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Responding to the Needs of Children and Families After a Disaster: Linkages Between Unmet Needs and Caregiver Functioning

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Abstract

Disasters may negatively influence caregivers' ability to respond to the needs of their families. In this context, service organizations' response to families' needs may affect caregivers' symptoms and parenting. Interviews were conducted with caregivers affected by Hurricane Katrina approximately 12-months (T1; $N = 68$) and 2 years post-hurricane (T2; $N = 52$). Caregivers reported high levels of service needs and unmet needs for themselves and their child(ren) and family at both time points. Regression analyses indicated that after accounting for hurricane exposure: (a) child unmet service needs significantly contributed to T1 caregiver distress; (b) caregiver service needs and child unmet needs were associated with higher levels of posttraumatic stress symptoms (PTSS); and (c) caregiver unmet needs related to greater strain at T1. At T2, after accounting for T1 scores, service need variables did not contribute to distress or PTSS. Caregiver strain at T1 and T1 child service needs were associated with greater T2 strain. These findings highlight the importance of extending the availability of services beyond the initial post-disaster recovery period to better meet the needs of caregivers and families.

Keywords

disaster; service needs; unmet needs; caregiver functioning

Hurricane Katrina contributed to substantial loss of life and extensive destruction of entire communities, as well as the displacement of many families along the U.S. Gulf Coast (see Hurricane Katrina Community Advisory Group [HKCAG], 2006; Louisiana Recovery Authority, 2007; Select Bipartisan Committee to Investigate the Preparation for and Response to Hurricane Katrina [Select Bipartisan Committee], 2006; Weisler, Barbee, & Townsend, 2006). In fact, Katrina constituted the most costly, most deadly, and most damaging disaster in United States history (e.g., Select Bipartisan Committee, 2006). In addition to these significant consequences, Katrina brought to the fore long-standing issues of poverty and race (e.g., Bobo, 2006; Cutter, 2006; Dass-Brailsford, 2008; Elliott & Pais, 2006; Huddy & Feldman, 2006), including discrimination, disadvantage, and disparities in resource availability and opportunities to access support (Kilmer & Gil-Rivas, 2010a). Many affected communities had long struggled to meet the needs of their children and families (Snider, Hoffman, Littrell, Fry, & Thornburgh, 2010), and Hurricane Katrina and its aftermath further compromised their capacity to do so. Indeed, the well-documented problems in planning and response (e.g., Grunwald, 2007; Gheytanchi et al., 2007; Select

Bipartisan Committee, 2006; U.S. Senate Committee on Homeland Security and Governmental Affairs, 2006), left many feeling marginalized and disconnected, reinforcing historically-based mistrust of government and “the system” (see, e.g., Dass-Brailsford, 2008).

Over one year following the hurricane, many affected families faced financial difficulties, had difficulty meeting basic needs, and struggled to obtain needed government assistance (Dewan, 2008; Ydstie, 2006). Overall, children and families affected by Katrina faced multiple adversities in the short- and long-term aftermath (see, e.g., Gil-Rivas, Kilmer, Hypes, & Roof, 2010; Osofsky, Osofsky, Kronenberg, & Cross Hansel, 2010). Although these issues did not start with Katrina, families’ capacity for coping and response was diminished, resources (both financial and psychological) were taxed, and ongoing issues were exacerbated.

Following disasters such as Katrina, rapid needs assessments are not uncommon (Ridenour, Cummings, Sinclair, & Bixler, 2007; Shahinfar, Vishnevsky, Kilmer, & Gil-Rivas, 2010; Weisler et al., 2006); however, most are in the immediate aftermath. Moreover, they typically focus on adult functioning and needs and do not include child- or family-level needs (Rath et al., 2007; Sherrod, 2007). Furthermore, these reports typically do not examine the association between the individual needs of those assessed and their potential impact on family functioning (Shahinfar et al., 2010). In light of the important role caregivers play in promoting children’s adaptation following adversity, including disasters (Gil-Rivas et al., 2010; La Greca & Prinstein, 2002; Masten, Best, & Garnezy, 1990; Silverman & La Greca, 2002), this omission limits the utility and application of the assessment efforts.

In the aftermath of disasters, caregivers’ ability to respond appropriately to the needs of their children may be negatively affected by their own needs and symptomatology (Laor, Wolmer, & Cohen, 2001; Scheeringa & Zeanah, 2001; Smith, Perrin, Yule, & Rabe-Hesketh, 2001; Spell et al., 2008). For instance, if a caregiver is taxed by worries about putting food on the table, maintaining livable housing, or medical or other needs, it is reasonable to presume that he or she may be less nurturant and emotionally responsive. In this context, the response of service organizations – and, more broadly, communities – to the needs of families may affect caregivers’ symptoms and ability to parent their children. To investigate these issues, this study examined (a) the service needs of caregivers and children following Hurricane Katrina; (b) the extent to which these needs were met; and (c) the contribution of unmet needs to caregivers’ psychological distress, posttraumatic stress symptoms, and parenting-related strain.

The present study: Context and aims

The adversities experienced and the consequences evidenced by the children and families exposed directly to Hurricane Katrina have been well-documented (Gil-Rivas et al., 2010; HKCAG, 2006; Osofsky et al., 2010; Weems et al., 2007). The present study grows out of a larger project assessing children and caregivers post-Hurricane Katrina. In describing the sample’s experiences, Gil-Rivas et al. (2010) noted that all participating caregivers and 86.8% of their children endorsed experiencing at least one hurricane-related traumatic event, and 63.2% of children reported that Hurricane Katrina was one of the “most scary” events they had experienced. Overall, children reported experiencing considerable adversity and, one year post-hurricane Katrina, 21% of the children obtained posttraumatic stress symptom (PTSS) scores suggesting the presence of a probable Posttraumatic Stress Disorder diagnosis, and nearly all reported experiencing at least one PTSS much or most of the time during the previous month (Gil-Rivas et al., 2010).

As summarized by Gil-Rivas and colleagues (2010), nearly three quarters (73.5%) of caregivers reported that their child had experienced at least one potential trauma prior to Katrina ($M = 1.9$, $SD = 1.8$), most frequently community violence (39.7%), violent death of a loved one (33.3%), domestic violence (23.5%), or painful medical treatment (23.5%). Nearly all study children (97.1%) were directly exposed to the hurricane (i.e., they were in a building that was damaged, were injured, or were in a community that was flooded; a family member was injured or killed; or they otherwise experienced a loss). As a result of Katrina, 95.6% of families had to evacuate and 89.7% lost their homes. In the year post-disaster, families moved an average of 3.1 times ($SD = 2.1$; range 0–11).

Within the context of the substantial disaster-related adversity and transition experienced by the families in this sample, Shahinfar and colleagues (2010) described the needs and unmet needs reported one year after Katrina. The present study extends that work meaningfully by detailing needs for services and supports at two time points and, critically, examining the associations between service needs and unmet needs and caregiver functioning. Specifically, this study aimed to examine:

1. The service needs of caregivers and their children and families at approximately one year (T1) and two years (T2) post-Hurricane Katrina;
2. The extent to which these needs were met at both time points; and
3. The contribution of needs and unmet needs to caregivers' psychological distress, posttraumatic stress symptoms, and parenting-related strain.

We hypothesized that caregivers would report moderate to high levels of need for services and supports for themselves and their children, even one to two years after the hurricane. In addition, we expected that caregiver and child needs and unmet needs would relate positively to caregiver psychological distress, PTSS, and caregiver strain at T1, over and above hurricane exposure. In addition, after accounting for T1 scores, we expected that unmet child and caregiver needs would contribute significantly to caregiver distress, PTSS, and parenting-related strain at T2.

Method

Participant Recruitment and Study Design

Face-to-face interviews were conducted in Louisiana and Mississippi with caregivers of children aged 7–10 years, directly affected by Katrina. Baseline interviews (T1) were conducted with 68 caregivers approximately one year ($M = 12.6$ months, $SD = 4.1$) post-hurricane. A total of 52 caregivers completed the follow-up interview (T2) approximately two years post-Katrina ($M = 22.4$ months, $SD = 3.3$) [77% retention]. Participants were recruited via flyers distributed at elementary schools, Federal Emergency Management Agency [FEMA]-operated trailer parks, service provider agencies, and community-based organizations, and via participant referral. Potential sources of participants were informed that the study sought to understand families' experiences and needs during and after the hurricane. The flyer's content reflected these objectives. After obtaining informed consent, trained research assistants conducted the interviews at participants' homes or at locations convenient to caregivers. Participants were compensated with gift cards for their participation and that of their child. The study was approved by the University of North Carolina at Charlotte and the Louisiana State University Institutional Review Boards.

Participants

Caregivers were predominantly female (88.2%) and, on average, they were 38.1 years old ($SD = 9.5$) at baseline; 80.9% of them were the biological parent. Seventy-eight percent

(77.9%) were African-American, 14.7% were White, and 7.3% reflected other backgrounds. Over half of (63.2%) caregivers had a GED/high school diploma or less. Just over one-third (36.7%) of the caregivers were married or living as married, 31.0% were divorced, separated or widowed, and 32.3% were single. Roughly two-thirds (67.6%) of caregivers were unemployed, and 57.4% reported an annual household income of less than \$9,999; an additional 16.7% had an income of less than \$20,000. At T1, 38.2% of participants were living in FEMA trailers, 16.2% in their own homes/apartments, 36.8% in rental properties, 5.9% with relatives, and 3.0% had other arrangements.

Measures

Caregivers completed the following measures at both time points, unless otherwise noted:

Caregiver hurricane exposure—At T1, caregivers completed a 12-item checklist adapted from previous disaster research (Silver, Holman, McIntosh, Poulin, & Gil-Rivas, 2002) assessing the number of hurricane-related events they experienced. A summary score of events experienced was computed.

Caregiver posttraumatic stress symptoms—Caregivers completed the 17-item PTSD Checklist-Civilian (PCL; Weathers, Litz, Herman, Huska, & Keane, 1993), rating how distressed or bothered they were by symptoms related to the hurricane during the prior 7 days. Participants reported their re-experiencing, avoidance, and arousal symptoms using a scale ranging from 1 (*not at all*) to 5 (*extremely*). A mean score was computed ($\alpha = .93$).

Psychological Distress—The Hopkins Symptom Checklist-25 (HSCL; Derogatis, Lipman, Rickels, Uhlenluth, & Covi, 1974) assessed the frequency of symptoms of depression, anxiety, and somatization during the past week, using a scale ranging from 0 (*not at all*) to 3 (*extremely*). A mean score was computed ($\alpha = .96$).

Caregiver Parenting-Related Strain—This 13-item checklist, used by Luescher et al. (1999) and Kilmer, Cook, Taylor, Kane, and Clark (2008), reflected multiple caregiving-related stressors and burdens (e.g., physical health, social activities, emotional symptoms). Caregivers endorsed yes or no for each item (e.g., child behavior is upsetting, caring for child is a burden) and a total score was summed.

Services Needed and Received—On this checklist, caregivers reported if they had needed and received 15 services (e.g., counseling, housing, employment assistance) at T1 (since hurricane) and T2 (past 6 months). They also responded to parallel items regarding 7 child needs (e.g., counseling, special education, medical care).

Plan of Analysis

In addition to descriptive statistics and correlation analyses, separate hierarchical regression analyses examined the contribution of service needs to caregivers' psychological distress, trauma-related symptoms (PTSS), and caregiver strain. In models predicting T1 outcomes, hurricane exposure was entered in Step 1 and caregiver service needs, caregiver unmet needs, and child needs in Step 2. In analyses predicting outcomes at T2, baseline symptom levels were entered in Step 1 and T1 service needs and unmet needs in Step 2.

Results

Descriptive Findings for Key Study Variables

At T1, caregivers reported that, on average, they were exposed to 9.1 ($SD = 2.9$) hurricane-related events, a substantial level of adversity. At T1, caregivers also reported mild

symptoms of distress ($M = 1.1$, $SD = 0.8$; range 0–3), mild PTSS ($M = 2.6$, $SD = 1.1$; range 0–5), and moderate levels of caregiver strain ($M = 6.1$, $SD = 3.7$; range 0–13). At T2, caregivers reported low levels of psychological distress ($M = 0.8$, $SD = 0.7$), mild PTSS ($M = 2.3$, $SD = 1.1$), and mild levels of caregiver strain ($M = 4.1$, $SD = 3.6$).

Time 1 Service Needs

At T1, 98.5% of caregivers endorsed at least one service need ($M = 7.1$; $SD = 2.8$) and reported an average of 3.5 unmet needs ($SD = 2.7$); 86.6% of those with a service need reported at least one unmet need. Housing and financial assistance were the most common needs reported by caregivers; almost half of those with needs in these domains indicated that their needs had not been met (see Table 1). At T1, 86.8% of caregivers reported at least one child service need. Their children, on average, needed 2.4 ($SD = 1.5$) services and had 1.0 ($SD = 1.2$) unmet needs; 50.8% of those endorsing a child service need reported an unmet need. For children, school tutoring, counseling, and medical care were the most frequently caregiver-reported needs (see Table 1).

Time 2 Service Needs

Nearly 2 years following Katrina, 98.5% reported needing at least one service ($M = 5.5$; $SD = 2.6$) since the T1 interview. They reported an average of 1.9 unmet needs ($SD = 2.1$); 59.7% of those with service needs reported an unmet need. Of those reporting service needs at T1, 40% reported they had not received at least one of those services over the previous six months (T2). Housing and financial assistance remained the most common needs reported by caregivers, and for many these needs had not been met (see Table 1). At T2, 79.8% of caregivers reported at least one child service need. On average, caregivers reported that their children needed 2.0 ($SD = 1.6$) services and that they had 0.9 ($SD = 1.0$) unmet needs; 56.1% of those endorsing child service needs reported an unmet need.

Associations Among Key Variables

Table 2 displays correlations among variables of interest at T1. Hurricane exposure related positively to caregiver distress, PTSS, and strain. As expected, caregiver service needs at T1 related to all three indicators of caregiver functioning, as did caregiver unmet needs. Child service needs were significantly associated with caregiver distress and PTSS, but not caregiver strain; unmet child service needs at T1 related positively to all three indicators.

Table 3 shows correlations among the service need variables at both time points and T2 caregiver functioning. As expected, caregiver service needs and unmet needs from both T1 and T2 were significantly associated with all three indicators of functioning. Among the child service variables, child service needs at both time points were associated with T2 caregiver distress and PTSS but not with strain. Child unmet needs from T1 were related to all three indicators of caregiver functioning, though, contrary to expectations, this variable at T2 did not relate significantly to any of the caregiver functioning scores.

Contribution of Service Needs to Caregiver Functioning

Because the study's objectives centered on the potential influence of needs and unmet service needs on functioning, regression analyses focused on the contribution of T1 service variables to caregiver functioning at both time points. Hierarchical regression analyses revealed that, although hurricane exposure was positively associated with caregiver distress at T1, the relationship was no longer significant after the service need variables were included in the final model (see Table 4). In fact, only child unmet service needs at T1 contributed significantly to distress. Similarly, caregiver service needs at T1 and child unmet service needs at T1 were associated with higher levels of PTSS at T1, over and above

hurricane exposure (see Table 5). In analyses predicting caregiver strain, although child unmet needs approached significance ($p = .06$), they were not uniquely associated with strain scores in the final model; only caregiver service needs were significantly associated with caregiver strain (see Table 6).

Unexpectedly, after accounting for T1 scores, T1 caregiver service needs, caregiver unmet needs, child needs and unmet needs did not make a unique contribution to predicting the variability in caregiver distress or PTSS at T2. In the regression predicting caregiver strain at T2 ($N = 45$), T1 strain ($\beta = .45, p < .01$) and T1 child service needs ($\beta = .31, p < .05$) made a unique contribution; this model accounted for 35% of the variance ($p < .001$) in strain scores.

Discussion

This study sought to examine caregiver and child needs for services and supports, as well as the extent to which those remained unmet, approximately one and two years following Hurricane Katrina. It extended the work of Shahinfar et al. (2010), by going beyond their description of needs and unmet needs at T1. In addition, it aimed to assess the degree to which those needs were associated with caregiver functioning. Participant children and their families, affected by Katrina and its aftermath, were exposed to extreme levels of hurricane-related adversity (Gil-Rivas et al., 2010). Indeed, many of the experiences reported reflect risks associated with higher levels of symptomatology post-disaster – for example, major losses, such as the death of a family member; extensive damage and devastation (i.e., to home, school, neighborhood, and community); exposure to crime, violence, and death; the large-scale evacuation and displacement; and the disruption (and loss) of neighborhoods, friendships, and links to natural systems of support (e.g., Dewan, 2006; HKCAG; 2006; Lonigan, Shannon, Taylor, Finch, & Sallee, 1994; Norris et al., 2002). As such, it is not unexpected that many of those interviewed would report needs for services and supports growing out these adverse experiences, including accessing needed health or mental health care, housing issues, and other challenges. In fact, the study's descriptive results underscore the difficulties involved in accessing services, as many families struggled with basic needs, a phenomenon noted in other reports (e.g., Dewan, 2008).

Consistent with the results of large-scale assessments of caregivers conducted roughly 5–7 months following Katrina (Abramson & Garfield, 2006; HKCAG, 2006), financial problems and housing concerns led the list of needed services for caregivers in this sample one year following the disaster. Of particular salience, a significant proportion of caregivers continued to report medical, housing, and financial needs nearly two years after the hurricane. Overall, in accord with other assessments of the post-Katrina landscape (e.g., Abramson & Garfield, 2006; Ridenour et al., 2007; Shahinfar et al., 2010; Weisler et al., 2006), gaps were apparent in most need areas (e.g., financial, housing, mental health, school-based services). In the present sample, counseling, tutoring, and health needs were the child service needs most commonly reported by caregivers.

Although the emerging picture in the broader literature has been mixed regarding medical service and prescription drug needs (see, e.g., Abramson & Garfield, 2006), these fairly common needs were often met, at least adequately, a conclusion drawn by other recent studies (Ridenour et al., 2007; Shahinfar et al., 2010). However, the notable rates of unmet mental health needs are significant, with clear implications for families and communities.

Indeed, these results underscore that communities must be prepared for ongoing need following a disaster the magnitude of Katrina. Issues of housing and other basic elements of day-to-day life have drawn considerable attention in the news media (Dewan, 2008), but the

shortcomings in access to, and continuity of, care in mental health is also a prime need (see Abramson & Garfield, 2006; Shahinfar et al., 2010). In detailing the mental health consequences of Katrina and its aftermath (e.g., Abramson & Garfield, 2006; HKCAG, 2006), researchers have highlighted the need for infrastructure to meet the diverse mental health needs of those affected, as well as the current inadequacy of the present system's accessibility and reach (e.g., Madrid & Grant, 2008). The needs appear pronounced – one report estimated that 500,000 people in the New Orleans area would require mental health care in the years following the storm as opposed to the 40,000 who accessed those services prior to Katrina (Weisler et al., 2006). Other investigations found that many of those with mental health concerns were receiving no, minimal, or inadequate care (e.g., Abramson & Garfield, 2006; Wang et al., 2007; 2008), and one study found that less than half of those with serious disorder were receiving needed treatment (Wang et al., 2007).

This study's results regarding the association between needs and caregiver functioning place additional weight on the necessity for more effective response. Put simply, caregiver and child service needs and/or unmet needs were associated with greater levels of self-reported caregiver distress, posttraumatic stress symptoms, and parenting-related strain, even after accounting for exposure to the hurricane. The specific picture varied somewhat across the three indicators of caregiver functioning, and it may be that, for example, those with higher levels of distress or PTSS have more pronounced needs. Nevertheless, these results suggest that importance of considering factors that go beyond hurricane exposure and the specific adversities experienced during the event. To fully address the needs of caregivers and their families, communities must account for the larger context these families experience in not only the immediate aftermath, but the longer term (Kilmer & Gil-Rivas, 2010a; 2010b). Indeed, the critical "take-home" point is that, even one and two years post-disaster, needs for services and supports, unmet needs, and caregiver functioning appear linked. They may function as "correlated constraints", related factors that, in this case, could interact and support problematic trajectories for caregivers and, critically, their children (see Farmer & Farmer, 2001).

More specifically, they may have major implications for parents' psychological resources, post-disaster responsiveness, and parenting practices and, in turn, the functioning of the family system as well as child adjustment following disaster. A substantial body of work indicates that caregiver response and functioning in the face of stress or trauma, including disaster, can influence strongly the child's reactions, appraisals, behaviors, and adaptation (e.g., Laor et al., 2001; Masten & Coatsworth, 1998; Masten et al., 1990; Smith et al., 2001). If distressed or struggling with their own psychological concerns, caregivers may not be able to provide their typical quality of care, nurturance, guidance, and support, factors that can influence their children's responses, coping behaviors, and adjustment (see, e.g., Gil-Rivas, Holman, & Silver, 2004; Masten et al., 1990; Pynoos, Steinberg, & Wraith, 1995; Silverman & La Greca, 2002; Spell et al., 2008). Thus, agencies and communities need to identify strategies to aid caregivers and families in accessing housing, transportation, and employment opportunities, as well as mental health and school assistance, as they work to re-establish familial routines, sustain efficacy, and nurture and respond to the needs of their children (see, e.g., Shahinfar et al., 2010).

The present findings clearly underscore the need to consider alternatives beyond circumscribed mental health intervention and/or acute post-disaster services. Those in positions of community leadership need to identify means of establishing a more comprehensive disaster response system that accounts for families' needs in the longer term. Following Katrina, many of these needs were admirably addressed via entities that fell outside of governmental response agencies (i.e., FEMA) and the traditional formalized service sector, including a variety of faith-based organizations, nonprofits, and other

“informal” supports and volunteer efforts (see, e.g., Phillips & Jenkins, 2010). Such informal entities can play an integral role for communities as they plan for and work to respond to future disasters. For instance, communities can seek to engage local stakeholders, create organizational linkages, and facilitate the development of social capital, among strategies to foster community resilience as a means of building capacity and preparing for disaster (see Norris, Stevens, Pfefferbaum, Wyche, & Pfefferbaum, 2008 for a thoughtful discussion). Indeed, the present findings also implicitly highlight the need to have a well-coordinated and contextually sensitive human service system in place, one characterized by structures and practices that are responsive to family needs and a pre-disaster planning process that has involved partnerships between professionals and nonprofessionals, empowering families and increasing the likelihood that services and supports will be well-tailored to their needs (see Kilmer & Gil-Rivas, 2010b; Landau, 2007; Landau, Mittal, & Wieling, 2008).

Several limitations, some noted by others (Kilmer & Gil-Rivas, in press), warrant mention. Of greatest salience, the study’s relatively small sample and its voluntary nature limit the generalizability of these findings, as do the sample’s characteristics (i.e., evacuees, high percentage of participants living in FEMA-provided housing). In addition, the sample’s needs for and access to services and supports may have been influenced by pre-disaster factors, such as race and socioeconomic status (i.e., they were largely African American and from impoverished backgrounds), as well as prior trauma exposure (Kilmer & Gil-Rivas, in press; Osofsky, Osofsky, & Harris, 2007). Consequently, it is not possible to disaggregate prior service needs from those that are Katrina-specific in origin (Shahinfar et al., 2010).

Notwithstanding those limitations, the present study contributes to the literature by including caregiver, family, and child needs; assessing them at two time points well after the disaster; and exploring the associations between those needs (and unmet needs) and caregiver functioning. At their core, findings (a) provide evidence that caregivers and children affected by Katrina continued to experience multiple service needs one and two years after the hurricane; (b) document the association between service needs and unmet needs and caregiver functioning; and (c) highlight the importance of extending the availability of social services and supports for caregivers and children beyond the initial post-disaster recovery period to better meet the long-term needs of caregivers and families. Learning lessons from Katrina, it is necessary to acknowledge pre-disaster disparities in access to services to identify the factors and processes that may help meet the needs of families. That is, communities need to ensure that more resources and services are targeted for those most vulnerable and in need, such as families living in poverty (Osofsky et al., 2007).

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Table 1

Caregiver-reported service needs at Time 1 and Time 2

Service	Time 1 %		Time 2%	
	Needed	Unmet [†]	Needed	Unmet ^{††}
Counseling or therapy	57.4	69.2	48.1	56.0
Family counseling or therapy	48.5	72.7	32.7	58.8
Medical care	69.1	25.5	88.5	2.2
Prescription medication	66.2	22.2	78.8	9.8
Housing assistance	89.7	45.9	57.7	56.7
Financial assistance	89.7	45.9	71.2	86.5
Help completing insurance forms	17.6	75.0	13.5	71.4
Help obtaining government assistance	54.4	56.8	38.5	65.0
Employment assistance	47.1	43.8	32.7	47.1
Transportation assistance	52.9	58.3	26.9	71.4
Help getting kids in school	50.0	17.6	15.4	4.2
Childcare	29.4	70.0	28.8	40.0
Parenting education or skills training	16.2	81.8	13.5	42.9
Drug or alcohol counseling	2.9	100.0	1.9	100.0
Other services	19.1	69.2	5.8	33.3
Child counseling	50.0	50.0	32.7	58.8
Child tutoring	54.4	48.6	55.8	48.3
Child speech and language therapy	22.1	46.7	19.2	30.0
Child special education	11.8	62.5	9.6	60.0
Child medical needs	50.0	14.7	38.5	5.0
Child prescription medication needs	42.6	10.3	36.5	5.3
Child other needs	8.2	40.0	9.6	80.0

Note.

[†] At Time 1, *unmet* indicates percentage of those who reported a need but had not received that service.^{††} At Time 2, *unmet* indicates percentage of those who reported a need in the time since the T1 interview but had not received that service.

Table 2

Correlations among key time 1 (T1) variables

Variable	Caregiver	Caregiver	Caregiver
	Distress	PTSS	Strain
Hurricane exposure	.35**	.41**	.45***
Caregiver service needs at T1	.48***	.58***	.53***
Caregiver unmet service needs at T1	.48***	.49***	.44***
Child service needs at T1	.32**	.26*	.15
Child unmet service needs at T1	.53***	.50***	.40**

Note. $N = 60$; PTSS = Posttraumatic Stress Symptoms.

*
 $p < .05$.

**
 $p < .01$.

 $p < .001$.

Table 3

Correlations among key variables and Time 2 caregiver functioning

Variable	Caregiver Distress	Caregiver PTSS	Caregiver Strain
Hurricane exposure	.15	.28*	.22
Caregiver service needs			
Time 1	.32*	.39**	.29*
Time 2	.47***	.41**	.38**
Caregiver unmet service needs			
Time 1	.34*	.40**	.42**
Time 2	.49***	.33*	.38**
Child service needs			
Time 1	.29*	.30*	.24 [†]
Time 2	.31*	.39**	.23
Child unmet service needs			
Time 1	.54**	.43**	.41**
Time 2	.08	.24	.17

Note. Time 1 $N = 60$; Time 2 $N = 41$ –52; PTSS = Posttraumatic Stress Symptoms.

[†] $p < .10$.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

Table 4

Summary of regression analyses predicting distress at Time 1 (T1)

	Step 1		Step 2	
	B	β	B	β
Hurricane exposure	.09	.35**	.02	.06
Caregiver service needs at T1	--	--	.07	.24
Caregiver unmet service needs at T1	--	--	.03	.12
Child service needs at T1	--	--	.07	.12
Child unmet service needs at T1	--	--	.22	.33*

Note. N = 60; Step 1 Adj. $R^2 = .10$, $p < .01$; Step 2 Adj. $R^2 = .35$, $p < .001$

* $p < .05$.

** $p < .01$.

Table 5

Summary of regression analyses predicting posttraumatic stress symptoms at Time 1 (T1)

	Step 1		Step 2	
	B	β	B	β
Hurricane exposure	.14	.41**	.03	.10
Caregiver service needs at T1	--	--	.17	.44**
Caregiver unmet service needs at T1	--	--	-.01	-.01
Child service needs at T1	--	--	.02	.02
Child unmet service needs at T1	--	--	.30	.34*

Note. N = 60; Step 1 Adj. $R^2 = .15, p < .01$; Step 2 Adj. $R^2 = .41, p < .001$

*
 $p < .05$.

**
 $p < .01$.

Table 6

Summary of regression analyses predicting strain at Time 1 (T1)

	Step 1		Step 2	
	B	β	B	β
Hurricane exposure	.55	.45***	.25	.20
Caregiver service needs at T1	--	--	.52	.38*
Caregiver unmet service needs at T1	--	--	-.05	-.04
Child service needs at T1	--	--	-.12	-.04
Child unmet service needs at T1	--	--	.81	.26 [†]

Note. $N = 60$; Step 1 Adj. $R^2 = .19$, $p < .001$; Step 2 Adj. $R^2 = .31$, $p < .001$

[†]
 $p = .06$

*
 $p < .05$.

 $p < .001$.