbook of religion and mental health (pp. 111- 128). Academic Press.

Pargament, K. I., Ensing, D. S., Falgout, K., Olsen, H., Reilly, B., Van Haitsma, K., & Warren, R. (1990). God help me: (I) Religious coping efforts as predictors of the outcomes to significant negative life events. American Journal of Community Psychology, 18, 793-823.

Pargament K. I., Ishler, K., Dubow, E., Stanik, P., Rouiller, R., Crowe, P., Cullman, E., Albert, M., & Royster, B. J. (1994). Methods of religious coping with the Gulf War: Cross-sectional and longitudinal analyses. Journal for the Scientific Study of Religion, 33, 347-361.

Pargament, K. I., Koenig, H. G., & Perez, L. M. (2000). The many methods of religious coping: Development and initial validation of the RCOPE. Journal of Clinical Psychology, 56, 519-543.

Pargament, K. I., & Park, C. L. (1995). Merely a defense? The variety of religious means and ends. Journal of Social Issues, 51, 13-32.

Pargament, K. I., Smith, B., & Brant, C. R. (1995, November). Religious and nonreligious coping methods with the 1993 Midwest flood. Paper presented at the annual meeting of the Society for the Scientific Study of Religion, St. Louis, MO.

Pargament, K. I., Smith, B., Koenig, H. G., & Perez, L. (1998). Patterns of positive and negative religious coping with major life stressors. Journal for the Scientific Study of Religion, 37, 710-724.

Pedhazur, E. J., & Schmelkin, L. P. (1991). Measurement, design, and analysis: An integrated approach. Hillsdale, NJ: Lawrence Erlbaum Association.

Pendleton, S. M., Cavalli, K. S., Pargament, K. I., & Nasr, S. Z. (2002). Religious/spiritual coping in childhood cystic fibrosis: A qualitative study. Pediatrics, 109, E8.

Ross, C. E. (1990). Religion and psychological distress. Journal for the Scientific Study of Religion, 29, 236-245.

Rubin, D. B. & Little, R. J. A. (1986). Statistical Analysis of Missing Data. New York: John Wiley & Sons.

Rubin, D. B. (1978). Inference and missing data. Biometrica, 63, 581-592.

Sandler, I. N., Wolchik, S. A., MacKinnon, D., Ayers, T. S., & Roosa, M. W. (1997). Developing linkages between theory and intervention in stress and coping processes. In S. A. Wolchik & I. N. Sandler (Eds.), Handbook of children's coping: Linking theory and intervention (pp. 3-40). New York: Plenum.

Schabenberger, O. & Pierce, F. J. (2001). Contemporary Statistical Models for the Plant and Soil Sciences, Boca Raton, FL: Chapman & Hall/CRC.

Seroka, C. M., Knapp, C., Knight, S., Siemon, C. R., & Starbuck, S. (1986). A comprehensive program for postdisaster counseling. Social Casework: The Journal of Contemporary Social Work, 67, 37-44.

Shannon, M. P., Lonigan, C. J., Finch, A. J., & Taylor, C. M. (1994). Children exposed to disaster: I. Epidemiology of post-traumatic symptoms and symptom profiles. Journal of the American Academy of Child Psychiatry, 33, 80-93.

Spirito, A., Stark, L. J., & Williams, C. (1988). Development of a brief coping checklist for use with pediatric populations. Journal of Pediatric Psychology, 13, 555-574.

Stoddard, F. J., Norman, D. K., Murphy, J. M., & Beardslee, W. R. (1989). Psychiatric outcome of burned children and adolescents. Journal of American Academic Child Adolescent Psychiatry, 28, 589-595.

Striznec, M. (2000). Religion and coping: Empirical verification of their interaction. Studia Psychologica, 42, 71-74.

Striznec, M., & Ruisel, I. (1999). Religious coping styles and personality in Slovak adolescents. Studia Psychologica, 40, 303-307.

Tamminen, K. (1994). Religious experiences in childhood and adolescence: A viewpoint of religious development between the ages of 7 and 20. International Journal for the Psychology of Religion, 4, 61-85.

Tarnowski, K. J. (Ed.), (1994). Behavioral aspects of pediatric burns. New York: Plenum Press.

Tix, A. P., & Frazier, P. A. (1998). The use of religious coping during stressful life events: Main effects, moderation, and mediation. Journal of Counseling and Clinical Psychology, 66, 411-422.

U.S. Census Bureau (2000). Your gateway to Census 2000. Available on line at: http://www.census.gov/main/www/cen2000.html.

Vernberg, E. M., La Greca, A. M., Silveman, W. K., & Prinstein, M. J. (1996). Prediction of posttraumatic stress symptoms in children after Hurricane Andrew. Journal of Abnormal Psychology, 105, 237-248.

Webster's New Universal Unabridged Dictionary (1996). New York, NY: Barnes & Noble.

Table 1 Demographic characteristics of the sample (Total n=140)

	African American			European American			
N	Boys	Girls	Subtotal	Boys	Girls	Subtotal	Total
Children (8-12yrs)	24	15	39	16	22	38	77
Adolescents (13-18yrs)	12	23	35	11	17	28	63
Subtotal	36	38	74	27	39	66	140

	African American			European American			
Mean Parental Education	Boys	Girls	Subtotal	Boys	Girls	Subtotal	Total
Children (8-12yrs)	4.48	4.13	4.34	4.00	4.73	4.42	4.38
Adolescents (13-18yrs)	4.50	4.71	4.64	5.36	4.44	4.81	4.72
Total	4.49	4.47	4.48	4.56	4.61	4.58	4.53

Note: Mean age of children = 12.11 (SD = 2.08)

Table 2 Parents' Religious Affiliation

	African American		European American		Total Sample	
Religion Affiliation	Frequency	Percent	Frequency	Percent	Frequency	Percent
Unspecified	9	12.2	4	6.1	13	9.3
Apostolic	1	1.4	0	0	1	.7
Baptist	41	55.4	19	28.8	60	42.8
Brethren	0	0	1	1.5	1	.7
Catholic	1	1.4	3	4.5	4	2.9
Christian	7	9.5	7	10.6	14	10.0
Episcopal	0	0	2	3.0	2	1.4
Holiness	4	5.4	3	4.5	7	5.0
Islam	1	1.4	0	0	1	.7
Jehovah	1	1.4	0	0	1	.7
Lutheran	0	0	3	4.5	3	2.1
Methodist	3	4.1	6	9.1	9	6.4
Mormon	0	0	1	1.5	1	.7
N/A or None	3	4.1	6	9.1	9	6.4
Pentecostal	2	1.4	5	7.6	7	5.0
Presbyterian	0	0	1	1.5	1	.7
Protestant	1	1.4	4	6.1	5	3.6
Southern Baptist	0	0	1	1.5	1	.7
Total	74	100.0	66	100.0	140	100.0

Table 3 Psychometric characteristics of the RCAS from Exploratory Factor Analysis

	Alpha	Factor loading
Spiritually Based Coping	.94	
Item 2		.42
3		.46
4		.70
5		.56
6		.66
7		.67
8		.81
9		.67
10		.60
11		.70
12		.81
13		***.40***
14		***.41***
15		***.36***
Good Deeds (Religious participation)	.81	
16		.71
17		.87
18		.35
Religious Support	.85	
19		.43
20		.66
21		.52
Plead	.84	
1		***.48***
22		.50
23		.67
24		.66
25		.54
26		.64
Discontent	.69	
27		.72
28		.63
29		.54
Religious Avoidance	.83	
30		.84
31		.64
32		.56

Table 4 Means, Standard Deviations, and Correlations of the RCAS Factors

Factor	Spiritually Based Coping	Good Deeds	Religious Support	Plead	Discontent	Religious Avoidance
Mean	1.97	1.39	1.16	1.75	.42	1.31
Std. Deviation	.79	.96	1.02	.85	.67	1.01
Spiritually Based Coping		.613***	.608***	.654***	.147	.642***
Good Deeds			.584***	.521***	.259**	.524***
Religious Support				.484***	.302***	.550***
Plead					.276**	.587***
Discontent						.190*
Religious Avoidance						

* $p < .05$ ** $p < .01$ *** $p < .001$

Table 5 Means, Standard Deviations, and Internal Consistency Reliabilities

Variable	Time 1 M (SD)	Time 2 M (SD)	Time3 M (SD)	Alpha [a]
Days Since the Fire	110.19 (84.79)	325.99 (95.82)	546.98 (117.39)	--- [b]
Child Measures				
Religious Coping (RCAS)				
Spiritually Based Coping	1.97 (.79)	1.91 (.85)	1.73 (1.02)	.94
Discontent	.42 (.67)	.51 (.79)	.43 (.74)	.72
General Coping (HICUPS)				
Active Coping	2.42 (.65)	2.25 (.73)	2.16 (.80)	.86
Avoidance Strategies	2.75 (.71)	2.44 (.79)	2.29 (.86)	.78
Resource Loss (RLS)	14.91 (8.99)	---	---	.79
Family Support (DSSS)	11.77 (4.32)	13.78 (2.67)	14.34 (2.39)	.89
PTSD Symptoms (CRTES)				
Intrusion	10.07 (9.18)	6.47 (7.53)	4.32 (7.17)	.86
Avoidance	14.11 (9.47)	10.60 (9.21)	9.70 (9.73)	.77
Total	24.18 (16.59)	17.07 (14.50)	14.02 (15.05)	.87
Parent Measure				
Religious Coping				
Spiritually Based Coping	2.20 (.71)	2.18 (.82)	2.13 (.87)	.92
Discontent	.30 (.62)	.33 (.50)	.24 (.51)	.82

Note: a. All internal consistency reliability estimates (alphas) were based on Time 1 data.
b. Since these variables are count variables, internal consistency indices are not applicable to these variables.

Table 6 Attrition Analyses of Time 1 Data

Variable	T1 [a] M (SD)	T12 M (SD)	T123 M (SD)	t T1 *vs.* T12	t T1*vs.*T123
Days Since the Fire	111.25 (81.42)	116.77 (99.45)	103.87 (81.35)	-.26	.46
Age	11.96 (2.66)	12.37 (3.16)	12.03 (2.71)	-.61	-.15
Parental Education	4.43 (1.15)	4.36 (1.28)	4.67 (.97)	.26	-1.13
Child Measures					
Religious Coping (RCAS)					
Spiritually Based Coping	2.09 (.83)	1.73 (.70)	1.99 (.81)	1.74†	.53
Discontent	.49 (.71)	.39 (.48)	.40 (.75)	.62	.59
General Coping (HICUPS)					
Active Coping	2.43 (.56)	2.50 (.38)	2.37 (.82)	-.53	.37
Avoidance Strategies	2.91 (.64)	2.87 (.71)	2.55 (.75)	.18	2.12*
Resource Loss (RLS)	15.16 (9.72)	14.80 (9.90)	14.98 (8.26)	.15	.10
Family Support (DSSS)	11.91 (4.45)	11.47 (4.03)	12.05 (4.31)	.44	-.16
PTSD Symptoms (CRTES)	25.82 (17.21)	28.10 (15.39)	21.45 (16.69)	-.59	1.32
Parent Measure					
Religious Coping					
Spiritually Based Coping	2.11 (.72)	2.15 (.56)	2.34 (.74)	-.21	-1.43
Discontent	.37 (.80)	.33 (.44)	.24 (.55)	.19	.83

Note: a. T1 = Participants who only completed Time 1 assessment;
T12 = Participants who completed Time 1 and Time 2 assessment, but not Time 3;
T123 = Participants who completed all three assessments

b. * $p < .05$, ** $p < .01$, *** $p < .001$, † $.05 < p < .10$

Table 7 Age Analyses of Time 1 Data

Variable	Children (n=77) M (SD)	Alpha	Adolescents (n=63) M (SD)	Alpha	t
Days Since the Fire	113.28 (78.04)	--- [a]	106.48 (92.78)	---	.47
Age	9.95 (1.44)	---	14.75 (1.49)	---	-19.29***
Parental Education	4.38 (1.05)	---	4.72 (1.18)	---	-1.75†
Child Measures					
Religious Coping (RCAS)					
Spiritually Based Coping	2.13 (.69)	.89	1.78 (.87)	.96	2.43*
Discontent	.39 (.68)	.76	.46 (.66)	.63	-.61
General Coping (HICUPS)					
Active Coping	2.42 (.69)	.87	2.43 (.62)	.85	-.13
Avoidance Strategies	2.83 (.73)	.80	2.65 (.68)	.75	1.25
Resource Loss (RLS)	14.04 (9.04)	.80	15.97 (8.89)	.77	-1.27
Family Support (DSSS)	11.88 (4.36)	.87	11.63 (4.29)	.85	.33
PTSD Symptoms (CRTES)	24.38 (16.07)	.86	23.94 (17.33)	.90	.15
Parent Measure					
Religious Coping					
Spiritually Based Coping	2.26 (.68)	.92	2.13 (.75)	.91	.98
Discontent	.29 (.60)	.85	.32 (.65)	.75	-.25

Note: a. Since these variables are count variables, internal consistency indices are not applicable to these variables.

b. * $p < .05$, ** $p < .01$, *** $p < .001$, † $.05 < p < .10$

Table 8 Prediction of Child's Spiritually Based Coping: Time1 → Time 1

Set Statistics / Predictor	Decomposition of set effect ΔR^2	*p*	R^2	β [a]	*p* [a]
Step 1: Days since fire	.014	ns	.014	.183	.083
Step 2: Loss	.016	ns	.030	.233	.033
Step 3: Demographic	.163	.007	.192		
Parental education				-.121	ns
Child's sex				-.106	ns
Child's age				-.360	.021
Child's race				-.296	ns
Race × Age				.550	ns
Step 4: Family support	.001	ns	.193	-.001	ns
Step 5: Parent's spiritual based coping	.035	.057	.228	.202	.057

Note: a. Here β and *p* were obtained at the last step when all variables were entered into the regression equation. The same applies to the following tables, except Tables 17, 18, & 25.

Table 9 Prediction of Child's Spiritually Based Coping: Time1 → Time 2

Set Statistics / Predictor	Decomposition of set effect ΔR^2	*p*	R^2	β	*p*
Step 1: Days since fire	.025	ns	.025	-.066	ns
Step 2: Child's spiritual based coping At Time 1	.409	.000	.433	.642	.000
Step 3: Loss	.009	ns	.442	-.004	ns
Step 4: Demographic	.102	ns	.544		
Parental education				-.030	ns
Child's sex				-.159	ns
Child's age				.217	ns
Child's race				.949	ns
Race × Age				-.714	ns
Step 5: Family support	.003	ns	.547	.058	ns
Step 6: Parent's spiritual based coping	.001	ns	.549	.050	ns

Table 10 Prediction of Child's Spiritually Based Coping: Time1 → Time 3

Set Statistics	Decomposition of set effect				
Predictor	ΔR^2	*p*	R^2	β	*p*
Step 1: Days since fire	.084	.051	.084	-.343	.045
Step 2: Child's spiritual based coping At Time 1	.160	.004	.244	.467	.004
Step 3: Loss	.003	ns	.247	-.038	ns
Step 4: Demographic	.078	ns	.325		
Parental education				.171	ns
Child's sex				-.048	ns
Child's age				.191	ns
Child's race				-.066	ns
Race × Age				-.074	ns
Step 5: Family support	.060	.070	.384	-.235	ns
Step 6: Parent's spiritual based coping	.002	ns	.386	-.059	ns

Table 11 Prediction of Child's Spiritually Based Coping: Time2 → Time 2

Set Statistics	Decomposition of set effect				
Predictor	ΔR^2	*p*	R^2	β	*p*
Step 1: Days since fire	.006	ns	.006	.054	ns
Step 2: Loss	.006	ns	.011	.251	.096
Step 3: Demographic	.190	.079	.201		
Parental education				-.101	ns
Child's sex				-.098	ns
Child's age				-.337	.070
Child's race				-.352	ns
Race × Age				.646	ns
Step 4: Family support	.095	.019	.296	.329	.023
Step 5: Parent's spiritual based coping	.035	ns	.331	.224	ns

Table 12 Prediction of Child's Spiritually Based Coping: Time2 → Time 3

Set Statistics			Decomposition of set effect		
Predictor	ΔR^2	*p*	R^2	β	*p*
Step 1: Days since fire	.021	ns	.021	-.148	ns
Step 2: Child's spiritual based coping At Time 2	.345	.000	.365	.640	.002
Step 3: Loss	.072	.052	.437	.121	ns
Step 4: Demographic	.064	ns	.501		
Parental education				-.088	ns
Child's sex				-.138	ns
Child's age				-.102	ns
Child's race				-.838	ns
Race × Age				.836	ns
Step 5: Family support	.000	ns	.501	-.041	ns
Step 6: Parent's spiritual based coping	.014	ns	.516	-.148	ns

Table 13 Prediction of Child's Spiritually Based Coping: Time3 → Time 3

Set Statistics			Decomposition of set effect		
Predictor	ΔR^2	*p*	R^2	β	*p*
Step 1: Days since fire	.043	ns	.043	-.133	ns
Step 2: Loss	.025	ns	.068	.248	ns
Step 3: Demographic	.101	ns	.170		
Parental education				.151	ns
Child's sex				-.263	ns
Child's age				-.033	ns
Child's race				.395	ns
Race × Age				-.219	ns
Step 4: Family support	.027	ns	.196	.173	ns
Step 5: Parent's spiritual based coping	.001	ns	.198	.045	ns

Table 14 Prediction of Child's Religious Discontent: Time1 → Time 1

Set Statistics			Decomposition of set effect		
Predictor	ΔR^2	*p*	R^2	β	*p*
Step 1: Days since fire	.011	ns	.011	-.093	ns
Step 2: Loss	.069	.011	.080	.224	.045
Step 3: Demographic	.033	ns	.113		
Parental education				-.009	ns
Child's sex				.050	ns
Child's age				-.027	ns
Child's race				-.482	ns
Race × Age				.555	ns
Step 4: Family support	.001	ns	.114	-.018	ns
Step 5: Parent's religious discontent	.058	.017	.172	.247	.017

Table 15 Prediction of Child's Religious Discontent: Time1 → Time 2

Set Statistics			Decomposition of set effect		
Predictor	ΔR^2	*p*	R^2	β	*p*
Step 1: Days since fire	.075	.063	.075	-.267	.071
Step 2: Child's religious discontent At Time 1	.220	.001	.295	.585	.001
Step 3: Loss	.046	.091	.340	-.229	ns
Step 4: Demographic	.078	ns	.418		
Parental education				-.016	ns
Child's sex				.086	ns
Child's age				-.334	.083
Child's race				-.832	ns
Race × Age				.697	ns
Step 5: Family support	.016	ns	.434	.143	ns
Step 6: Parent's religious discontent	.008	ns	.442	.102	ns

Table 16 Prediction of Child's Religious Discontent: Time1 → Time 3

Set Statistics			Decomposition of set effect		
Predictor	ΔR^2	*p*	R^2	β	*p*
Step 1: Days since fire	.155	.007	.155	-.392	.009
Step 2: Child's religious discontent At Time 1	.131	.007	.286	.279	.071
Step 3: Loss	.014	ns	.301	.138	ns
Step 4: Demographic	.154	.088	.455		
Parental education				.126	ns
Child's sex				-.311	.031
Child's age				-.277	ns
Child's race				-.480	ns
Race × Age				.591	ns
Step 5: Family support	.066	.032	.521	.275	.031
Step 6: Parent's religious discontent	.011	ns	.532	.121	ns

Table 17 Prediction of Child's Religious Discontent: Time2 → Time 2

Set Statistics			Decomposition of set effect		
Predictor	ΔR^2	*p*	R^2	β	*p*
Step 1: Days since fire	.061	.075	.061	-.220	ns
Step 2: Loss	.000	ns	.061	-.027	ns
Step 3: Demographic	.093	ns	.154		
Parental education				-.102	ns
Child's sex				.018	ns
Child's age				-.338	.091
Child's race				-1.043	.091
Race × Age				1.061	.085
Step 4: Family support	.009	ns	.162	.120	ns
Step 5: Parent's religious discontent	.033	ns	.195	.191	ns

Table 18 Prediction of Child's Religious Discontent: Time2 → Time 3

Set Statistics			Decomposition of set effect		
Predictor	ΔR^2	*p*	R^2	β	*p*
Step 1: Days since fire	.137	.026	.137	-.250	.076
Step 2: Child's religious discontent At Time 2	.248	.001	.385	.342	.021
Step 3: Loss	.063	.066	.448	.301	.057
Step 4: Demographic	.181	.046	.628		
Parental education				.072	ns
Child's sex				-.327	.031
Child's age				-.284	ns
Child's race				-.355	ns
Race × Age				.625	ns
Step 5: Family support	.005	ns	.633	.072	ns
Step 6: Parent's religious discontent	.025	ns	.658	.186	ns

Table 19 Prediction of Child's Religious Discontent: Time3 → Time 3

Set Statistics			Decomposition of set effect		
Predictor	ΔR^2	*p*	R^2	β	*p*
Step 1: Days since fire	.133	.011	.133	-.295	.018
Step 2: Loss	.069	.055	.202	.313	.019
Step 3: Demographic	.241	.011	.443		
Parental education				.058	ns
Child's sex				-.331	.008
Child's age				-.290	.060
Child's race				-.362	ns
Race × Age				.640	ns
Step 4: Family support	.021	ns	.464	-.100	ns
Step 5: Parent's religious discontent	.119	.002	.583	.378	.002

Table 20 Summary of Significant Findings of the Prediction of Child's Religious Coping

Concurrent Analyses

Time 1 → Time 1
SBC: (Days) (+), Loss (+), Age (-), (Parent's SBC)(+)
RD: Loss (+), Parent's RD(+)
Time 2 → Time 2
SBC: (Loss) (+), (Age)(-), family support(+)
RD: (Age), (Race), (Race × Age) (+)
Time 3 → Time 3
SBC: NONE
RD: Days (-), Loss (+), Sex (-), (Age)(-), Parent's RD(+)

Cross Time Analyses

Time 1 → Time 2
SBC: SBC1 (+)
RD: (Days) (-), RD1 (+), (Age)(-)
Time 1 → Time 3
SBC: Days (-), SBC1 (+)
RD: Days (-), (RD1) (+), Sex (-), Support (+)
Time 2 → Time 3
SBC: SBC2 (+)
RD: (Days) (-), RD2 (+), (Loss) (+), Sex (-)

Note: SBC = Spiritually Based Coping; RD = Religious Discontent
Variables in parentheses were marginally significant
"+" = positive relationship; "-" = negative relationship

Table 21 Rates of Missing Data

Variable	Time 1 N = 140 n	% [a]	Time 2 N = 90 n	% [a]	Time3 N = 66 n	% [a]
Demographic						
Child's Sex	140	0				
Child's Age	140	0				
Child's Race	140	0				
Parental Education	136	2.9				
Days since the Fire	139	0.7	90	0	66	0
Child Measures						
Religious Coping (RCAS)						
Spiritually Based Coping	116	17.1	67	25.6	53	19.7
Discontent	117	16.4	67	25.6	53	19.7
General Coping (HICUPS)						
Active Coping	96	31.4	64	28.9	57	13.6
Avoidance	96	31.4	64	28.9	57	13.6
Resource Loss (RLS)	140	0				
Family Support (DSSS)	139	0.7	85	5.6	59	10.6
PTSD Symptoms (CRTES)	140	0	81	10	63	4.5
Parent Measure						
Religious Coping						
Spiritually Based Coping	104	25.7	65	27.8	53	19.7
Discontent	104	25.7	65	27.8	53	19.7

Note: a. Rate of missing values is given in percent.

Table 22 Mixed-Effects Regression Analyses for Child's PTSD Symptomatology

Predictor	Coefficient Estimate				*p* Value			
	Step 1	Step2	Step 3	Step4	Step 1	Step2	Step 3	Step4
Step 1: Days since fire	.-.493	-.482	-.425	-.433	.000	.000	.001	.001
Loss	.512	.548	.437	.441	.000	.000	.001	.001
Step 2: Demographic								
Parental education		-.470	-.391	-.402		.663	.702	.696
Child's sex		-2.282	-1.784	-1.948		.321	.414	.379
Child's age		-1.519	-1.474	-1.490		.010	.008	.008
Child's race		-22.574	-21.982	-21.904		.020	.017	.017
Race × Age		1.948	1.807	1.813		.013	.015	.015
Step 3: General Coping								
Active coping			3.096	3.100			.110	.107
Avoidance strategies			2.404	2.458			.176	.173
Step 4: Child's Religious Coping								
Spiritually based coping				-.047				.603
Religious discontent				.070				.880

Table 23 Prediction of Child's PTSD Symptoms: Time1 → Time 1

Set Statistics			Decomposition of set effect		
Predictor	ΔR^2	*p*	R^2	β	*p*
Step 1: Days since fire	.004	ns	.004	-.043	ns
Step 2: Loss	.139	.001	.142	.268	.026
Step 3: Demographic	.150	.022	.293		
Parental education				-.072	ns
Child's sex				.051	ns
Child's age				-.337	.041
Child's race				-1.279	.010
Race × Age				1.299	.013
Step 4: General Coping	.041	ns	.333		
Active coping				.141	ns
Avoidance strategies				.101	ns
Step 5: Child's Religious Coping	.011	ns	.345		
Spiritually based coping				-.114	ns
Religious discontent				.025	ns

Table 24 Prediction of Child's PTSD Symptoms: Time1 → Time 2

Set Statistics			Decomposition of set effect		
Predictor	ΔR^2	*p*	R^2	β	*p*
Step 1: Days since fire	.005	ns	.005	-.017	ns
Step 2: PTSD at Time1	.226	.001	.231	.314	.085
Step 3: Loss	.005	ns	.236	.234	ns
Step 4: Demographic	.048	ns	.284		
Parental education				-.095	ns
Child's sex				.040	ns
Child's age				-.120	ns
Child's race				-.476	ns
Race × Age				.447	ns
Step 5: General Coping	.007	ns	.291		
Active coping				-.162	ns
Avoidance strategies				.144	ns
Step 6: Child's Religious Coping	.110	.062	.401		
Spiritually based coping				-.179	ns
Religious discontent				-.383	.030

Table 25 Prediction of Child's PTSD Symptoms: Time 1 → Time 3

Set Statistics			Decomposition of set effect		
Predictor	ΔR^2	*p*	R^2	β	*p*
Step 1: Days since fire	.065	ns	.065	-.207	ns
Step 2: PTSD at Time1	.303	.000	.368	.274	ns
Step 3: Loss	.023	ns	.391	.436	.036
Step 4: Demographic	.080	ns	.471		
Parental education				.002	ns
Child's sex				-.086	ns
Child's age				.055	ns
Child's race				.804	ns
Race × Age				-.716	ns
Step 5: General Coping	.056	ns	.528		
Active coping				-.117	ns
Avoidance strategies				.227	ns
Step 6: Child's Religious Coping	.108	.039	.635		
Spiritually based coping				-.190	ns
Religious discontent				-.417	.015

Table 26 Prediction of Child's PTSD Symptoms: Time 2 → Time 2

Set Statistics			Decomposition of set effect		
Predictor	ΔR^2	*p*	R^2	β	*p*
Step 1: Days since fire	.006	ns	.006	.133	ns
Step 2: Loss	.071	.058	.077	.139	ns
Step 3: Demographic	.130	ns	.207		
Parental education				-.030	ns
Child's sex				.018	ns
Child's age				-.278	ns
Child's race				-.075	ns
Race × Age				-.113	ns
Step 4: General Coping	.250	.000	.457		
Active coping				.145	ns
Avoidance strategies				.450	.054
Step 5: Child's Religious Coping	.004	ns	.462		
Spiritually based coping				-.055	ns
Religious discontent				.066	ns

Table 27 Prediction of Child's PTSD Symptoms: Time 2 → Time 3

Set Statistics			Decomposition of set effect		
Predictor	ΔR^2	*p*	R^2	β	*p*
Step 1: Days since fire	.039	ns	.039	-.173	ns
Step 2: PTSD at Time 2	.408	.000	.447	.447	.010
Step 3: Loss	.034	ns	.481	.155	ns
Step 4: Demographic	.028	ns	.509		
Parental education				.096	ns
Child's sex				.000	ns
Child's age				-.074	ns
Child's race				-.249	ns
Race × Age				.351	ns
Step 5: General Coping	.065	ns	.573		
Active coping				-.307	ns
Avoidance strategies				.584	.022
Step 6: Child's Religious Coping	.107	.027	.681		
Spiritually based coping				.129	ns
Religious discontent				-.393	.008

Table 28 Prediction of Child's PTSD Symptoms: Time 3 → Time 3

Set Statistics			Decomposition of set effect		
Predictor	ΔR^2	*p*	R^2	β	*p*
Step 1: Days since fire	.030	ns	.030	-.153	ns
Step 2: Loss	.207	.001	.237	.392	.036
Step 3: Demographic	.135	ns	.372		
Parental education				.154	ns
Child's sex				-.043	ns
Child's age				-.171	ns
Child's race				.268	ns
Race × Age				-.283	ns
Step 4: General Coping	.048	ns	.420		
Active coping				.092	ns
Avoidance strategies				.253	ns
Step 5: Child's Religious Coping	.031	ns	.452		
Spiritually based coping				-.174	ns
Religious discontent				-.148	ns

Table 29 Summary of Significant Findings of the Prediction of PTSD Symptoms

The Mixed-Effects Regression Model

PTSD: Days (-), Loss (+), (Age), (Race), (Race × Age) (+)

Time Specific Regressions

Concurrent Analyses

Time 1 → Time 1: Loss (+), (Age), (Race), (Race × Age) (+)
Time 2 → Time 2: (Avoidance) (+)
Time 3 → Time 3: Loss (+)

Cross Time Analyses

Time 1 → Time 2: (PTSD1) (+), Discontent (-)
Time 1 → Time 3: Loss (+), Discontent (-)
Time 2 → Time 3 PTSD2 (+), Avoidance (+), Discontent (-)

Note: Variables in parentheses were marginally significant.
"+" = positive relationship; "-" = negative relationship

Table 30 Zero-Order Correlations Between PTSD Symptoms, Days, Loss, Non-Religious Coping, & Religious Coping

					Non-Religious Coping						Religious Coping					
	PTSD symptoms				**Active Coping**			**Avoidance**			**Spiritually Based**			**Discontent**		
Measure	T1	T2	T3	**Loss**	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3
Days since fire																
Time 1	-.027	-.070	-.033	.099	-.100	-.211	-.095	-.019	-.186	-.137	.138	-.095	-.119	.009	-.228	-.398**
Time 2	.047	.072	-.001	.167	-.146	-.175	-.095	.127	-.083	-.151	.072	-.091	-.235	-.050	-.288*	-.442**
Time 3	.008	-.112	-.155	-.071	-.079	-.254	-.149	.032	-.305*	-.248	.103	.028	-.192	-.137	-.241	-.377**
Loss	.394***	.137	.400**		.246*	.332**	.399**	.267**	.334**	.400**	.165	-.020	.158	.346***	.057	.242
					Non-Religious Coping											
Active Coping																
Time 1	.385***	.279*	.345*		.657***	.380*	.661***	.693***	.399**	.384***	.204	.492**	.221*	.112	.311*	
Time 2	.457***	.416***	.461**			.617***	.579***	.796***	.552***	.219	.246	.339*	.122	-.015	.231	
Time 3	.222	.375**	.493***				.300*	.499***	.855***	.108	.194	.366**	-.053	-.122	.219	
Avoidance																
Time 1	.392***	.346**	.424**					.733***	.379*	.341**	.392**	.378*	.129	.054	.218	
Time 2	.592***	.525***	.621***						.601***	.302*	.341**	.332*	.017	-.037	.282	
Time 3	.268*	.574***	.524***							.129	.126	.253	-.114	-.021	.273	
					Religious Coping											
Spiritually Based																
Time 1	.095	.145	.073								.584***	.459***	.182	.112	.115	
Time 2	.006	.006	-.042									.614***	.266*	.182	.346*	
Time 3	-.079	-.046	.084										.312*	.290	.342*	
Discontent																
Time 1	.142	-.215	-.216											.501***	.394**	
Time 2	-.049	-.036	-.293*												.550***	
Time 3	.149	.030	.034													

* p < .05 ** p < .01 *** p < .001

Figure 1: Normal Probability Plots of Days since fire, Child's Age, Parental Education, and Resource Loss

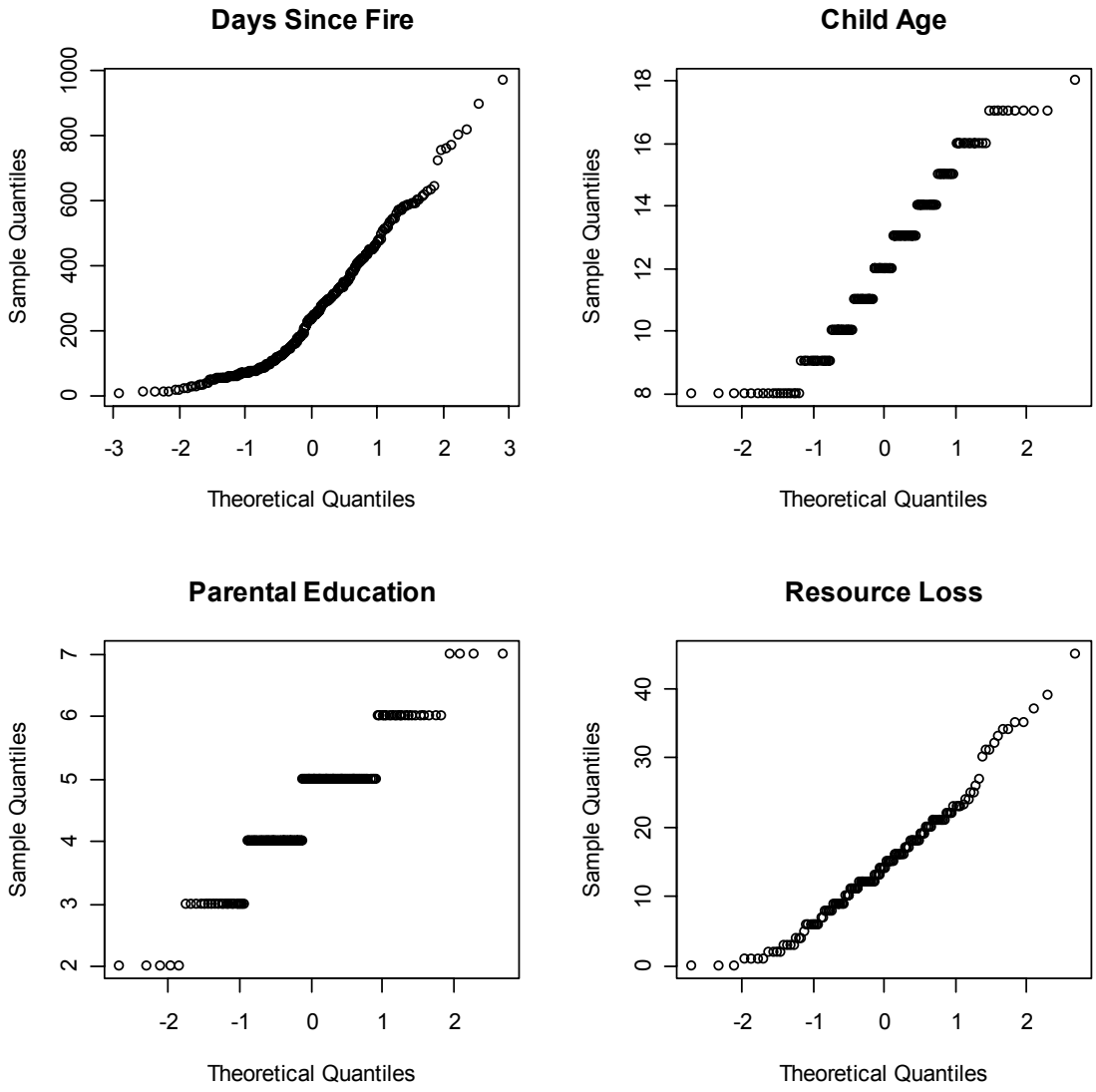
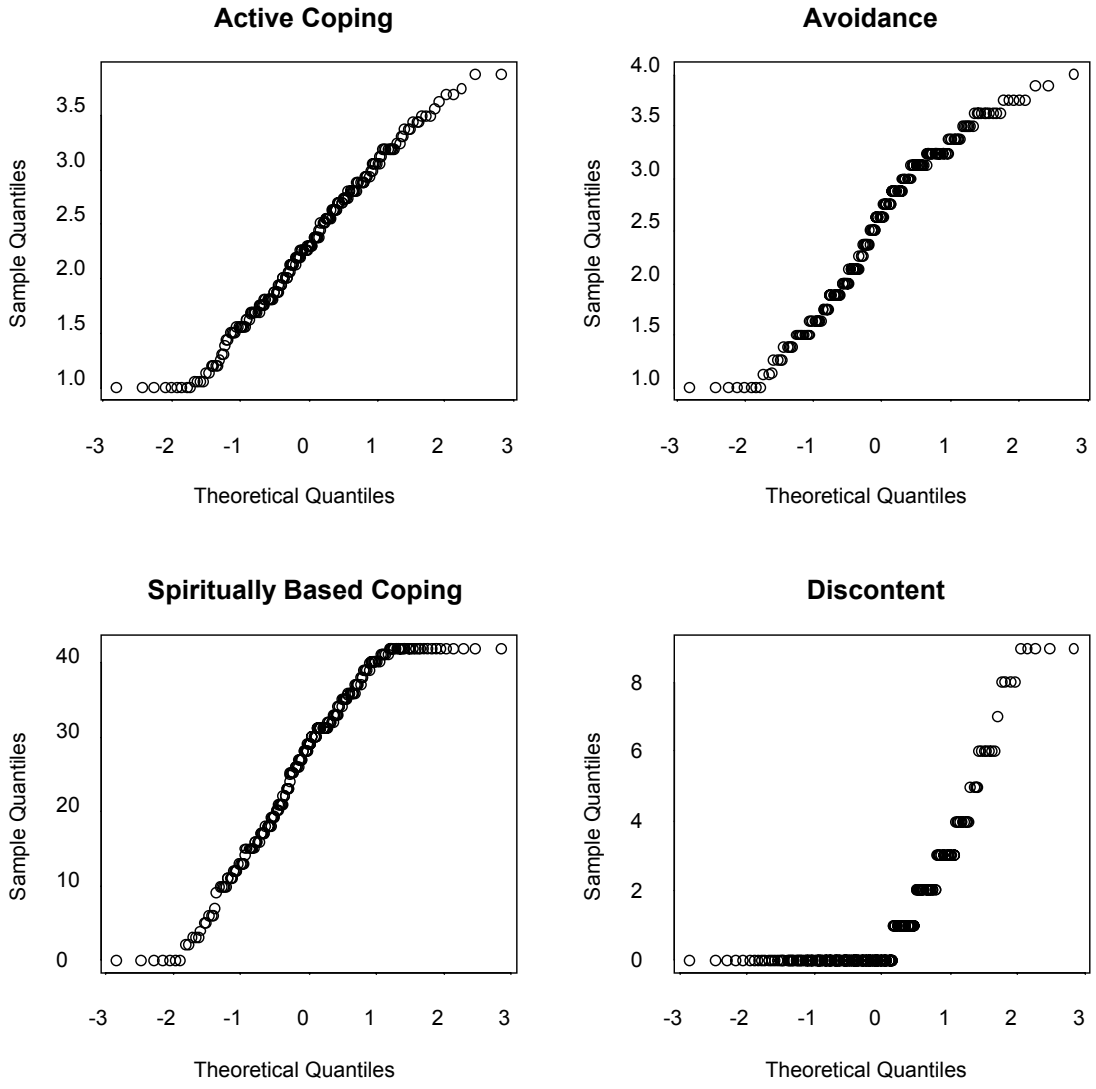


Figure 2 **Normal Probability Plots of Active Coping, Avoidance Strategies, Spiritually Based Coping, and Discontent**



CURRICULUM VITAE

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Personal Data:

Birth Place: Fujian, China
Languages: English and Mandarin Chinese

Education:

Virginia Polytechnic Institute and State University, Blacksburg, VA
Program: Clinical Psychology
Degree: Doctor of Philosophy; April, 2004

Program: Statistics
Degree: Master of Science; December, 2001

Cumulative GPA: 3.82
Awards: Graduate Teaching/Research Assistantship/ Tuition Waiver
Received a research grant from Cultural Diversity Committee at Virginia Tech in 1998.

Beijing Normal University, Beijing, China
Program: Developmental Psychology
Degree: Master of Education; Developmental Psychology; June, 1994

Program: Psychology
Degree: Bachelor of Education; June, 1991

Awards: Excellent Graduate Thesis, June, 1994
Distinguished Research Paper Award, Contest of Research Papers by Graduate Students, 1994
Excellent Graduate Student Award, 1993
Excellent Student Award, 1990, Taiwan North Min (Fujian) Foundation
Professional Scholarship, 1990

Professional Affiliations:

American Psychological Association (APA)
Association for the Advancement of Behavior Therapy (AABT)

Research Experience:

Virginia Polytechnic Institute and State University, Blacksburg, VA: Graduate Research Assistant
May, 1999 – May, 2002
Supervisors: Russell T. Jones, Ph.D., Thomas H. Ollendick, Ph.D.
In charge of data management on the NIMH funded Residential Fire Grant. Responsible for supervising data entry, data analyses and presentation, literature review, and paper write-up.

Virginia Polytechnic Institute and State University, Blacksburg, VA: Graduate Research Assistant
August, 1998 – May, 2002
Supervisor: Thomas H. Ollendick, Ph.D.
Served as primary investigator for a research project on parenting behavior and behavior problems among Caucasian and Chinese children. Responsible for literature review, design of study, data collection and analyses, and paper write-up. Worked on a China divorce dataset. Responsible for literature review, data analyses, and paper write-up.

Virginia Polytechnic Institute and State University, Blacksburg, VA: Graduate Research Assistant
September, 1997 – May, 1999
Supervisor: Kathleen, A. Ingman, Ph.D.
Served as research assistant for a research project on Chinese and American graduate students' social skills, social anxiety, and adjustment. Activities included recruiting subjects, participating in research meetings, interviewing subjects and data collection.

Beijing Normal University, Beijing, China: Graduate Research Assistant and faculty (August, 1994)
September, 1993 - January, 1996
Supervisor: Qi Dong, Ph.D.
Served as a researcher assistant for the project of "Development of Measures of Family Factors Influencing Elementary School Children" granted to Dr. Qi Dong by State Education Commission of China. Duties included participating in literature search and review, measurements development, data collection and analyses.

Beijing Normal University, Beijing, China: Graduate Research Assistant and faculty (August, 1994)
December, 1992 - June, 1996
Supervisor: Qi Dong, Ph.D.
Served as a researcher assistant for the collaborative project of "Cross-Cultural Research on Children's Fear, Anxiety, and Depression" granted by Virginia Polytechnic Institute and State University and Beijing Normal University. Duties included participating in seminars and investigation, and collecting data.

Beijing Normal University, Beijing, China: Graduate Research Assistant and faculty (August, 1994)
October, 1992 - June, 1996
Supervisor: Qi Dong, Ph.D.
Served as a chief researcher for the project titled "Family Interaction and Child Development" granted to Dr. Qi Dong by State Scientific Commission of China. Responsible for literature search and review, developing questionnaires, collecting and analyzing data, and writing papers.

Beijing Normal University, Beijing, China: Graduate Research Assistant
September, 1992 - July, 1993
Supervisor: Qi Dong, Ph.D.
Served as researcher for the project titled "Marital Transition and Child Development"granted to Dr. Qi Dong by Fok Ying Tung Education Foundation. Duties included participating in developing questionnaires, collecting and analyzing data.

Beijing Normal University, Beijing, China: Graduate Research Assistant
June, 1992 - August, 1992
Supervisor: Qi Dong, Ph.D.
Served as researcher assistant for the collaborative project of "Social Status among Chinese Adolescents" granted by Wayne State University and Beijing Normal University. Duties included designing questionnaires and collecting data.

Beijing Normal University, Beijing, China: Graduate Research Assistant and faculty (August, 1994)
August, 1991 - June, 1996
Supervisor: Qi Dong, Ph.D., and Joseph J. Campos, Ph.D.
Served as primary researcher and lab manager for the project on the "Study of Self-produced Locomotion as An Organizer of Emotional, Social, and Cognitive Development: A Collaborative Cross-National and Interdisciplinary Approach," granted to Joseph J. Campos, B. J. Bertenthal, R. Kermoian, Z. Meng, and Q. Dong by

John D. and Catherine T. MacArthur Foundation. Responsible for establishing and managing an infant study lab, organizing seminars, literature review, designing research, recruiting and testing infants and interviewing parents, coordinating, training, and supervising graduate and undergraduate research assistants, correspondence with colleagues from Peking University, University of California, Berkeley, and University of Virginia, data management, and writing papers and materials for training.

Beijing Normal University, Beijing, China: Graduate Research Assistant
March, 1991 - June, 1991
Supervisor: Qi Dong, Ph.D.
Served as researcher assistant for the project of "Impact of Divorce on Children's Psychological Development" granted to Dr. Qi Dong by Chinese Association of Women. Duties included designing questionnaires and collecting data.

Beijing Normal University, Beijing, China: Undergraduate and Graduate Research Assistant
September, 1990 - June, 1993
Supervisor: Qi Dong, Ph.D.
Served as primary researcher for the project of "Parent-Child Interaction and Child Development" granted to Dr. Qi Dong by Fok Ying Tung Education Foundation. Duties included participating in research design, collecting data, data management and analyses.

Clinical Experience:

NYU-Bellevue Clinical Psychology Internship Program, New York, NY: Clinical Psychology Intern
July, 2002-June, 2003
Rotations: Child Inpatient Unit, Comprehensive Psychiatric Emergency Program, Adult Mental Hygiene Clinic, and Survivor of Torture Program in Bellevue Hospital Center, Externalizing Disorders Service, Anxiety and Mood Disorder Service, Family Study Program, and Institute of Learning and Academic Achievement in NYU-Child Study Center
Director of Clinical Psychology Internship Program: Alan Elliot, Ph.D.
Working with multidisciplinary teams in different services. Conducted group therapy for inpatient children (age 4 to 12) with a range of severe psychopathology. Served as primary therapist for inpatient children with Autistic Disorder, impulse control disorder, oppositional defiant disorder, depression, and adjustment disorder, outpatient children, adolescents, adults and their families with difficulties including ADHD, anxiety disorders, major depression disorder, deGeorge Syndrome, eating disorder, post traumatic stress disorder, and relational conflicts, as well as adult patients with a wide variety of severe psychopathology in acute distress who received psychiatric emergency services. In addition, completed comprehensive psychological evaluations for inpatient and outpatient children and adults with difficulties ranging from ADHD, oppositional defiant disorder, developmental coordination disorder, mental retardation, depression, to learning disorder.

Department of Psychology, Virginia Polytechnic Institute and State University, Blacksburg, VA: Graduate Clinician
October, 2001 – February, 2002
Supervisor: Lee Cooper, Ph.D.
Served as primary therapist for a Chinese couple with depression, suicidal attempt, and marital conflicts.

Department of Psychology, Virginia Polytechnic Institute and State University, Blacksburg, VA: Graduate Clinician
August, 1999 – May, 2001
Supervisor: Lee Cooper, Ph.D.
Served as primary therapist for outpatient individuals and families (age 6 to 54) with adjustment disorder, impulse control disorder, ADHD with academic difficulties, oppositional-defiant disorder, exhibitionism, marital conflicts, narcissistic personality disorder, as well as court-referred adults with anger management issue and alcohol abuse.

Adolescent Unit, Southwestern Virginia Mental Health Institute, Marion, VA: Clinical Psychology Extern
May, 1999 – August, 1999
Supervisor: Ron Parsons, MA.

As a member of a multidisciplinary team, served as primary therapist for individual therapy, group therapy, and assessment for in-patient adolescents.

Department of Psychology, Virginia Polytechnic Institute and State University, Blacksburg, VA: Graduate Clinician
August, 1998 – May, 1999
Supervisor: Robert Stephens, Ph.D.; Lee D. Cooper, Ph.D.
Served as primary therapist for outpatient individuals (age 5 to 42) and families with adjustment disorder, marital, child-parent and in-law relational problems. Completed in-depth assessments adolescents and college students referred for academic and behavioral problems, learning disability, and voyeurism.

Department of Psychology, Virginia Polytechnic Institute and State University, Blacksburg, VA: Graduate Clinician
August, 1997 - May, 1998
Supervisor: Richard Eisler, Ph.D.
Served as primary therapist and co-therapist for outpatient individuals (age 6 to 42) and families with adjustment disorder, delinquent behaviors, suicidal ideation, and relationship problems.

Department of Psychology, Virginia Polytechnic Institute and State University, Blacksburg, VA: Graduate Clinician
May, 1997 - August, 1997
Supervisor: Thomas H. Ollendick, Ph.D.
Served as primary therapist and co-therapist for outpatient individuals (age 9 to 54) and families with ADHD, depression, procrastination, drug abuse, anger control, and relationship problems. Active participant during group supervision meetings, which include formal case presentations.

Department of Psychology, Virginia Polytechnic Institute and State University, Blacksburg, VA: Graduate Clinician
August, 1996 - May, 1997
Supervisor: Russell Jones, Ph.D.
Served as primary therapist for children and their families with adjustment disorder and behavior problems. Active participant during group supervision meetings, which include formal case presentations.

Additional Psychological Assessment Experience:

Department of Psychology, Virginia Polytechnic Institute and State University, Blacksburg, VA:
Graduate Student Clinician
August, 1999 – May, 2001
Supervisor: Thomas H. Ollendick, Ph.D. & Lee D. Cooper, Ph.D.
Served as primary examiner for comprehensive psychological assessment of seven school-aged children, one adolescent, and three adults. In addition, completed eight interviews with parents using the ADIS-IV-P.

Teaching Experience:

Virginia Polytechnic Institute and State University, Blacksburg, VA: Graduate Teaching Assistant
August, 1998 – May, 1999
Instructed undergraduate level Advanced Developmental Psychology Lab (2 sections). Activities include planning course syllabus, preparing and delivering lectures, preparing and grading class assignments, supervising research activities, and maintaining office hours.

Virginia Polytechnic Institute and State University, Blacksburg, VA: Graduate Teaching Assistant
August, 1997 - May, 1998
Instructed undergraduate level Introductory Psychology Lab (2 sections each semester). Responsible for preparing and delivering lecture, leading discussion, and preparing and grading weekly exams and writing assignments. Also assisted in the administration of major examinations and instructor evaluations.

Virginia Polytechnic Institute and State University, Blacksburg, VA: Graduate Teaching Assistant
January, 1997 - May, 1997
Assisted Dr. Robin P. Cooper in the administration of an undergraduate Developmental Psychology course. Duties included attending classes, grading tests and class assignments, and maintaining office hours.

Virginia Polytechnic Institute and State University, Blacksburg, VA: Graduate Teaching Assistant
August, 1996 - December, 1996
Assisted Dr. Martha A. Bell in the administration of an undergraduate Developmental Psychology course. Duties included attending classes, grading tests and class assignments, and maintaining office hours.

Beijing Normal University, Beijing, China: Instructor
September, 1995 - January, 1996
Instructor for undergraduate level Child Psychology course. Activities included planning course syllabus, preparing and delivering lectures, preparing, administering, and grading examinations and class assignments, and maintaining office hours.

Beijing Normal University, Beijing, China: Graduate Teaching Assistant
October, 1993 - November, 1993
Teaching a section of an undergraduate level Child Psychology course, Psychological Development in Infancy. Activities included preparing and delivering lectures, grading class assignments, and maintaining office hours.

Beijing Normal University, Beijing, China: Undergraduate Teaching Assistant
March, 1991 - April, 1991
Teaching a section of an undergraduate level Introductory Psychology course. Activities included preparing and delivering lectures, leading discussion, preparing, administering, and grading examinations and class assignments, leading students' athletic activities, and maintaining office hours.

Other Professional Experience:

Fall, 2001	Graduate Statistical Consultant on research designs and data analyses, serving faculty, graduate and undergraduate students at Virginia Tech, Department of Statistics, Virginia Tech.
April, 2001	Co-leader of a discussion seminar on self-view for women at a local church, Blacksburg, Virginia.
Spring, 2000	Primary leader serving a discussion group on cross-cultural adjustment, Cranwell International Student Center, Virginia Tech.
May, 1995	Psychological Consultant, "For the Health of Children," Beijing Agricultural Exhibition Museum, Beijing, China.
October, 1994	Psychological Examiner and Consultant, Family and Child's Socialization, Guozishi Kindergarten, Beijing, China.
January, 1993	Investigator, A Survey of Chinese's Sexual Beliefs and Behavior. Institute of Beijing Social Psychology, Beijing.
April, 1992	Psychological Examiner and Consultant, Elementary School of Tong County, Hebei, China
October, 1991	Psychological Examiner and Consultant, Zongcan Kindergarten, Beijing, China

Publications:

Papers

Dong, Q., Tao, S., Lu, Y., & Wang, Y. (1997). Infants' detour behavior: Development and learning ability. Acta Psychologica Sinica(in Chinese), **29**, 286-293.

Dong, Q., Wang, Y., & Ollendick, T. H. (2002). Consequences of divorce on the adjustment of children in China. Journal of Clinical Child and Adolescent Psychology, **31(1)**, 101-110.

Dong, Q., Xia, Y., Wang, Y., & Lin, L. (1993). Self-concept of children from reconstructed families. Psychological Development and Education (in Chinese), **3**, 1-9.

Dong, Q., Zeng, Q., Lin, L., & Wang, Y. (1997). Development of joint attention during infancy. Psychological Science (in Chinese), **20**, 298-302.

Nock, M. K., Goldman, J. L., Wang, Y., & Albano, A. M. (in press). From science to practice: The flexible use of evidence-based treatment procedures in clinical settings. Journal of the American Academy of Child and Adolescent Psychiatry.

Tao, S., Wang, Y., Wang, Y., & Dong, Q. (1998). Study on the relation between children's characteristics and parenting behavior. Psychological Development and Education (in Chinese), **14(3)**, 42-46.

Tao, S., Dong, Q., Wang, Y., & Campos, J. J. (1998). Locomotion experience and detour behavior development in infants. Acta Psychologica Sinica (in Chinese), **30(1)**.

Wang, Y., Ai, Q., & Zhou, Y. (1992). An analysis of cross-cultural psychometry. Psychological Development and Education (in Chinese), **2**, 33-37.

Wang, Y., & Ollendick, T. H. (2001). A cross-cultural and developmental analysis of self-esteem in Chinese and Western children. Clinical Child and Family Psychology Review, **4**, 253-271.

Paper in preparation for submission for Publication

Jones, R. T., Wang, Y., & Ollendick, T. H. (2003). Predictors of coping strategies following residential fires.

Conference Papers and Presentations:

Chen, H., Kermoian, R., Dong, Q., Wang, Y., & Witherington, D. (1995, March). Task-specific effects of locomotor experience: Evidence from performance on a manual detour task. Paper presented at the SRCD Meeting, Indianapolis, Indiana.

Dong, Q., Fang, X., Xia, Y., Pang, L., Wang, Y., & Lin, L. (1996, August). Development of a new measure of Chinese child-rearing practices: Preliminary data on its reliability and validity. Symposium paper presented at the XIVth Biennial Meeting of ISSBD, Quebec, Canada.

Dong, Q., Xia, Y., Lin, L., & Wang, Y. (1994, June). Psychological development among Chinese children in stepfamilies: Findings from a survey. Paper presented at the Beijing Workshop of the XIIIth Biennial Meeting of ISSBD, Beijing, China.

Ingman, K. A., Wang, Y., & Ollendick, T. H. (1998, November). An examination of social skills, social anxiety, and adjustment in Chinese and American students. Poster presentation at the 32nd meeting of the Association for the Advancement of Behavior Therapy, Washington, DC.

Ingman, K. A., Wang, Y., Chung, T., Khatri, M., Tilley, A., Tripi, P., & Wilson, S. (1998, April). An examination of social skills, social anxiety, and adjustment in Chinese and American students. Poster presented at the Virginia Collegiate Psychology Conference, Virginia Polytechnic Institute and State University, Blacksburg, VA.

Jones, R. T., Ollendick, T.H., & Wang, Y. (2000, August). Cross-sectional longitudinal investigation of the effects of residential fire on children and their families: Findings and implications. Presented as part of the symposium entitled "Predictors of PTSD following fire-related trauma" at the 108th APA Annual Convention, Washington, DC.

Jones, R.T., Ollendick, T.H., & Wang, Y. (2000, November). The role of coping and coping efficacy on child survivors of residential fire. Presented as part of the symposium entitled: "Coping Efficacy And Trauma Recovery" at the 16th Annual Meeting of the International Society for Traumatic Stress Studies, San Antonio, Texas.

Jones, R.T., Ollendick, T.H., & Wang, Y. (2000, November). The impact of parent's reactions on their children following residential fire. Presented as part of the symposium entitled: " PTSD and families: How does trauma affect parents, children, and spouses" at the 16th Annual Meeting of the International Society for Traumatic Stress Studies, San Antonio, Texas.

Jones, R. T., Ollendick, T. H., Wang, Y., & Clark, T. (2000, November). How do children cope with stressful life events following residential fire? Poster presented at the 16th Annual Meeting of the International Society for Traumatic Stress Studies, San Antonio, TX.

Jones, R. T., Ollendick, T. H., Kephart, C., Wang, Y., & Forbes, A. (2001, May). Mediators and moderators of PTSD in children following residential fire. Poster presented at the 7th European Conference on Traumatic Stress, Edinburgh, Scotland.

Kephart, C., Wang, Y., Jones, R. T., & Ollendick, T. H. (2001, December). Parent and child reports of child symptoms following residential fire. Poster accepted at the 17th Annual Meeting of the International Society for Traumatic Stress Studies, New Orleans, LA.

Kephart, C., Wang, Y., Jones, R. T., & Ollendick, T. H. (2001, November). Coping efficacy and the utilization of coping strategies in children following residential fire. Poster accepted at the 35th meeting of the Association for the Advancement of Behavior Therapy, Philadelphia, PA.

Khatri, M., Wang, Y., Jones, R., & Ollendick, T.H. (2000, August). Spiritually-based coping as a predictor of post-residential fire adjustment. Poster presentation at the 108th APA Annual Convention, Washington, DC.

Lin, L., Wang, Y., Dong, Q., Xia, Y., & Fang, X. (1996, August). Parenting behavior of Chinese mothers and its relation to child development. Poster presentation at the XIVth Biennial Meeting of ISSBD, Quebec, Canada.

Pang, L., Li, L., Yi, J., Wang, Y., & Dong, Q. (1996, August). Parenting beliefs of Chinese mothers:

Characteristics and correlates. Symposium paper presented at the XIVth Biennial Meeting of ISSBD, Quebec, Canada.

Wang, Y., & Dong, Q. (1997, September). Maternal parenting behavior: Structure and influencing variables. Workshop presented at the 7th Annual Virginia Beach Conference, Virginia Beach, VA.

Wang, Y., Dong, Q., Xia, Y., Ollendick, T. H. (2000, March). The impact of divorce on the adjustment of children in China. Poster presented at the 16th Graduate Research Symposium. Virginia Tech.

Wang, Y., Fang, X., Zeng, Q., Lu, Y., Tao, S., & Wu, P. (1994, June). Parenting difficulty: Its structure and influencing factors. Paper presented at the Beijing Workshop of the XIIIth Biennial Meeting of ISSBD, Beijing, China.

Wang, Y., Kephart, C., Jones, R. T., & Ollendick, T. H. (2001, December). Predictors of PTSD and depressive symptoms following residential fire. Poster accepted at the 17th Annual Meeting of the International Society for Traumatic Stress Studies, New Orleans, LA.

Wang, Y., Nock, M. K., & Goldman, J. (2003, June). Flexibility in the administration of evidence-based treatments: Examples from the treatment of childhood anxiety disorders. Grand Rounds presentation in the Child Study Center, Department of Psychiatry, New York University. New York, NY.

Wang, Y., Ollendick, T. H., Jones, R. T., & Kephart, C. (2004, November). Children's religious coping after residential fires: An exploratory study. Poster submitted to the 20th Annual Meeting of the International Society for Traumatic Stress Studies, New Orleans, LA.

Watkins, D., Dong, Q., Lin, L., & Wang, Y. (1992, August). The cross-culture validity of SDQ-1: A Chinese investigation. Paper presented at the 2nd Afro-Asian Psychological Congress, Beijing, China.

Xia, Y., Dong, Q., Wang, Y., & Lin, L. (1993, September). Impact of remarriage on children's psychological development. Paper presented at the Annual Meeting of the Beijing Psychological Association, Beijing, China.

Other Manuscripts:

Wang, Y. (1994). Structure of Maternal Parenting Behavior and Mediating Variables. Unpublished Master's thesis. Beijing Normal University, Beijing, China.

Wang, Y. (1995). Training Social Skills during the First Three Years. Unpublished manuscript. Beijing Normal University, Beijing, China.