The Mediational Role of Resource Loss between Residential Fire Exposure and Psychological Distress

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Abstract

The relationship between exposure to trauma and the development of both Posttraumatic Stress Disorder (PTSD) and general distress has been widely discussed in the empirical literature. However, relatively little attention has been paid to the specific processes through which trauma exposure leads to distress. This lack of research is particularly apparent in research involving residential fire. The purpose of this study is to examine the extent to which the four types of resource loss (object resource loss, condition resource loss, personal characteristics resource loss, and energy resource loss) mediate the relationship between fire exposure and total distress (as well as intrusion and avoidance symptom clusters). Additionally, total resource loss (a sum of the four types of resource loss) will be examined as a fifth potential mediator. The sample consists of 120 children (mean age = 12.31, SD = 2.83) exposed to residential fire who were interviewed three months after their experience. The proposed mediational analyses were explored through use of regression techniques. With regard to the relationships that showed the necessary significant correlations to perform mediational analyses, the findings of the current investigation provided some preliminary evidence for the mediational role of object resource loss and total resource loss (though these results generally failed to retain significance under the Bonferroni correction). Furthermore, the role of resource loss in the development and maintenance of PTSD was supported. Implications for future research and clinical intervention are discussed.

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Introduction

Regarding the modern day conceptualization of stress, a variety of classic theories have introduced concepts central to the understanding of stress. Cannon (1932) presented a theory proposing that an individual can withstand initial or low-level effects of physiological stressors. However, continued or high-intensity exposure to these stressors results in a disturbance of homeostasis and, ultimately, a breakdown of the biological systems. From a purely physiological standpoint, Selye (1950) discussed what he identified as the general adaptation syndrome. According to Selye, (1950), all organisms respond to outside stressors in a consistent fashion: first with an altering response, then with a response designed to resist against the stressor, and finally (once the organism's defense systems are overtaxed) an exhaustion response. The work of Caplan (1964) and Lindemann (1944) highlights the importance of the actual stressor's characteristics. They argued that the circumstances and characteristics surrounding the stressor are as important as the characteristics of the individual and his or her society when attempting to determine an individual's level of distress. Paykel's (1974) work suggests that individuals perceive events that signify some form of loss as being the most threatening. In an approach designed to examine the motivational properties underlying the stress response, Spielberger (1966) showed that individuals react much differently to the more classically understood physical threats than they do to ego threats (i.e., threats to the integrity of the self). Lazarus' (1966) first major contribution to the study of stress suggests that individual differences in stress reactions are the personal appraisals that individuals form concerning a stressful event's meaning. Lazarus and Folkman (1984) provide further clarification by discussing the concepts of cognitive appraisal (i.e., the evaluative process that an individual engages in to assess the stressfulness of his or her particular circumstance) and coping (i.e., the process by which an individual manages both the demands that are appraised as stressful and the negative emotions generated by such an appraisal).

While each of these models has contributed to our understanding of a variety of stress-related concepts such as the characteristics of the stressor, loss, cognitive appraisal, and coping, an alternative model that allows for a greater degree of specificity in the examination of psychosocial trauma is Hobfoll's (1998) Conservation of Resources (COR) model (see Figure 1). This model contends that all individuals' primary goal is survival, in that it is this goal that promotes continuation of the self, family, or species. Thus, any circumstances that threaten the

survival of a species or group are seen as stressful. According to the COR model, those things that an individual must possess in order to survive are resources. Hobfoll (1998) establishes resources as objects, conditions, personal characteristics, and energy that are either directly or indirectly valued for survival or are valued as a means of achieving these ends of survival. These resources exist at the primary level (i.e., resources that are directly required for survival such as food and shelter), the secondary level (i.e., resources that are a means to increasing the likelihood of obtaining or protecting one's primary resources such as health insurance and transportation), and the tertiary level (i.e., resources that are only tied to one's survival in a symbolic means such as a luxurious home). Where a resource falls on this hierarchy (primary to tertiary) identifies the extent to which it is critical for one's survival. Primary resources are more critical to an individual's survival than secondary resources. In turn, tertiary resources are those that are least critical to an individual's survival (Hobfoll, 1998; Hobfoll, Johnson, Ennis, & Jackson, 2003).

The central tenet of Hobfoll's (1998) COR theory is that individuals concern themselves with obtaining, retaining, and protecting those resources that they value. Individuals also seek to foster that which they value. Thus, as previously indicated, stress occurs whenever a) there is a threat of resource loss, b) there is an actual loss of resources, or c) there is a failure to adequately gain additional resources following significant resource investment.

These resources have been further categorized into the following four dimensions: objects (i.e., cars, trucks, etc.), conditions (i.e., marriage, employment, family, social support), personal characteristics (i.e., feelings of independence, self-esteem), and energy (i.e., personal health, income, free time; Hobfoll, 1998; Monnier, Cameron, Hobfoll, & Gribble, 2002).

More specifically, object resource loss concerns those resources that have a physical presence (i.e., home, transportation, toys). These objects can be found to be worthwhile as a function of their survival value or as an acquired value (in that they are linked to status or self-esteem). Individuals pursue object resources to sustain life, gain social dominance, and develop a sense of self-worth. Condition resource loss covers a wide range of phenomena, the most heavily discussed of which are disruption and social support. Condition resources are often slow to acquire and often involve great resource investment. However, they can be lost rapidly (i.e., job layoff, marital indiscretion ending in divorce). Condition resources are particularly valued in that they provide access to pools of other resources. Personal characteristics resource loss includes more internal phenomena that can be affected by trauma, such as self-efficacy and the

use of various coping strategies. Finally, energy resource loss refers to characteristics such as an individual's change in health and free time as a result of trauma (Hobfoll, 1998).

The current study was designed to examine the potential mediating role of each of these categories of loss between exposure and distress in a sample of children who experienced a residential fire. Prior to presenting the adult and child literature documenting attempts to establish the mediational role of resource loss in the disaster area, the role of exposure and consequences of distress on children's reactions to trauma will be presented.

Exposure

The child literature attests to the fact that exposure to traumatic events leads to varying levels of distress. The National Comorbidity Survey (Kessler, Davis, & Kendler, 1997) examined 5,877 individuals for various forms of childhood adversity and found that children were exposed to a wide range of traumatic incidents. For example, 10.0% of the males and 8.6% of the females had been exposed to a natural or man-made disaster, 13.0% of the males and 6.0% of the females had witnessed trauma, 8.2% of the males and 5.2% of the females had experienced an accident, and 1.2% of the males and 0.8% of the females had experienced some other PTSD event. Furthermore, Kessler et al. (1997) found that 23.2% of the children in their study reported having experienced only one form of childhood adversity, 16.1% had experienced two forms, and 35.0% of the children reported having experienced three or more forms of childhood adversity.

When discussing children's exposure to traumatic events, Pfefferbaum (1997) noted that children's traumatic responses were generally correlated with their exposure to the traumatic event. Exposure can be measured by both physical proximity (physical distance from the event) and emotional proximity (emotional involvement in the event, such as the injury or death of a loved one). It has been repeatedly suggested that children's emotional responses and the severity of the distress that they experience at the time of the traumatic event influence later symptomatology and recovery (Lonigan, Shannon, & Taylor, 1994; McFarlane, 1987; Nader, Pynoos, Fairbanks, & Frederick, 1990; Tyano, Iancu, & Solomon, 1996). However, the specific nature of the relationship between exposure to trauma and later symptomatology has not been clearly defined.

Exposure to trauma appears to have differential effects with respect to gender, race, and socioeconomic status (SES). With very few exceptions, studies examining gender differences in

disaster survivors have found females to be twice as likely to develop PTSD following exposure to a traumatic event (Green et al, 1990; North et al., 1999; Steinglass & Gerrity, 1990). Alternatively, studies examining the relationship between race and disaster exposure have found mixed results. While some studies suggest that members of minority races have higher rates of disaster exposure than do Caucasians, (March, Amaya-Jackson, Terry, & Costanzo, 1997), others have indicated insignificant race effects following disaster (Jones, Frary, Cunningham, Weddle, & Kaiser, 2001). Finally, socioeconomic status indicators such as education, income, literacy, or occupational prestige have been examined with respect to disaster exposure. Specifically, low-SES individuals exposed to disaster have been shown to be at higher risk for poor psychological outcomes than high-SES individuals (Hanson, Kilpatrick, Freedy, & Saunders, 1995; Norris, Baker, Murphy, & Kaniasty, 2005).

With particular significance to the present investigation, exposure has been correlated with loss in a variety of disaster studies. Smith and Freedy's (2000) application of the COR model to flood victims illustrated that resource loss mediates the relationship between exposure and distress. In a more recent study examining the psychological effects of an earthquake, Bland et al. (2005) found that both exposure and loss were significantly related to the development of PTSD. Thus, a relationship between exposure and distress appears to be present following disaster.

Distress

One of the psychological disorders most closely related to individuals' distress following traumatic events is Posttraumatic Stress Disorder (PTSD). PTSD is defined by the DSM-IV-TR as symptomatic re-experiencing, avoidance, and increased arousal in response to one's "…exposure to an extreme traumatic stressor involving direct personal experience of an event that involves actual or threatened death or serious injury, or other threat to one's physical integrity; or witnessing an event that involves death, injury, or a threat to the physical integrity of another person; or learning about unexpected or violent death, serious harm, or threat of death or injury experienced by a family member or other close associate." (American Psychiatric Association, 2000). The causal relationship between trauma exposure and both PTSD and general distress has been observed across a number of studies and trauma types (Hobfoll et al., 1997; Hobfoll, 1998; Smith & Freedy, 2000)

Examples of symptoms within the re-experiencing cluster include: "…recurrent and intrusive distressing recollections of the event, including images, thoughts, or perceptions…recurrent distressing dreams of the event…acting or feeling as if the traumatic event were recurring…[and] intense psychological distress at exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event...". Children may re-experience symptoms in a unique fashion. For example, they may engage in repetitive play that reflects themes or aspects of the traumatic experience, begin having frightening dreams following the traumatic event that do not incorporate any recognizable content, or re-enact specific aspects of the traumatic experience (American Psychiatric Association, 2000).

With regard to avoidance, some of the symptoms identified by the DSM-IV-TR include: "…efforts to avoid thoughts, feelings or conversations associated with the trauma…efforts to avoid activities, places, or people that arouse recollections of the trauma…inability to recall an important aspect of the trauma…[and] markedly diminished interest or participation in significant activities…" (American Psychiatric Association, 2000).

Finally, arousal is identified by the following symptoms: "…difficulty falling or staying asleep…irritability or outbursts of anger…difficulty concentrating… hypervigilance…[and] exaggerated startle response…" (American Psychiatric Association, 2000). In addition, symptoms within these three clusters must persist for more than one month following the traumatic event and cause "…significant distress or impairment in social, occupational, or other important areas of functioning." (American Psychiatric Association, 2000).

PTSD has also been correlated with a number of additional psychological disorders in children. Famularo, Fenton, Kinscherff, and Augustyn (1996), for example, examined 117 children who had been exposed to maltreatment or some other form of childhood trauma. Of the sample, 41 met diagnostic criteria for PTSD as measured by the Diagnostic Interview for Children and Adolescents-Revised (DICA-R). The PTSD diagnosis in these 41 children was significantly correlated with disorders such as Attention Deficit Hyperactivity Disorder, (ADHD), Brief Psychotic Disorder or Psychotic Disorder – Not Otherwise Specified, anxiety disorders other than PTSD, mood disorders, and suicidal ideation (Famularo et al., 1996).

It therefore becomes clear that children experience distress following exposure to traumatic events. Additionally, Famularo et al. (1996) noted that the distress associated with childhood trauma is strongly associated with a variety of additional serious psychological

disorders. Thus, it is apparent that exposure to traumatic events results in the development of psychological disorders, particularly PTSD, in both children and adults.

Resource loss in adults

While this study will examine the potential mediating role of resource loss on children's reactions to a traumatic event (residential fire), it is helpful to first discuss the existing literature on the influence of loss on the relationship between exposure and distress in adults. Following this discussion, the extent to which similar relationships exist within the child literature will be examined.

With respect to the adult literature, the possible mediational effect that loss exhibits on the relationship between trauma exposure and distress has been assessed with regard to hurricanes. In a study examining 418 adults' adjustment following Hurricane Hugo, Freedy, Shaw, Jarrell, and Masters (1992) found that resource loss was positively related to psychological distress and was a more powerful predictor of psychological distress than were personal characteristics and post-disaster coping behavior. As such, resource loss was identified as a risk factor for psychological distress following a traumatic event. Additionally, though resource loss was not specifically tested as a mediator (in that the researchers did not examine the relationship between trauma exposure and resource loss), they suggested that it may serve as a potential mediator in the relationship between trauma exposure and psychological distress.

In a related study, Smith and Freedy (2000) examined resource loss with respect to its mediational role in the relationship between flood exposure and psychological distress. When working with a sample of 131 Midwest adults affected by floods, the Hobfoll (1998) COR model was used as a framework for determining the extent to which the relationship between exposure to flooding and psychological distress, as well as the relationship between exposure to flooding and physical symptoms (i.e., indigestion, headaches) was mediated by resource loss. Structural equation modeling was used to test a model in which resource loss served as a mediator between flood exposure and outcome variables (psychological distress and physical symptoms) against a model in which resource loss did not serve as a mediator. With respect to both outcome variables, the model in which resource loss served as a mediator was a better fit. Additionally, the authors tested the fit of a full mediator model versus a partial mediator model. Support for both the full and partial mediator models was obtained, with no significant differences found between the models with respect to fit (as determined by the chi-square difference test). As such,

the full mediator model was endorsed due to reasons of parsimony (in that it contained fewer estimated paths). Thus, Smith and Freedy's (2000) findings suggest support for resource loss as a mediator between disaster exposure and psychological distress.

Holahan, Moos, Holahan, and Cronkite (1999) found that resource change (i.e., loss or gain of resources) completely mediated the relationship between negative life events and depressive symptoms. They began by establishing that, prior to entering resource loss into their model, excess negative events and depressive symptoms showed a significant relationship with each other. A significant inverse relationship was then found between excess negative events and psychosocial resources (wherein, an increase in excess negative events was associated with decreased resources). Finally, this change in resources was shown to be significantly associated with changes in symptoms of depression, wherein resource loss was significantly associated with an increase in depression and resource gain was significantly associated with a decrease in depression. Thus, it was concluded that the positive relationship between negative life events and depressive symptoms was mediated by a decrease in psychosocial resources. That is, individuals experiencing negative life events showed greater levels of depression when they experienced a loss of resources as a result of the negative life events. It must be noted, however, that the negative life events measured by the Health and Daily Living Form (Holahan et al., 1999) were generally of a non-traumatic nature (i.e., trouble with supervisors at work, lengthy unemployment, substantial decrease in income). Additionally, this study focused on depression rather than PTSD. Regardless of these differences, this investigation did provide support for the mediational role of resource loss between negative life events and psychological dysfunction. One shortcoming of both of the preceding study as well as the Smith and Freedy (2000) study is that all four dimensions of loss specified by Hobfoll's (1998) COR model were not investigated.

In a more fine grained analysis of the potential mediating role of resource loss, the four types of loss specified by Hobfoll's (1998) COR model were individually examined by Monnier et al. (2002). These researchers postulated that resource loss mediated the relationship between exposure to a traumatic event and psychological functioning in adults. This study examined 150 male fire-emergency workers ranging from 23 to 57 years of age. Exposure was measured by the fire-emergency workers' responses to six subscales of the Critical Incident Inventory (CII): trauma to self, victims known to fire-emergency worker, multiple casualties, incidents involving children, unusual or problematic tactical operations, and exposure to severe medical trauma.

Loss was assessed through the Conservation of Resources – Evaluation (COR-E). The COR-E measures loss across the dimensions of loss consistent with Hobfoll's (1998) COR model of resource loss. The outcome variables examined were: depression, anger expression, and state anger. Monnier et al. (2002) found evidence for loss' mediational role between exposure and depression as well as exposure and anger expression. More specifically, condition resource loss and personal characteristics resource loss mediated the relationship between exposure and depressive symptoms while personal characteristics resource loss mediated the relationship between exposure and anger expression.

Hence, the mediational role of resource loss between exposure and distress has been documented. However, given that only two studies have examined the mediational effects of specific types of resource loss, (Holahan et al., 1999; Monnier et al., 2002), it is clear that more specificity with regard to the mediational role of specific subtypes of loss is in order. Inasmuch as a better understanding of these mediating factors may provide researchers and clinicians with greater insight into the mechanisms through which trauma exposure impacts the development of PTSD, future study is needed. The present study examined the impact of resource loss as one of these mediating factors and attempted to determine the extent to which it contributes to the onset of problems associated with exposure to traumatic events (specifically, residential fire) in children.

Resource loss in children

While no child studies have examined resource loss as a mediator in the relationship between exposure and psychological distress, several have examined it as a predictor of distress. Additionally, resource loss has been found to be related to other variables within the child literature. Garrison et al. (1995) examined 400 children's reactions to Hurricane Andrew. Their study focused on characteristics such as the actual disaster experience, disaster-related losses, and psychiatric symptomatology. Disaster-related losses were further specified as being either objective (i.e., loss of furniture or clothing) or personal-social (i.e., sleep or free time). They found that, in a univariable logistic regression analysis, personal-social resource loss was a significant correlate of PTSD. In particular, these children cited loss of companionship and loss of an understanding teacher as the two most frequently occurring forms of personal-social resource loss following the hurricane. These findings further suggest that loss is related to PTSD following exposure to a traumatic event.

In one of the few child studies examining types of resource loss, Vernberg, La Greca, Silverman, and Prinstein (1996) examined the effects of Hurricane Andrew on 568 elementary school children three months after the event. They found that loss significantly contributed to the variance observed in the children's PTSD ratings. The primary types of loss observed in this study were: loss of possessions and housing, disruption of familiar roles, and disruption of routines.

In a longitudinal study examining the effects of residential fire on children, Wang (2004) found that resource loss was positively related to child PTSD symptomatology in 130 adolescents (ages 8-18) of Caucasian and African American decent. A mixed-effects regression analysis showed that resource loss was one of the variables that significantly predicted symptoms of PTSD over time, again establishing a relationship between resource loss and child distress following trauma. One of the shortcomings with this study, however, is that it failed to examine the differential effects of each type of resource loss (rather, it simply examined the effects of total resource loss).

Lastly, in a study examining the psychological effects of severe wildfires on 209 ninth grade Central Florida students, Langley and Jones (2005) found evidence for resource loss' role in PTSD symptomatology. Two regression analyses (one examining resource loss ratings at Time 1 [three months following the fire] and PTSD ratings at Time 1 and another examining resource loss ratings at Time 1 and PTSD ratings at Time 2 [10 months following the fire]) showed that resource loss significantly predicted variance in PTSD symptomatology at both time points. Higher levels of resource loss were related to higher levels of PTSD symptomatology. As with Wang, (2004), however, this study again examined only the effects of total resource loss rather than the relative effects of each of the four types of resource loss.

In summary, it is clear that loss and resource loss are related to psychological distress in children following traumatic events (Garrison et al., 1995; Langley & Jones, 2005; Vernberg et al., 1996; Wang, 2004). However, as has been previously noted, the COR model has not yet been used to examine the extent to which resource loss mediates the relationship between children's exposure to trauma and the resulting levels of distress. The present study attempted to do so.

Benefits of the COR model over existing models

A case will be made for the use of the COR model (Hobfoll, 1998) to test the potential mediating role of loss on the relationship between exposure and distress. That is, while several conceptual models have either examined or articulated pathways through which "loss-related variables" (i.e., reduction in social support, disruption in daily routines) have impacted child outcomes following traumatic events, Hobfoll's (1998) COR model provides a more precise means of testing the potential mediating role of these variables. Phenomena previously examined in both the dose-response model (La Greca, Silverman, Vernberg, & Prinstein, 1996) and Pynoos, Steinberg, and Piacentini's (1999) developmental psychopathology model will be examined

La Greca et al. (1996) showed the following variables to be significant predictors of child PTSD symptomatology in an assessment conducted seven months after Hurricane Andrew: perceived life threat, number of loss-disruption events following the hurricane, social support, (specifically, social support from parents and classmates), and various coping strategies (specifically, positive coping, blame-anger, and social withdrawal). Similarly, Pynoos et al. (1999) proposed a developmental psychopathology model that places equal importance on proximal development and proximal psychopathology, detailing the ways in which their interactions influence early adjustment in children. In this complex model, the influence of traumatic experiences on psychopathology are said to be a product of both: a) the proximal secondary stressors and trauma reminders subsequently experienced by the child as a result of the traumatic experience and b) proximal developmental and ecological concerns such as the child's reliance on parents, the child's previous trauma experiences, the child's temperament, and important social relationships (i.e., family, school, peers).

While both of these models provide a reasonable degree of insight into the role of loss-related variables in the development and maintenance of negative outcomes following child trauma, they are not without their drawbacks. For example, in the La Greca et al. (1996) study, mediation was not tested. In failing to examine the variables from a mediational standpoint, no information on causality was obtained. Similarly, though the model proposed by Pynoos et al. (1999) is quite comprehensive, (including characteristics of the stressor, trauma reminders, acute distress, temperament, and attachment style), a question arises as to how one might test such an all encompassing model in light of the many variables it embraces. For example, to test such a model would require a massive assessment undertaking as well as a very large sample size to

obtain sufficient power. A final criticism of both models is the authors' combining of the loss and exposure variables into a single construct. Rather than separating these two variables, (and thus, allowing for the examination of the relative impact of each), only their joint contribution was obtained. Such a practice adds ambiguity to the data's interpretation, as well as each factors' relative contributions to overall outcome.

Therefore, the potential mediating role of several factors examined in the aforementioned models will be tested within the context of Hobfoll's (1998) four resource loss categories. Using condition resource loss as an example, disruption in social support discussed in the Pynoos et al. (1999) model may be examined within the condition resource category while "frequent moving and living in a home that suffered damage" discussed by La Greca et al. (1996) may also be conceptualized as a type of condition loss. Additionally, the loss of a parent's job, (Pynoos et al., 1999), the hospitalization of a family member, parental divorce, (La Greca et al., 1996), as well as separation from parents (Pynoos et al., 1999) may also be examined within the context of this resource category. Lastly, changes in the availability and utilization of social support as well as changes in family constellation and function may be examined. In summary, it was hoped that this "reconceputualization" of previously examined loss-related variables within the four categories of resource loss (i.e., object, condition, personal characteristics, energy), will allow a mediational test of each.

Thus, it appears that resource loss plays an important role in the relationship between exposure and distress. However, the pathway among the variables of exposure, distress, and loss are not completely clear. Therefore, the current study attempted to examine five competing models assessing the mediational impact of the four categories of resource loss as well as total resource loss.

The present study examined the relationship between children's self-reported exposure to fire and children's self-reported levels of total distress, (as well as intrusion and avoidance), as mediated by children's self-reported levels of resource loss due to the fire. Specifically, loss was divided into the four dimensions outlined in Hobfoll's (1998) COR model (objects, conditions, personal characteristics, and energy) in an effort to examine whether or not these dimensions played differential mediational roles. Total resource loss (the sum of all four of the abovementioned types of resource loss) was also examined as a potential mediator.

For the purposes of the analyses in this study, children's self-reports of the seriousness of the fire (appraisal) served as the predictor variable. Children's self-reported levels of total distress, intrusion, and avoidance served as the criterion variables. Finally, children's levels of resource loss served as the proposed mediator variables. This mediator model first proposed that children exposed to residential fire would experience distress. Additionally, it was further proposed that the various forms of resource loss would serve as mediators in the anticipated relationship between exposure and distress.

Hypotheses

The four dimensions of resource loss, as well as total resource loss, were analyzed separately to determine whether or not they had differential effects on the proposed mediational relationship. Thus, the five primary hypotheses of this study were as follows:

(1) Object resource loss will serve as a mediator in the relationship between exposure and total distress.

(2) Condition resource loss will serve as a mediator in the relationship between exposure and total distress.

(3) Personal characteristics resource loss will serve as a mediator in the relationship between exposure and total distress.

(4) Energy resource loss will serve as a mediator in the relationship between exposure and total distress.

(5) Total resource loss will serve as a mediator in the relationship between exposure and total distress.

More specifically, there is greater evidence to hypothesize a mediating effect for object resource loss and condition resource loss. For instance, Vernberg et al. (1996) found that factors related to object resource loss are significantly correlated to children's levels of PTSD. Likewise, factors related to condition loss have also shown significant correlations to children's levels of PTSD (Garrison et al., 1995; Vernberg et al., 1996). Thus, there was a greater likelihood that the mediational hypotheses for object resource loss and condition resource loss would be supported than the other three hypotheses. A mediating effect for resource loss would be established if the statistical relationship between exposure and distress was found to drop in significance once resource loss was entered into the regression equation (Baron & Kenny, 1986, Holmbeck, 1997).

Additionally, several demographic variables were tested for. As girls have consistently been shown to exhibit more distress following traumatic events (Lonigan, Shannon, Finch, Daugherty, & Taylor, 1991; Shannon, Lonigan, Finch, & Taylor, 1994; Vernberg et al., 1996), the effects of gender were examined. Additionally, African Americans have been shown to exhibit greater levels of PTSD following trauma (Lonigan et al., 1991). Thus, this portion of the study examined race as well. Finally, as children's ages have been shown to be associated with differential levels of PTSD (Lonigan et al., 1991; Shannon et al., 1994), this demographic variable was also investigated. Given the often contradictory nature of several of these studies, no specific hypotheses will be made with regard to demographic variables.

Method

Participants

The data examined in this study were collected by Jones and Ollendick (2002) in the context of a National Institute of Mental Health (NIMH) grant designed to assess the psychological impact of residential fire on children. The sample in this study consisted of 140 children who had experienced a residential fire. The median age of this sample of children was 12.11 (SD = 2.08). Fifty-four percent of the children in the study were girls and 46% were boys. With regard to race, 74 of the children were identified as African American while 66 were identified as Caucasian. Additionally, 54% of the children in the sample were at home during the time of the fire. Approximately 30% of the children thought that they were going to die during the fire, 10% observed some family member get hurt or burned, and 10% lost a family pet. In preparation for the current study's analyses, a listwise deletion of subjects was conducted to address missing data. Following this listwise deletion, the remaining sample size was 120 children (mean age = 12.31, SD = 2.83). Sixty-eight of the remaining children in the study were girls and 52 were boys. Finally, with regard to the racial makeup of the remaining 120 children, 62 were identified as African American, while 58 were identified as Caucasian.

Measures

A modified version of Freedy's Resource Loss Scale (FRTE; Freedy, Shaw, Jarrell, & Masters, 1992, Jones & Ollendick, 1994) was used to obtain resource loss ratings from children. This Resource Loss Scale for Children (RLSC; Jones & Ollendick, 1994) provides a measure of children's total resource loss. In addition to a total resource loss scale, it contains subscales measuring Hobfoll's (1998) four resource loss subtypes (object loss, condition loss, personal

characteristics loss, and energy loss). The RLSC is a self-report measure containing 22 items assessing loss along the four subtypes. Children responded "yes" or "no" to whether or not they experienced the loss of a particular item. With respect to items where they responded "yes", children were asked to further rate the extent of their loss (1 = a little, 2 = some, 3 = a lot). Total loss scores were obtained by adding the impact of loss across the 22 items. Children were reported to have understood the concept of loss and were able to provide information about the way in which the loss affected their lives. A Cronbach's alpha analysis was performed to obtain internal consistency ratings for all four resource loss types, as well as total resource loss in the current study's sample (see Table 2). Using standardized values for the RLSC, internal consistency for the current study was as follows for each particular type of resource loss: object resource loss was 0.82, condition resource loss was 0.58, personal characteristics resource loss was 0.67, energy resource loss was 0.65, and total resource loss was 0.81. Of the five variables examined, only object resource loss and total resource loss met the 0.70 reliability coefficient threshold established by Nunnaly (1978). A summary of the RLSC's results is presented in Table 1.

The Fire Questionnaire (Jones & Ollendick, 2002) was used to obtain a measure of children's exposure to the fire. It uses a combination of multiple response items and open-ended questions to assess children's level of exposure to residential fires. During their original NIMH study, Jones and Ollendick (2002) implemented a grouping of Fire Questionnaire items that could be used to obtain a measure of exposure. However, using this grouping proved to be inappropriate for the current study. Some of the items used by Jones and Ollendick (2002) involved content related to resource loss. For example, the personal injury item suggested in this grouping could also be conceptualized as an energy resource loss item. Thus, using the exposure measure suggested by Jones and Ollendick (2002) for the current study would have been inappropriate, in that it would adversely affect the independence between the predictor variable and the potential mediators (resource loss types). As such, an appraisal item from the Fire Questionnaire was used as a measure of exposure. This appraisal item asked children to rate how serious they thought the fire had been after it was over (1 = not at all, 2 = a little, 3 = some, 4 = a lot). It was believed that this item allowed for an assessment of the scope and seriousness of the fire, while still staying relatively independent of the resource loss items used to measure the potential mediator. Thus, this appraisal item was used as a measure of exposure for the

current study. Currently, psychometrics for the Fire Questionnaire are still being determined. As such, there is no psychometric information concerning this instrument available at this point. A summary of the Fire Questionnaire's results is presented in Table 1.

The Children's Reaction to Traumatic Events Scale (CRTES; Jones, 1994) was used to obtain a measure of children's distress. This 15-item self-report assesses PTSD symptomatology over the past week. Specifically, this version of the CRTES measures intrusion and avoidance, and then combines these scores to obtain a measure of total distress. Children respond to each item using a four-point likert scale (0 = not at all, 1 = rarely, 3 = sometimes, 5 = often). As previously discussed, total CRTES scores were obtained by adding the scores across the 15 items. Jones, Fletcher, and Ribbe (2002) have suggested that CRTES scores falling between 0 and 14 be used as indicators of low distress, scores falling between 15 and 27 be used as indicators of moderate distress, and scores of 28 and above be used as indicators of high distress. A Cronbach's alpha analysis was performed to obtain internal consistency ratings for both symptom clusters, as well as total distress (see Table 2). Using standardized values for the CRTES, internal consistency for the current study was 0.86 for intrusion and 0.77 for avoidance. The internal consistency for total distress was 0.87. All three of the variables examined met the 0.70 reliability coefficient threshold established by Nunnaly (1978). A summary of the CRTES' results is presented in Table 1.

Procedure

All policies and procedures of the study from which these data were collected were in accordance with American Psychological Association (APA) ethical guidelines, as well as the Institutional Review Board (IRB) guidelines for Virginia Tech University. Each family was paid $75 as compensation for their participation in this study. The data being analyzed for this study were collected an average of three months following a residential fire. Informed consent from parents, as well as child assent, were obtained from each family prior to data collection. Participants were independently interviewed by graduate students who were enrolled in an APA approved clinical psychology doctoral training program. These students had been fully trained in the administration and scoring of the instruments being given. Interviews were conducted at a variety of locations, such as health clinics, libraries, local churches, and Red Cross offices. The three instruments being examined during the current project were part of a larger battery of interviews and self-report instruments which took approximately three hours to administer to

each family. This assessment battery consisted of an unstructured interview, a structured interview, and several self-report measures. Cumulatively, the battery aimed to assess individuals' experiences during the fire, psychopathology resulting from the fire, and a number of other factors including coping, resource loss, and levels of exposure. Prior to departing the study, all subjects were debriefed.

Analyses

The present investigation employed the methodology suggested by Baron and Kenney (1986) and Holmbeck (1997) to test for mediation. For each possible outcome variable (total distress, intrusion, and avoidance), five separate regression analyses were planned to determine the extent to which resource loss (object resource loss, condition resource loss, child personal characteristics loss, child energy loss, and total resource loss) mediated the relationship between the predictor variable and the outcome variable. For each regression analysis, four demographic variables (age, gender, race, and SES) were originally planned to be entered as blocking variables into each step in an effort to decrease the amount of unexplained error in the results.

Prior to the regression analyses, the effects of the previously discussed demographic variables were examined via one-way ANOVAs. A Bonferroni adjustment was completed to control for experimenter-wise error (Sankoh, Huque, & Dubey, 1997). The adjustment procedure recommended the use of $p < .01$ for the resource loss variables and $p < .0167$ for the distress variables (as the exposure variable involved only one test for each demographic variable, $p < .05$ was still used). Both gender and race were found to have significant effects (gender having significant effects on appraisal and race having significant effects on both object and total resource loss; see Tables 3-4), and were thus entered into the first step of all regression equations. Age was not found to have significant effects on any variables, and was not entered into the regression equations (see Table 5). Finally, SES was not examined as a blocking variable. During the acquisition of the original data, a number of parents elected not to report household income (as was their option). In determining whether to analyze only the remaining subjects for whom household income data were available, it was determined that omitting the subjects for whom household income data were not available would significantly decrease the sample size. A similar pattern was found for other potential proxy variables for SES (i.e., parental education level). Thus, rather than lose a substantial amount of data (and, as a result, statistical power) by examining SES, it was decided that the variable would not be examined.

Step two of the analyses was to involve regressing the outcome variables (total distress, intrusion, or avoidance) onto the predictor variable (exposure). Finally, the outcome variables were to be regressed onto the predictor variable and the potential mediators to determine the mediational effect of each potential mediator in step three. As noted previously, during all steps of each analysis, relevant demographics were to first be entered into the regression equation to account for their effects on the relationships being examined. A hierarchical regression was used so that the analyses would reflect the logical and theoretical considerations associated with the ordering of the variables entered. Entering the demographic variables into the regression equations first would assess their effects on the outcome variables alone. By entering exposure into the equation next, this would assess the amount of variance it produced in the outcome variables after controlling for demographic variables. Finally, entering each of the proposed mediator variables third would determine their effects on the outcome variables after the effects of the demographic and predictor variables were partialed out from the proposed mediator variables.

The extent to which the effects of each potential mediator were significant was analyzed by examining the changes in beta weights and the significance of the relationship between exposure and distress once the potential mediators were entered into the equation. If the significance of the beta weights decreased significantly after the potential mediators were entered into the regression equations, then partial mediation was inferred. If the relationship between exposure and distress became non-significant following the introduction of the potential mediators into the regression equations, then full mediation was inferred.

Results

To determine whether or not resource loss served as a mediator between appraisal and distress, the procedures outlined by Baron and Kenny (1986) and Holmbeck (1997) for mediational analyses were implemented. Specifically, the data were analyzed using multiple regression techniques. In addition to total distress, the two clusters of PTSD measured by the CRTES, (Jones, 1994; avoidance and intrusion), were also schedule to be examined as outcome variables in order to obtain a more fine-tuned explanation of the effects of any potential mediation on the various components of distress.

Following the guidelines set forth by Baron and Kenny (1986) and Holmbeck, (1997), the first step in this process involved establishing significant correlations between exposure, each

potential mediator, and each outcome variable (see Table 6). A one-tailed Pearson correlation was conducted with all of the variables of interest. Concerning the potential mediators, the necessary significant correlational relationships were only observed with object resource loss and total resource loss. This negated the possibility of testing for mediation with the remaining three types of resource loss (personal characteristics, condition, and energy). Regarding the outcome variables, the necessary significant correlational relationships were only observed with total distress and intrusion, negating the possibility of testing for resource loss' potential mediating effects on the relationship between exposure and avoidance. Thus, four regressions were performed. The potential mediational role of object resource loss would be tested with respect to both the relationship between exposure and total distress and the relationship between exposure and intrusion. Likewise, the potential mediational role of total resource loss would be tested with respect to the relationship between exposure and both of these outcome variables.

Four regressions in each analysis were performed for each potential mediating relationship (see Tables 7, 10, 13, and 15). The first regression examined the relationship between the demographic variables and the outcome variables (either total distress or intrusion). Next, a regression was performed between exposure and the outcome variables, partialing out any effects of the demographic variables. Finally, a regression of exposure and the potential mediator onto the outcome variables was conducted and analyzed, again partialing out any effects of the demographic variables. A Bonferroni adjustment was completed to control for experimenter-wise error (Sankoh et al., 1997). The adjustment procedure recommended the use of $t > 2.2701$, $p < .0125$.

For each of the potential mediational relationships examined, gender and race were entered into the regression to control for their effects prior to the examination of the relationship of the potential mediator. The first potential mediational relationship to be examined was object resource loss' effects on the relationship between exposure and total distress (see Table 7). The first step was to perform a regression of total distress onto exposure (after partialing out the effects of the demographic variables), which failed to yield a significant result [$t (119) = 1.895$, $p > .05$]. Given that the zero order correlation between exposure and total distress was significant (.208, $p < .05$; see Table 6), the fact that the regression did not yield significant results suggested that partialing out the effects of the demographic variables in step one of the regression reduced

the relationship between exposure and total distress to non-significance (as the zero order correlation did not partial out the effects of the demographic variables).

In order to confirm that it was, in fact, taking the effects of the demographic variables into account that resulted in the lack of significant findings for this relationship, object resource loss' mediational role in the relationship between exposure and total distress was again examined without taking demographic variables into account (see Table 8). Total distress was again regressed onto exposure, this time resulting in significant findings consistent with the zero order correlation [t (119) = 2.307, $p < .05$]. Next, exposure was entered into an equation first and object resource loss second in order to examine object resource loss as a potential mediator between exposure and total distress. In this regression, exposure was no longer found to be a significant predictor of total distress [t (119) =1.141, $p > .05$]. Object resource loss, however, was shown to have a significant effect on total distress after the effects of exposure were partialed out [t (119) = 2.562 $p < .05$].

To further explore this relationship under a more conservative procedure for testing mediation, Kenny's (2008) suggestions for testing mediation were implemented (see Table 9). While the first step of regressing the outcome variable onto the predictor variable remains identical to the procedure described above, Kenny (2008) argues that step two of the analysis should involve regressing the proposed mediator onto the predictor variable. When object resource loss was regressed onto exposure, the relationship was found to be significant (t (119) = 3.621, $p < .001$). Kenny (2008) notes that the outcome variable must also be regressed onto the proposed mediator, arguing that correlating the proposed mediator with the outcome variable is insufficient to suggest mediation, in that the fact that these two variables are both caused by the predictor variable (exposure) may be the reason for their correlation and the proposed mediator may have no actual effect on the outcome variable. Therefore, as in the final step of the procedure described above, total distress was regressed onto object resource loss, while partialing out the effects of exposure.

Thus, under the more conservative mediational procedure described by Kenny (2008), a mediational effect of object resource loss on the relationship between exposure and total distress was again observed. However, such an effect was only observed in regression analyses that did not partial out the effects of the demographic variables, indicating that mediation is not present after one takes the effects of these demographic variables into account. Additionally, under the

guidelines of the Bonferroni adjustment, the relationship between exposure and total distress was rendered non-significant, while the mediational effect of object resource loss on the relationship between exposure and total resource loss teetered on significance (the *p* value for this relationship was .012). In conclusion, evidence for object resource loss' mediational effects on the relationship between exposure and total distress can only be inferred by ignoring the effects of the demographic variables and the Bonferroni adjustment.

The second potential mediational relationship to be examined was total resource loss' effects on the relationship between exposure and total distress (see Table 10). The first step was to perform a regression of total distress onto exposure (after partialing out the effects of the demographic variables), which failed to yield a significant result [t (119) = 1.895, $p > .05$]. Again, given that the zero order correlation between exposure and total distress was significant (.208, $p < .05$; see Table 6), the fact that the regression did not yield significant results suggested that partialing out the effects of the demographic variables in step one of the regression reduced the relationship between exposure and total distress to non-significance.

In order to confirm that it was, in fact, taking the effects of the demographic variables into account that resulted in the lack of significant findings for this relationship, total resource loss' mediational role in the relationship between exposure and total distress was again examined without taking demographic variables into account (see Table 11). Total distress was again regressed onto exposure, this time resulting in significant findings consistent with the zero order correlation [t (119) = 2.307, $p < .05$]. Next, exposure was entered into an equation first and total resource loss second in order to examine total resource loss as a potential mediator between exposure and total distress. In this regression, exposure was no longer found to be a significant predictor of total distress [t (119) =1.614, $p > .05$]. Total resource loss, however, was shown to have a significant effect on total distress after the effects of exposure were partialed out [t (119) = 5.101 $p < .001$].

To further explore this relationship under a more conservative procedure for testing mediation, Kenny's (2008) suggestions for testing mediation were again implemented (see Table 12). The first step of regressing the outcome variable onto the predictor variable again remained identical to the procedure described above. When total resource loss was regressed onto exposure, the relationship was found to be non-significant (t (119) = 1.879, $p > .05$). Thus, though the zero order correlation between exposure and total resource loss was significant (.171,

$p < .05$; see Table 6), exposure did not adequately explain the variance observed in total resource loss. Given the relatively weak correlation between the two variables, it is likely that the regression was non-significant due to unexplained sources of variation in total resource loss. As a result, further analyses under the Kenny (2008) method were unwarranted.

Thus, evidence for the mediational effect of total resource loss on the relationship between exposure and distress was obtained, but only when the effects of the demographic variables were not partialed out. Additionally, under the more conservative mediational procedure described by Kenny (2008), evidence for a mediational effect was not obtained. Finally, under the guidelines of the Bonferroni adjustment, the relationship between exposure and total distress was rendered non-significant, though the mediational effect of total resource loss on the relationship between exposure and total resource loss remained significant. In conclusion, evidence for total resource loss' mediational effects on the relationship between exposure and total distress can only be inferred by ignoring the effects of the demographic variables and the Bonferroni adjustment. Additionally, no evidence for mediation is found under the more conservative approach to mediation suggested by Kenny (2008).

The third potential mediational relationship to be examined was total resource loss' effects on the relationship between exposure and intrusion (see Table 13). The first step was to perform a regression of intrusion onto exposure (after partialing out the effects of the demographic variables), which yielded significant results [$t (119) = 2.186$, $p < .05$]. Next, exposure was entered into an equation first and total resource loss second in order to examine total resource loss as a potential mediator between exposure and intrusion. In this regression, exposure was no longer found to be a significant predictor of intrusion [$t (119) = 1.670$, $p > .05$]. Total resource loss, however, was shown to have a significant effect on intrusion after the effects of exposure were partialed out [$t (119) = 4.385$ $p < .001$]. The regression of intrusion onto exposure, however, was not significant once the Bonferroni correction was taken into consideration. Again, given that the zero order correlation between exposure and intrusion was significant (.240, $p < .01$; see Table 6), the fact that the regression did not yield significant results suggested that partialing out the effects of the demographic variables in step one of the regression reduced the relationship between exposure and intrusion to non-significance.

In order to confirm that it was, in fact, taking the effects of the demographic variables into account that resulted in the lack of significant findings for this relationship, total resource

loss' mediational role in the relationship between exposure and intrusion was again examined without taking demographic variables into account (see Table 14). Intrusion was again regressed onto exposure, this time resulting in significant findings consistent with the zero order correlation [t (119) = 2.688, $p < .01$]. Next, exposure was entered into an equation first and total resource loss second in order to examine total resource loss as a potential mediator between exposure and intrusion. In this regression, exposure was no longer found to be a significant predictor of intrusion [t (119) =1.973, $p > .05$]. Total resource loss, however, was shown to have a significant effect on intrusion after the effects of exposure were partialed out [t (119) = 4.758, $p < .001$].

Because further exploring the relationship under the more conservative procedure for testing mediation suggested by Kenny (2008) would involve regressing total resource loss onto exposure (which was found to be non-significant in the previous mediational analyses), the Kenny (2008) method was not employed in examining the mediational effects of total resource loss on the relationship between exposure and intrusion (in that it was already known that regressing the potential mediator onto the predictor variable would result in non-significant findings).

Thus, evidence for the mediational effect of total resource loss on the relationship between exposure and intrusion was obtained, but did not remain significant once the Bonferroni correction was taken into consideration. When this relationship was examined without partialing out the effects of the demographic variables, the results were significant under the Bonferroni correction. Finally, under the more conservative mediational procedure described by Kenny (2008), evidence for a mediational effect was not obtained. In conclusion, evidence for total resource loss' mediational effects on the relationship between exposure and intrusion can be inferred (even after partialing out the effects of demographic variables), but the relationship does not remain statistically significant under the guidelines of the Bonferroni correction.

The fourth and final potential mediational relationship to be examined was object resource loss' effects on the relationship between exposure and intrusion (see Table 15). The first step was to perform a regression of intrusion onto exposure (after partialing out the effects of the demographic variables), which yielded significant results [t (119) = 2.186, $p < .05$]. Next, exposure was entered into an equation first and object resource loss second in order to examine object resource loss as a potential mediator between exposure and intrusion. In this regression,

exposure was no longer found to be a significant predictor of intrusion [t (119) = 1.475, $p > .05$]. Object resource loss, however, was shown to have a near-significant effect on intrusion after the effects of exposure were partialed out [t (119) = 1.981 $p < .051$]. The regression of intrusion onto exposure, however, was not significant once the Bonferroni correction was taken into consideration. Again, given that the zero order correlation between exposure and intrusion was significant (.240, $p < .01$; see Table 6), the fact that the regression did not yield significant results suggested that partialing out the effects of the demographic variables in step one of the regression reduced the relationship between exposure and intrusion to non-significance. Additionally, the regression of intrusion onto object resource loss (after partialing out the effects of exposure) was not significant once the Bonferroni correction was taken into consideration.

In order to confirm that it was, in fact, taking the effects of the demographic variables into account that resulted in the lack of significant findings for this relationship, object resource loss' mediational role in the relationship between exposure and intrusion was again examined without taking demographic variables into account (see Table 16). Intrusion was again regressed onto exposure, this time resulting in significant findings consistent with the zero order correlation [t (119) = 2.688, $p < .01$]. Next, exposure was entered into an equation first and object resource loss second in order to examine object resource loss as a potential mediator between exposure and intrusion. In this regression, exposure was no longer found to be a significant predictor of intrusion [t (119) =1.748, $p > .05$]. Object resource loss, however, was shown to have a significant effect on total distress after the effects of exposure were partialed out [t (119) = 2.415, $p < .05$].

To further explore this relationship under a more conservative procedure for testing mediation, Kenny's (2008) suggestions for testing mediation were implemented (see Table 17). The first step of regressing the outcome variable onto the predictor variable remains identical to the procedure described above. When object resource loss was regressed onto exposure, the relationship was found to be significant (t (119) = 3.261, $p < .001$). Finally, as in the final step of the procedure described above, intrusion was regressed onto object resource loss, while partialing out the effects of exposure.

Thus, evidence for the mediational effect of object resource loss on the relationship between exposure and intrusion was obtained, but did not remain significant once the Bonferroni correction was taken into consideration. When this relationship was examined without partialing

out the effects of the demographic variables, the results were again significant until the Bonferroni correction was taken into consideration. Finally, under the more conservative mediational procedure described by Kenny (2008), evidence for a mediational effect was obtained, but did not remain significant under the guidelines of the Bonferroni correction (the *p* value for this relationship was .017). In conclusion, evidence for object resource loss' mediational effects on the relationship between exposure and intrusion can be inferred (even after partialing out the effects of demographic variables), but the relationship does not remain statistically significant under the guidelines of the Bonferroni correction.

Discussion

Summary of Findings

Karter (2007) reported that 412,500 (25%) of the fires occurring in the United States during 2006 were residential fires. Furthermore, 12,925 (79%) of the civilian fire related injuries and 2,620 (81%) of the fire related deaths in 2007 occurred during residential fires. Finally, a total of $6,990,000,000 (62%) of the direct property damage incurred from fires in 2006 was the result of residential fires. Given that the loss of property, health, and life are such an intimate part of experiencing residential fires, it becomes imperative to assess the exact nature of these resource loss types' impact on the relationship between residential fire exposure and the resulting PTSD symptomatology. To that end, the primary purpose of the current study was to obtain a better understanding of the ways in which the various types of resource loss affect the development and maintenance of psychological dysfunction following trauma. In particular, the current study attempted to determine the extent to which the types of resource loss specified by Hobfoll's (1998) COR theory mediated the relationship between exposure to residential fire and the resulting distress. It was felt that the current study would serve to better conceptualize resource loss as its own unique variable rather than conceptualizing it as a component of exposure, as has been done in previous work (La Greca et al., 1996; Pynoos et al., 1999). Additionally, because resource loss had not yet been examined as a mediator with regard to children, the current study aimed to obtain more specific information regarding the causal nature of resource loss in such populations.

With regard to the current study's hypotheses, three of the hypothesized mediators (condition resource loss, personal characteristics resource loss, and energy resource loss) had insufficient correlations with the predictor variable. Thus, the necessary correlational structure

was not present, suggesting that these types of resource loss did not serve as mediators between the predictor and outcome variables examined with the current study's sample. Thus, the specific hypotheses that these types of resource loss would serve as a particularly strong mediator were not supported. Concerning the hypothesized mediators that were tested, no support was found for object resource loss and total resource loss as mediators in the relationship between exposure and total distress. Some support was found for total resource loss as a mediator in the relationship between exposure and intrusion. However, as previously discussed, this relationship did not remain significant once the Bonferroni adjustment was taken into account. Likewise, some support was found for object resource loss as a mediator in the relationship between exposure and intrusion, consistent with Vernberg et al.'s (1996) work. However, this relationship also failed to remain significant once the Bonferroni adjustment was taken into account. Had these findings been significant under the guidelines of the Bonferroni correction, they would have shed additional light on Vernberg et al.'s (1996) original findings. In that study, object resource loss was found to be a significant predictor of PTSD ratings. The evidence obtained in the current study would have illustrated that, in addition to object resource loss acting as a mediator, it specifically affects the intrusion cluster of PTSD. This would imply that children who experience object resource loss in particular find such loss to be especially pervasive in their day-to-day lives following trauma. In summary, under the guidelines of the Bonferroni correction, none of the findings in the current study supported the hypotheses.

Upon examining the results of this study, one must question the contradiction between the findings of this study and the findings of previous resource loss studies. Specifically, why would other studies such as Smith and Freedy (2000) and Monnier et al. (2002) find evidence for resource loss as a mediator between exposure and psychological dysfunction, while this one did not? One possible source of explanation may lie in the exposure measures used by previous studies. The studies that present the most compelling evidence for resource loss' mediational role (Smith & Freedy, 2000; Monnier et al., 2002) used exposure variables in which resource loss items were an inherent factor. For example, Smith and Freedy's (2002) measure of exposure contained items assessing phenomena such as: displacement from home (which could be conceptualized as condition resource loss), property damage (which could be conceptualized as object resource loss) and personal injury (which could be conceptualized as energy resource loss). Likewise, the exposure measure implemented by Monnier et al. (2002) contained items

assessing phenomena such as: serious injury to oneself in the line of duty (which could be conceptualized as energy resource loss), line of death duties of fellow emergency workers, (which could be conceptualized as condition resource loss), and the death of victims that were known to the subjects (which could again be conceptualized as condition resource loss). Thus, it could be argued that some factors related to resource loss were inherent in these studies' measures of exposure. This would suggest that the exposure and resource loss variables were not completely independent, resulting in artificially inflated relationships between the predictor and the mediator.

In response to such concerns, when determining similar correlations between the exposure measure and resource loss, an attempt was made to find a measure of one's trauma exposure that was more independent of resource loss. Pynoos, Goenjian, and Steinberg (1995) discussed the importance of children's appraisal of a traumatic event in predicting resulting levels of PTSD symptomatology. Likewise, both Lazarus and Folkman (1984) and Pfefferbaum (1997) endorsed the use of individuals' emotional and cognitive appraisals of a situation's seriousness in studying stress. Pfefferbaum (1997) noted that children's appraisal of the nature of a traumatic event generally correlates with their trauma response. Using appraisal as a predictor variable rather than an exposure variable similar to the one used by Jones and Ollendick (2002) was seen as a way to avoid the problem of dependence between the predictor and potential mediator variables. Thus, it was determined that using a measure of one's appraisal of the seriousness of the fire as the predictor variable would be superior to using the historically-implemented measures of exposure found in previous studies. Though there is still the potential for appraisal to be somewhat related to resource loss in particular cases (i.e., the total loss of a subject's home would likely cause him or her to appraise the fire as quite serious), it was determined that this measure would serve to assess exposure to the fire without including specific items that were so closely related to resource loss (as had been done in studies previously discussed). In doing so, it was thought that a more independent measure of exposure was created.

However, the use of appraisal as measure of exposure was not without its shortcomings. As can be observed in Table 6, appraisal failed to show significant correlations with three types of resource loss (condition, personal characteristics, and energy). This negated the possibility of testing for the mediational effects of these three resource loss types. Additionally, the exposure

measure consisted of only one appraisal item. Using multiple appraisal items as a measure of exposure may have yielded a more comprehensive account of children's levels of exposure. As alluded to earlier, Smith and Freedy (2000) and Monnier et al. (2002) used predictor variables which contained overlap with resource loss items. Given this fact, it is not surprising that these studies obtained the necessary correlations to assess for mediation while the current study did not.

The difficulties in assessing exposure to and appraisal of trauma have previously been highlighted by Green and Kimerling (2004). They addressed the myriad of different ways in which the field assesses one's traumatic experiences, and various problems that one encounters when attempting to do so. The primary concern is the distinction between objective accounts of the event's characteristics (such as simply asking whether or not the individual ever experienced a flood) and obtaining more subjective appraisals of the seriousness of the event. Furthermore, these authors note the lack of consensus among researchers regarding the quantity and quality of the questions that are used to assess the seriousness of an event. While some studies implement a single item to assess this variable, others use a wide variety of items. Such disparity in the literature points to the numerous disagreements that still remain concerning best practices for assessing the seriousness of trauma.

The current study highlights the fact that it may be difficult to adequately examine resource loss as a mediator at this time, particularly because of the difficulty in obtaining an adequate exposure measure. As has been illustrated, it is quite difficult to obtain some measure of exposure to a particular trauma that does not contain some element of resource loss. Thus, the question of independence between the predictor variable and the proposed mediating variable of resource loss remains in question until a more pure measure of exposure is devised. However, it would appear that assessing resource loss could still provide researchers with valuable predictive information. In light of the correlations between resource loss and PTSD symptomatology (see Table 6), resource loss may be best used as a predictor of general distress and PTSD symptomatology at this time.

Limitations

There are a number of limitations associated with the current study that merit discussion. One of the primary limitations associated with the study is the aforementioned difficulty measuring exposure to residential fire. As discussed previously, the exposure measure employed

by Jones and Ollendick (2002) could not be used in the context of the current study, due to the fact that it integrated resource loss as one of its components. This would make such a measure of exposure inappropriate as a predictor variable. To help ensure independence between the predictor variable and the proposed mediators, children's appraisal of the seriousness of the fire was explored as the measure of exposure. This avoided the more obvious conceptual overlap between the predictor variable and the proposed mediator variable. However, it is still possible that appraisal is not completely independent of resource loss. For example, a child would likely make a greater appraisal rating for a large fire. A large fire, in turn, would be more likely to result in greater amounts of object resource loss. Thus, in such a case, levels of appraisal would not be completely conceptually independent of levels of resource loss. Such an example illustrates the difficulty in conceptually distinguishing exposure from resource loss. However, it also speaks to the necessary dependence that resource loss has on exposure. Conceptually, ratings of resource loss will always depend on the seriousness of the trauma to some extent. Therefore, to examine resource loss as a mediator, one must either determine a completely different predictor variable that is devoid of any conceptual connection to resource loss or accept a marginal lack of independence between exposure and resource loss.

An additional limitation of the current study is that only two of the proposed resource loss clusters were fully investigated (object resource loss and total resource loss). Because adequate correlations were not obtained between the exposure variable and the three remaining types of resource loss (condition resource loss, personal characteristics resource loss, and energy resource loss), it appeared as though these types of resource loss exerted no mediational effect with this sample. One possible explanation for this lack of correlation may be that the Resource Loss Scale (RLSC; Jones & Ollendick, 1994) used in the current study did not have adequate internal validity where these three types of resource loss were concerned. As previously reported, none of the untested types of resource loss had adequate internal validity, as specified by Nunnaly (1978; though personal characteristics resource loss and energy resource loss did approach the cutoff of .070). The possibility of inadequate internal validity for these three resource loss types suggests that the RLSC may not be a completely suitable instrument for which to measure these resource loss types. The use of a more internally valid measure may have allowed for testing of these three remaining types of resource loss, in that they did still have adequate correlations with intrusion and total distress. Had the RLSC produced more internally

consistent measures of these three clusters, they may have correlated with exposure, allowing them to be fully tested with intrusion and total distress as outcome variables (as was done with object resource loss and total resource loss).

A third limitation of the current study concerns the examination of depression. In addition to PTSD, depression has been shown to be one of the major outcomes of stressful life events (Holahan et al., 1999; Monnier et al., 2002). The current study did not examine the extent to which resource loss mediates the relationship between exposure to residential fire and children's resulting levels of depression, though measures of depression were available in the dataset on which the current study was based. This relationship should be explored in future efforts.

An additional limitation of the current study concerns the use of the CRTES (Jones, 1994) to measure distress. Though the version of the CRTES with which the current study's dataset was obtained showed high internal consistency, it was based on the DSM-III-TR (American Psychiatric Association, 1987) and did not include a measure of the hyperarousal cluster of PTSD. Additionally, the CRTES it is only a self-report measure and not a clinical interview. It was not developed as closely within the framework of the DSM as were other such measures of symptomatology, such as the Structured Clinical Interview for DSM-IV-TR Axis I Disorders, Research Version (SCID-I/NP; First, Spitzer, Gibbon, & Williams, 2002) or the Anxiety Disorder Interview Schedule IV (ADIS-IV; Brown, Di Nardo, & Barlow, 1994). Thus, using clinical interviews such as the SCID-I/NP or the ADIS-IV with the children in the current study's sample may have resulted in a slightly more accurate assessment of their levels of PTSD symptomatology. Additionally, the specific lack of any data concerning the hyperarousal cluster disallows the opportunity to completely incorporate the findings of the current study into the most contemporary conceptualizations of PTSD.

One final limitation involves the lack of longitudinal data. During the original project, children were assessed at three separate time intervals (three, six, and twelve months following the fire; Jones & Ollendick, 2002). However, with regard to the variables examined in the current study, there was a substantial attrition rate among respondents from each time period. Thus, the data obtained during the later two assessment phases did not contain adequate amounts of subjects with which to examine the impact of resource loss longitudinally. This made it impossible for the current study to investigate whether or not resource loss continued to serve as

a mediator in the months following residential fire. Such analyses would have been quite informative. It is likely that, as the months following a residential fire progress, there is a change in one's resources (in that individuals tend to continue losing resources once a pattern of resource loss has begun; Hobfoll, 1998). Thus, had data from the later assessment periods been analyzed, it may have been possible to examine whether resource loss served as a mediator in the relationship between exposure and distress once one's levels of resources have changed or if the mediational effects of resource loss are significant only immediately following a residential fire.

Implications

The most intriguing implications for the current study's findings involve the further conceptualization of the role demographic variables such as gender and race on the relationship between exposure and trauma. Additionally, there are a number of implications for how clinicians can integrate a familiarity with resource loss and its effects into the successful treatment of individuals exposed to traumatic events. Each will be discussed in turn.

When interpreting the findings regarding gender and race for the current study, it must be remembered that these findings must be taken in the context of the additional work that has been done in the area of trauma. While these demographic variables were not found to be significant predictors in the current study, there is still much evidence for their effects in other areas of the trauma literature (Lonigan et al., 1991; March et al., 1997; Shannon et al., 1994; Vernberg et al., 1996). Thus, more attention must be given to these demographic variables in future trauma work, particularly in studies that examine potential mediators in the relationship between exposure and PTSD symptomatology. Because such studies provide a more informative view of the relationship between exposure and PTSD, (thereby offering more specific target areas for intervention), it is imperative that such research continues to pay heed to the influence of demographic variables such as gender and race. A benefit of the current study is that it made efforts to examine the extent to which these demographic variables affect role of resource loss as a mediator

Prior to the current study, much research has inadequately examined the role of these demographic variables. One way to overcome this issue is to make efforts to study samples that represent all points on the continua of these demographic variables so as to get a more complete understanding of their effects on the more complex theoretical relationships associated with exposure and trauma (as was done with the current study). For example, in discussing ways to

conduct research with members of minority and marginalized communities, Jones, Hadder, Carvajal, Chapman, and Alexander (2006) identified three major barriers to obtaining research participants from some of these diverse groups (particularly minority and low-SES groups) as: mistrust of research, access to research facilities, and difficulties with culture and linguistics. Members of minority groups have cited mistrust as one of their primary reasons for not participating in research (Roberson, 1994). For example, in a survey of 220 African Americans, Million-Underwood, Sanders, and Davis (1993) found that 57% of respondents were either of the opinion that scientific research was unethical in the United States, or wary of scientific research, but felt that they required more information to make a more definitive judgment. Regarding other racial groups, undocumented Latino immigrants have reported fear of deportation and a resulting natural wariness of strangers who approached them to participate in research (Marín & Marín, 1991). This trend of mistrust has also been reported in the domain of treatment. Corbie-Smith, Thomas, and St. George (2002) found that African Americans reported a greater distrust of treatment than did Caucasions using a seven-item index measure. This finding remained even when controlling for SES.

Concerning access to research, members of minority and low SES groups who may want to participate in research are often hindered by real-world concerns (i.e., transportation to the research site, childcare during research visits). In addition, members of these groups are generally unaware of the specific nature of research, (i.e., lengthy questionnaires, repeat visits to the research site, occasional lack of a direct benefit to themselves), which precludes their participation in additional research endeavors (Institutes of Medicine, 2002).

Finally, the primary difficulties associated with culture and linguistics are the lack of instruments and questionnaires that are accurately translated into English and the relatively low numbers of multilingual mental health professionals. These problems often result in misdiagnosis and poor quality of treatment when working with populations who do not speak English (Norris & Alegria, 2005).

In working toward overcoming all three of these barriers, Jones et al. (2006) have advocated building on pre-existing relationships with members of minority and low-SES groups within the community when planning and obtaining subjects for research studies. Such practices allow for better explanations of the nature of research to potential research participants, more trust between potential research participants and the researchers, and a greater understanding of

the barriers facing the successful acquisition of and interaction with minority and low-SES subjects. Additionally, Jones et al. (2006) note the importance of addressing potential research participants' real-world hindrances to participating in research. By doing so, more diverse samples of subjects can be obtained for trauma research. Such diverse samples offer opportunities to strengthen the field's understanding of how demographic variables affect the complex factors influencing the relationship between exposure and trauma.

As stated previously, the current study benefited from following many of the guidelines discussed above. Thus, though previous work does not always pay heed to the importance of obtaining samples that reflect a wide variety of cultures, the current study benefited from having approximately equal numbers of males and females (52 males and 68 females), as well as approximately equal numbers of Caucasians and African Americans (58 Caucasians and 62 African Americans). This allowed for a more comprehensive and informative explanation of these demographic factors and the roles that they play in the mediation of resource loss (as well as the development of PTSD symptomatology in general). Because gender and race had been previously identified through one-way ANOVAs to contribute to the variance observed in both resource loss and appraisal, both of these demographic variables were entered into the regression equations as blocking variables. Further examination of these variables resulted in interesting implications for the further examination of gender and race in future studies.

The one-way ANOVAs suggested that gender contributed significantly to the variance observed in exposure. Specifically, females showed significantly higher levels of exposure than did males. These results may reflect previous suggestions that girls are more likely to acknowledge and report being emotionally upset by a traumatic event (Lengua, Long, Smith & Meltzoff, 2005). However, during the regressions testing the mediational power of resource loss on the relationship between exposure and PTSD symptomatology, gender alone was never shown to significantly contribute to the variance observed in any of these relationships. However, it did appear to play some role in these relationships (in that relationships showed greater significance once the effects of demographic variables were not partialed out). Thus, gender may influence the mediational relationships to some degree, but does not serve as a significant predictor on its own. While females have been shown to exhibit more PTSD symptomatology following trauma, (Lonigan et al., 1991; Shannon et al., 1994; Vernberg et al., 1996), such a relationship was not observed in the current study which examined the relationship

between exposure and PTSD symptomatology further by considering the mediational effects of resource loss. This speaks to a need to critically analyze previous findings concerning females' increased likelihood of experiencing PTSD symptomatology following trauma. In addition, more complex analyses must be performed to obtain a more complete understanding of the extent to which gender plays a role in the relationship between trauma exposure and PTSD symptomatology. That is, attention must be given to additional variables (such as resource loss) that may serve as potential mediators in such relationships.

Similarly, the one-way ANOVAs suggested that race contributed significantly to the variance observed in object resource loss and total resource loss. Specifically, Caucasians showed significantly higher levels of object resource loss and total resource loss than did African Americans. During the regression analyses, race alone did not show any significant effects on the mediational relationships. However, it did appear to play some role in these relationships (in that relationships showed greater significance once the effects of demographic variables were not partialed out). Thus, race may influence the mediational relationships to some degree, but does not serve as a significant predictor on its own.

These results speak to the often-contradictory findings regarding the role of race in trauma outcomes. While some studies have found insignificant effects for race on PTSD symptomatology following disaster (Jones et al., 2001), other studies have suggested that members of minority races are more likely to experience PTSD symptomatology following exposure to traumatic events (Lonigan et al., 1991; March et al., 1997). A possible explanation for the current study's results that Caucasians reported significantly higher levels of resource loss was that resource loss was influenced by SES. Specifically, Caucasians may have reported higher levels of resource loss because they were of a higher SES and, therefore, had more to lose. To examine this possibility, two post-hoc analyses were conducted using the SES data that was available. Using both household income and parental levels of education as indices of SES, no significant differences were found based on SES. Thus, the Caucasian children examined in the current study did not appear to be of a significantly higher SES than the African American children. Regardless of the basic effects of race on the development and maintenance of PTSD symptomatology following trauma, the current study offers some preliminary evidence that race does not play a significant role in the mediational power of resource loss in such instances.

A final implication of the current study is the importance of an understanding of resource loss in intervention settings. As illustrated in Table 6, all four types of resource loss (as well as total resource loss) were significantly correlated with intrusion, avoidance, and total distress. Additionally, it was found that resource loss is a significant predictor of PTSD symptomatology. Specifically, evidence was found for both object resource loss and total resource loss as mediators in the relationship between exposure and intrusion (though these findings did not remain statistically significant under the Bonferroni correction). Thus, though full support was not found for a mediational effect of resource loss on the relationship between exposure and PTSD symptomatology, per se, the findings of the current study would suggest that resource loss has some relationship with PTSD symptomatology following exposure to residential fire. Therefore, resource loss remains an important variable when studying trauma and PTSD.

With regard to resource loss and treatment, one of the most important concepts discussed by Hobfoll (1998) is the "spiral of loss". Essentially, the spiral of loss concept maintains that those who experience some degree of loss are more likely to experience further loss as a result. Because resource loss adversely affects PTSD symptomatology, it can be assumed that the further loss of resources will continue to have negative affects on one's levels of PTSD symptomatology following trauma. Thus, from an intervention standpoint, it is unlikely that individuals who have experienced resource loss as a result of trauma will show significant therapeutic gains without both the safeguarding of remaining resources and the replacement of lost resources. Therefore, it should be the clinician's goal to assist individuals in recognizing and maintaining the resources that they still have following trauma, as well as to help individuals replace those resources that were lost as a result of the trauma (when feasible).

It is also important for clinicians to recognize instances where a traumatic event may result in future resource loss and to assist individuals in guarding against such loss. Pynoos et al. (1995) discuss ways in which the experience of trauma may affect later sources of resource gain. For example, children who experience a large earthquake may be temporarily delayed from returning to school. Such a delay may result in an interference with which children achieve progressive developmental competencies (which could be conceptualized as personal characteristics resource loss). Thus, in such an instance, eventual personal characteristics resource loss may result from a traumatic event suffered weeks or even months prior. Therefore, clinicians working with trauma victims (particularly children) must be astute as to potential

sources of resource loss and work with children, their parents, and community members to guard against such future loss.

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Appendix

Figures and Tables

Figure 1. The complete Conservation of Resources (COR) model (Hobfoll, 1988).

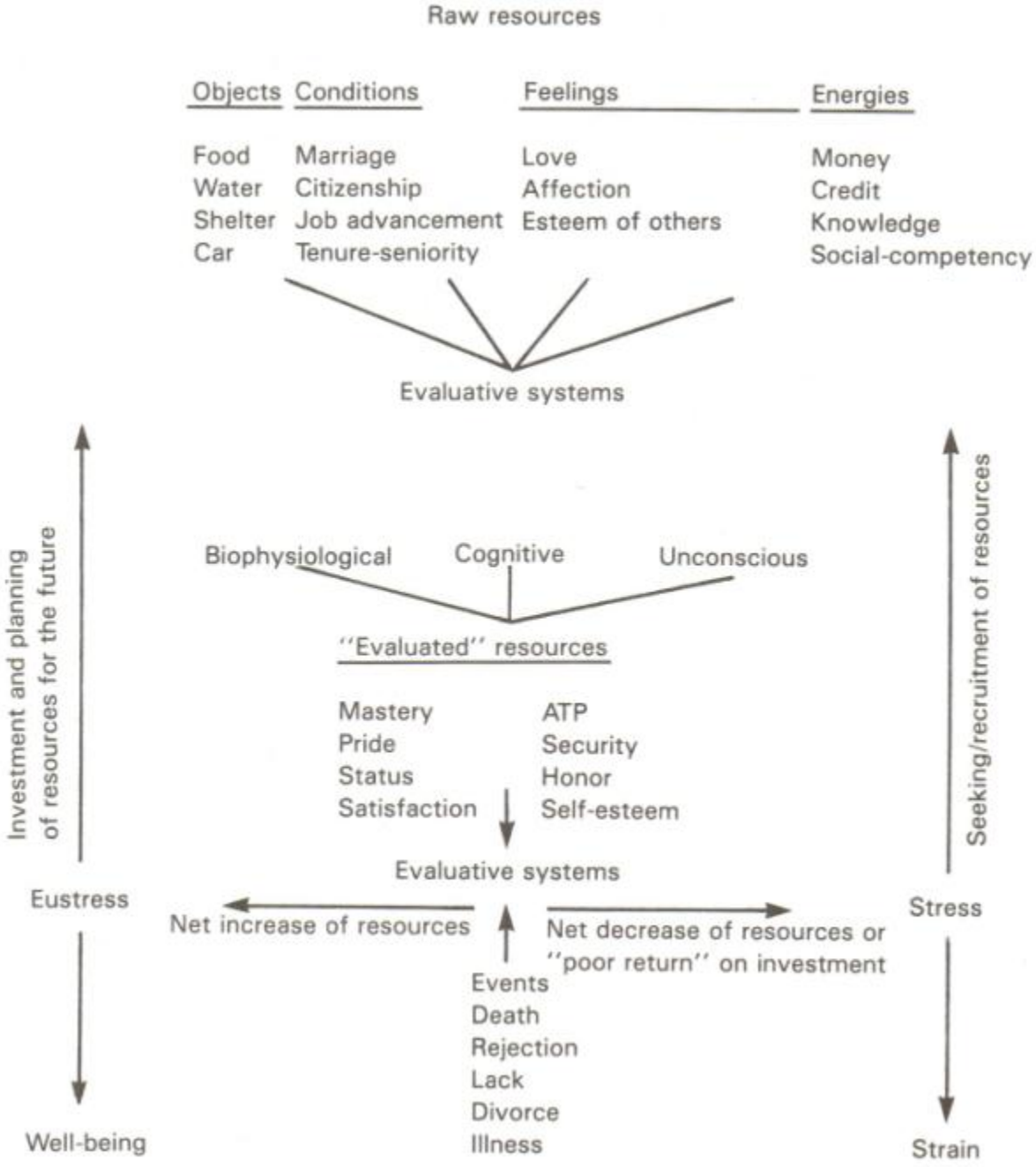

Table 1. Measures' ranges, means, and standard deviations.

	Range	Mean	SD
Resource Loss Scale for Children (RLSC): Resource Loss (Jones & Ollendick, 1994)			
Object Resource Loss N=120	0-15.0	7.62	4.74
Condition Resource Loss N=120	0-9.0	1.34	2.20
Personal Char. Resource Loss N=120	0-13.0	1.72	2.40
Energy Resource Loss N=120	0-17.0	3.90	3.90
Total Resource Loss N=120	0-45.0	14.50	8.97
Fire Questionnaire: Exposure (Jones & Ollendick, 2002)			
Appraisal N=120	1.0-5.0	2.68	.71
Children's Reaction to Traumatic Events Scale (CRTES): Distress (Jones, 1994)			
Intrusion N=120	0-33.00	9.51	8.99
Avoidance N=120	0-40.00	13.25	9.28
Total Distress N=120	0-67.00	22.76	16.35

Table 2. Measures' Cronbach's alpha levels (z-scaled).

	Cronbach's α
Resource Loss Scale for Children (RLSC): Resource Loss (Jones & Ollendick, 1994)	
Object Resource Loss	0.82
N=120	
Condition Resource Loss	0.58
N=120	
Personal Char. Resource Loss	0.67
N=120	
Energy Resource Loss	0.65
N=120	
Total Resource Loss	0.81
N=120	
Children's Reaction to Traumatic Events Scale (CRTES): Distress (Jones, 1994)	
Intrusion	0.86
N=120	
Avoidance	0.77
N=120	
Total Distress	0.87
N=120	

Table 3. Comparison of means and standard deviations of the effects of gender on exposure, resource loss, and distress.

Measure	Gender	M	SD	N	F	df	Significance (One-tailed)
Resource Loss Scale for Children (RLSC): Resource Loss (Jones & Ollendick, 1994)							
	Object Resource Loss						
	Male	6.51	5.02	52	5.18	118	.025
	Female	8.48	4.35	68			
	Condition Resource Loss						
	Male	1.54	2.40	52	.73	118	.393
	Female	1.19	2.03	68			
	Pers. Char. Resource Loss						
	Male	1.04	1.77	52	7.81	118	.006
	Female	2.24	2.67	68			
	Energy Resource Loss						
	Male	3.75	3.59	52	.07	118	.790
	Female	3.94	4.10	68			
	Total Resource Loss						
	Male	12.85	8.98	52	3.21	118	.076
	Female	15.79	8.82	68			
Fire Questionnaire: Exposure (Jones & Ollendick, 2002)							
	Male	2.48	.83	52	7.91	118	.006
	Female	2.84	.56	68			

Children's Reaction to Traumatic Events Scale (CRTES): Distress (Jones, 1994)

Intrusion						
Male	7.68	9.27	52	3.89	118	.051
Female	10.91	8.58	68			
Avoidance						
Male	12.23	9.83	52	1.11	118	.295
Female	14.03	8.84	68			
Total Distress						
Male	19.91	17.38	52	2.83	118	.095
Female	24.94	15.29	68			

Table 4. Comparison of means and standard deviations of the effects of race on exposure, resource loss, and distress.

Measure	Race	M	SD	N	F	df	Significance (One-tailed)
Resource Loss Scale for Children (RLSC): Resource Loss (Jones & Ollendick, 1994)							
Object Resource Loss							
	Caucasian	8.93	4.58	58	9.25	118	.003
	African American	6.38	4.58	62			
Condition Resource Loss							
	Caucasian	1.66	2.67	58	2.31	118	.131
	African American	1.05	1.60	62			
Pers. Char. Resource Loss							
	Caucasian	2.29	2.85	58	6.85	118	.010
	African American	1.18	1.71	62			
Energy Resource Loss							
	Caucasian	4.67	3.87	58	5.13	118	.025
	African American	3.10	3.75	62			
Total Resource Loss							
	Caucasian	17.55	9.71	58	14.55	118	.000
	African American	11.61	7.16	62			
Fire Questionnaire: Exposure (Jones & Ollendick, 2002)							
	Caucasian	2.74	.74	58	.75	118	.389
	African American	2.63	.68	62			

Children's Reaction to Traumatic Events Scale (CRTES): Distress (Jones, 1994)

Intrusion						
Caucasian	10.81	9.34	58	2.40	118	.124
African American	8.29	8.55	62			
Avoidance						
Caucasian	13.31	9.16	58	.01	118	.945
African American	13.19	9.47	62			
Total Distress						
Caucasian	24.13	16.64	58	.78	118	.379
African American	21.48	16.10	62			

Table 5. Comparison of means and standard deviations of the effects of age on exposure, resource loss, and distress.

Measure	Age Range	M	SD	N	F	df	Significance (One-tailed)
Resource Loss Scale for Children (RLSC): Resource Loss (Jones & Ollendick, 1994)							
Object Resource Loss							
	8-12	6.77	4.53	61	4.05	118	.05
	13-18	8.49	4.83	59			
Condition Resource Loss							
	8-12	1.54	2.43	61	1.02	118	.32
	13-18	1.14	1.92	59			
Pers. Char. Resource Loss							
	8-12	1.38	2.07	61	2.54	118	.11
	13-18	2.07	2.66	59			
Energy Resource Loss							
	8-12	3.31	3.47	61	2.51	118	.12
	13-18	4.42	4.21	59			
Total Resource Loss							
	8-12	12.92	8.67	61	3.88	118	.05
	13-18	16.12	9.06	59			
Fire Questionnaire: Exposure (Jones & Ollendick, 2002)							
	8-12	2.57	.76	61	3.01	118	.09
	13-18	2.80	.64	59			

Children's Reaction to Traumatic Events Scale (CRTES): Distress
(Jones, 1994)

Intrusion						
8-12	9.34	9.16	61	.04	118	.84
13-18	9.69	8.89	59			
Avoidance						
8-12	13.61	9.33	61	.18	118	.67
13-18	12.88	9.31	59			
Total Distress						
8-12	22.95	16.17	61	.02	118	.90
13-18	22.56	16.67	59			

Table 6. Reporting of correlations for one-tailed Pearson's correlation amongst variables.

	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Appraisal	1								
2. Intrusion	.240**	1							
3. Avoidance	.133	.600**	1						
4. Total Distress	.208*	.891**	.898**	1					
5. Object Resource Loss	.317**	.276**	.228**	.280**	1				
6. Condition Resource Loss	-.145	.244**	.154*	.222**	.075	1			
7. Per. Char. Resource Loss	.080	.357**	.381**	.413**	.245**	.423**	1		
8. Energy Resource Loss	.032	.278**	.276**	.310**	.129	.471**	.428**	1	
9. Total Resource Loss	.171*	.427**	.378**	.448**	.668**	.601**	.685**	.731**	1

Note: N=120
* indicates correlation significant at the .05 level (1-tailed).
** indicates correlation significant at the .01 level (1-tailed).

Table 7. Analysis of object resource loss as a mediator of the relationship between exposure and total distress.

Steps	Predictors	ΔR^2	*p*	Adj. R^2	β	*p*
Step 1	Gender	.028	.185	.012	-.148	.108
	Race				-.070	.442
Step 2	Demographics	.029	.061	.033	.177	.061
	Exposure to Total Distress					

Note: Third step not performed due to non-significant findings at step 2

Table 8. Analysis of object resource loss as a mediator of the relationship between exposure and total distress without partialing out the effects of demographics.

Steps	Predictors	ΔR^2	*p*	Adj. R^2	β	*p*
Step 1	Exposure to Total Distress	.043	.023	.035	.208	.023
Step 2	Exposure and Object Resource Loss to Total Distress	.094	.003	.079	.131 .239	.161 .012

Table 9. Analysis of object resource loss as a mediator of the relationship between exposure and total distress without partialing out the effects of demographics – Kenny (2008) method.

Steps	Predictors	ΔR^2	*p*	Adj. R^2	β	*p*
Step 1	Exposure to Total Distress	.043	.023	.035	.208	.023
Step 2	Exposure to Object Resource Loss	.101	.000	.093	.317	.000
Step 3	Exposure and Object Resource Loss to Total Distress	.094	.003	.079	.131 .239	.161 .012

Table 10. Analysis of total resource loss as a mediator of the relationship between exposure and total distress.

Steps	Predictors	ΔR^2	*p*	Adj. R^2	β	*p*
Step 1	Gender	.028	.185	.012	-.148	.108
	Race				-.070	.442
Step 2	Demographics	.029	.061	.033	.177	.061
	Exposure to Total Distress					

Note: Third step not performed due to non-significant findings at step 2

Table 11. Analysis of total resource loss as a mediator of the relationship between exposure and total distress without partialing out the effects of demographics.

Steps	Predictors	ΔR^2	*p*	Adj. R^2	β	*p*
Step 1	Exposure to Total Distress	.043	.023	.035	.208	.023
Step 2	Exposure and Total Resource Loss to Total Distress	.218	.000	.205	.134 .425	.109 .000

Table 12. Analysis of total resource loss as a mediator of the relationship between exposure and total distress without partialing out the effects of demographics – Kenny (2008) method.

Steps	Predictors	ΔR^2	*p*	Adj. R^2	β	*p*
Step 1	Exposure to Total Distress	.043	.023	.035	.208	.023
Step 2	Exposure to Total Resource Loss	.029	.063	.021	.171	.063
Step 3	Exposure and Total Resource Loss to Total Distress	.218	.000	.205	.134 .425	.109 .000

Table 13. Analysis of total resource loss as a mediator of the relationship between exposure and intrusion.

Steps	Predictors	ΔR^2	*p*	Adj. R^2	β	*p*
Step 1	Gender Race	.048	.055	.032	-.169 -.129	.063 .157
Step 2	Demographics Exposure to Intrusion	.038	.031	.062	.201	.031
Step 3	Demographics Exposure And Total Resource Loss to Intrusion	.167	.000	.189	.145 .393	.098 .000

Table 14. Analysis of total resource loss as a mediator of the relationship between exposure and intrusion without partialing out the effects of demographics.

Steps	Predictors	ΔR^2	*p*	Adj. R^2	β	*p*
Step 1	Exposure to Intrusion	.058	.008	.050	.240	.008
Step 2	Exposure and Total Resource Loss to Intrusion	.209	.000	.195	.165 .399	.051 .000

Table 15. Analysis of object resource loss as a mediator of the relationship between exposure and intrusion.

Steps	Predictors	ΔR^2	*p*	Adj. R^2	β	*p*
Step 1	Gender Race	.048	.055	.032	-.169 -.129	.063 .157
Step 2	Demographics Exposure to Intrusion	.038	.031	.062	.201	.031
Step 3	Demographics Exposure And Object Resource Loss to Intrusion	.065	.018	.083	.140 .192	.143 .050

Table 16. Analysis of object resource loss as a mediator of the relationship between exposure and intrusion without partialing out the effects of demographics.

Steps	Predictors	ΔR^2	*p*	Adj. R^2	β	*p*
Step 1	Exposure to Intrusion	.058	.008	.050	.240	.008
Step 2	Exposure and Object Resource Loss to Intrusion	.100	.002	.084	.162 .224	.083 .017

Table 17. Analysis of object resource loss as a mediator of the relationship between exposure and intrusion without partialing out the effects of demographics – Kenny (2008) method.

Steps	Predictors	ΔR^2	*p*	Adj. R^2	β	*p*
Step 1	Exposure to Intrusion	.058	.008	.050	.240	.008
Step 2	Exposure to Object Resource Loss	.101	.000	.093	.317	.000
Step 3	Exposure and Object Resource Loss to Intrusion	.100	.002	.084	.162 .224	.083 .017

Appendix

Instruments

FIRE QUESTIONNAIRE – CHILD FORM

DEMOGRAPHICS

Name _____ Subject number _____

Parent's Name _____ Parent's Number _____

Date of Interview _____ Age _____

Interviewer _____ Gender _____

Location of Interview _____ Race/Ethnicity _____

Type of Dwelling _____ Primary Language _____

Age of Siblings _____

Orientation

**** Interviewer:** "Tell me about the recent fire you experienced."

Make sure that you query about everything that may have happened during the fire

(i.e., "Did anything else happen?, Was anyone else at home during the fire?", etc.)

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

1. Now I want you to take me through that experience step by step so that I can more clearly understand exactly what happened.

First, _____
_____
_____

Then, _____
_____
_____

Then, _____
_____
_____

Then, _____
_____
_____

Then, _____
_____
_____

Then, _____
_____
_____
_____
_____
_____
_____
_____
_____
_____

2. How serious did you think the fire was at first? (Circle one response)

Not at all A little Some A lot

3. After the fire was over, how serious did you think the fire was?

Not at all A little Some A lot

**** Interviewer:** If the child/adolescent was **not** at home, **skip** to **question #8**

4. What do you think caused the fire?

1. Intentional arson (i.e., someone started it on purpose)
2. Human accident (i.e., dropped cigarette, match, etc.)
3. Act of nature (i.e., lightning, etc.)
4. Other (specify)
5. Don't know

GUILT

**** Interviewer:** "Sometimes when bad things happen, such as the fire you experienced, people often feel that there are things they could have done during the fire, but didn't do and may feel guilty. I'd like to talk with you about some of these things, okay?"

5. A. Do you feel like you should have been able to prevent the fire (keep it from happening)?

____ Yes ____ No

B. **If yes:** How much do you feel like you should have been able to prevent the fire (keep it from happening)?

Not at all A little Some A lot

6. A. Do you feel responsible for the fire (i.e., like it was your fault)?

____ Yes ____ No

B. **If yes:** How much do you think it was your fault?

Not at all A little Some A lot

7. Before the fire, had you been trained in fire safety?

____ Yes ____ No

If yes: Where? With whom? What did you learn?

_____
_____
_____
_____
_____
_____
_____
_____
_____

8. A. Were there things you felt you should have known but didn't know about how to stop the fire?

____ Yes ____ No

B. **If yes:** How much guilt to you feel about this?

Not at all A little Some A lot

9. A. Were there things you should have done to stop the fire but didn't do?

____ Yes ____ No

B. **If yes:** How much guilt to you feel about this?

Not at all A little Some A lot

STRESSFUL LIFE EVENTS

10. Have you ever experienced (been in) any other thing like a fire? Yes No

Please check all that apply	Year	Injury	Damage to Home
____ Earthquake			
____ Other Fire			
____ Flood			
____ Mudslide			
____ Severe Storm			
____ Other			

**** Interviewer:** Briefly describe these things and tell me how you felt during and after them:

_____
_____
_____
_____
_____
_____
_____
_____

GOOD THINGS

Interviewer: "We have talked about some of the bad things caused by the fire. However, sometimes good things happen because of a fire and I would like to know if any good things happened to you because of the fire, okay?"

11. Did you make new friends because of the fire? Yes No

If yes: How many new friends did you make because of the fire?

None	A few	Some	A lot
(0)	(1-2)	(3-5)	(more than 5)

12. Did you get new neighbors because of the fire?

____ Yes ____ No

13. How many new things did you get because of the fire?

None A few Some A lot

If a few or more: What sort of things did you get? _____
_____
_____
_____

14. a. Were there any other good things that happened because of the fire?

____ Yes ____ No

b. **If yes:** Please tell me about them _____
_____
_____
_____
_____
_____
_____
_____

RESOURCE LOSS SCALE

**** Interviewer:** "After a disaster (i.e., fire) some people lose things that make life easier and/or more enjoyable. I'd like to know about you and things you lost because of the fire, okay?

Then ask: "Due to the fire have you experienced any loss of … (READ ITEM)?"

If yes: "Did you experience a little, some, or a lot of loss of ….. (READ ITEM)?"

			A LITTLE	**SOME**	**A LOT**	
1. Your furniture	No	Yes	1	2	3	N/A
2. Your fun things (i.e. toys, games, stereos, computer, bikes, etc.)	No	Yes	1	2	3	N/A
3. Your personal things (i.e., diary, letters, pictures, etc.)	No	Yes	1	2	3	N/A
4. Your clothing	No	Yes	1	2	3	N/A
5. Your pet	No	Yes	1	2	3	N/A
6. Something else important to you						
a. _____	No	Yes	1	2	3	N/A
b. _____	No	Yes	1	2	3	N/A
c. _____	No	Yes	1	2	3	N/A
d. _____	No	Yes	1	2	3	N/A
7. Time for enough sleep	No	Yes	1	2	3	N/A
8. "Free time"	No	Yes	1	2	3	N/A
9. Time at school	No	Yes	1	2	3	N/A
10. Feeling that you are "accomplishing your goals" (i.e. getting things done)	No	Yes	1	2	3	N/A

				A LITTLE	SOME	A LOT	
11. A good relationship with your parents (i.e. getting along with your parents)	No	Yes	1	2	3	N/A
12. Time to spend with your loved ones like your family	No	Yes	1	2	3	N/A
13. Time to do your normal everyday activities	No	Yes	1	2	3	N/A
14. Your sense of humor (i.e. feeling happy, laughing, and joking	No	Yes	1	2	3	N/A
15. Feeling that your life is peaceful and calm	No	Yes	1	2	3	N/A
16. Closeness with your family	No	Yes	1	2	3	N/A
17. Support from your teacher (i.e. feeling that your teacher understands you)	No	Yes	1	2	3	N/A
18. Motivation (i.e. wanting to get things done)	No	Yes	1	2	3	N/A
19. Feeling that your life is important (i.e. your life has a purpose)	No	Yes	1	2	3	N/A
20. Having a best friend	No	Yes	1	2	3	N/A
21. Time to finish your homework	No	Yes	1	2	3	N/A
22. Time to “hangout” (play time) with your friends	No	Yes	1	2	3	N/A

CRTES

Recently you experienced a residential fire. Below is a list of comments made by people after stressful life events like a fire. Please check each item, indicating how often these comments were true for you DURING THE PAST SEVEN DAYS. If they did not occur at all during that time, please mark the "not at all" column.

	Not at All	Rarely	Sometimes	Often
I thought about it when I didn't mean to.				
I stopped letting myself get upset when I thought about it or was reminded of it.				
I tried not to remember.				
I had trouble falling asleep or staying asleep because pictures or thoughts about it came into my mind.				
I had strong feelings about it.				
I had dreams about it.				
I stayed away from things that reminded me of it.				
I felt that it did not happen or that it was make-believe.				
I tried not to talk about it.				
I kept seeing it over and over in my mind.				
Other things kept making me think about it.				
I had a lot of feelings about it, but I didn't pay attention to them.				
I tried not to think about it.				
Any reminder brought back feelings about it.				
I don't have feelings about it anymore.				