Resource Loss, Resource Gain, and Mental Health Among Survivors of Hurricane Katrina

Liza Zwiebach, Jean Rhodes, and Lizabeth Roemer
University of Massachusetts at Boston

Prior research has shown that losses of personal, social, and material resources resulting from traumatic events significantly contribute to psychopathology. Gains of such resources have been shown to have protective effects on posttrauma mental health. Few previous studies of resource change, however, have controlled for pretrauma mental health. The current study, which included 402 survivors of Hurricane Katrina, made use of data collected prehurricane to examine patterns of loss and gain and subsequent mental health. The loss of social support, physical health, and personal property were shown to significantly affect posthurricane psychological distress over and above the effect of prehurricane psychological functioning and disaster exposure. Gains in resources showed no effect. Implications for practice and policy were discussed.

Hurricane Katrina was one of the worst natural disasters in U.S. history, devastating the Gulf Coast region of the United States and contributing to the death of nearly 2,000 residents. The storm and its aftermath led to elevated health and mental health difficulties among survivors (e.g., Galea et al., 2007; Weisler, Barbee, & Townsend, 2006). Low-income, Black, single mothers were at particularly high risk for suffering these adverse effects (Jones-DeWeever, 2008). Their communities sustained relatively more damage, and the stress of the disaster amplified ongoing struggles with substandard child-care and educational options, racial discrimination, and economic hardship (Spence, Lachlan, & Griffin, 2007). It is important to note, however, that declines in functioning among survivors are neither consistent nor inevitable. Previous research has identified a range of risk and protective factors that seem to accelerate or attenuate the psychological impact of natural disasters. Fewer personal, social, and material resources, for example, have also been associated with poor postdisaster psychological functioning (Brewin, Andrews, & Valentine, 2000; Norris & Kaniasty, 1996).

The conservation of resources (COR; Hobfoll, 1989) model is a useful framework for understanding variability in survivors' responses to natural disaster and for identifying who may be at the highest risk for psychological distress. Briefly, the COR model proposes that individuals naturally seek to acquire and maintain

valued resources and that the loss of one's resources is uniquely distressing. Resources are "those objects, personal characteristics, conditions, or energies that are valued by the individual or that serve as a means for attainment of. . . " goals and additional resources (Hobfoll, 1989, p. 516). Stress is defined as loss of or threat to an individual's resources. Hobfoll (1989) has argued that people are driven to obtain, preserve, and regain resources, and that attempts to recover lost resources and preserve threatened resources require investment of other resources. As such, those individuals who have fewer resources prior to stress are less equipped to invest resources in recovery. Studies with flood victims, low-income inner city women, and other vulnerable populations have found that resources such as perceptions of control, hope, and future prospects, when diminished, significantly exacerbate levels of stress and symptomatology (Hobfoll, Johnson, Ennis, & Jackson, 2003; Sattler et al., 2006; Smith & Freedy, 2000).

Research on resource loss amid trauma has made important contributions to the subfield of disaster and recovery; however, two important caveats must be mentioned. Each follows from the same methodological shortcoming intrinsic to the majority of trauma studies, namely the lack of opportunity to gather information prior to the indicated event. Indeed, in a review by Norris and colleagues (2002), only 7 of the 160 studies included predisaster data on the individuals examined. Although retrospective information provides some measure of predisaster functioning, it might contain at least some error. Likewise, cross-sectional investigations in which resource loss postdisaster is assessed concurrently with psychological functioning do not allow causal inferences to be drawn from the resource loss to distress symptoms (Hobfoll, Canetti-Nisim, & Johnson, 2006). A large proportion of the studies testing COR theory have assessed resource loss in a retrospective manner (e.g., Hobfoll & Lilly, 1993; Smith & Freedy, 2000), and it is possible that those with impaired psychological functioning

are more likely to report losses than are their healthy peers. Thus, it may be that respondents' psychological state affects resource loss and not vice versa. The second caveat is related to the issue of pretrauma mental health as a demonstrated risk factor for later psychopathology (i.e., Bromet, Sonnega, & Kessler, 1998). Of a number of studies reviewed using the COR model, only Dekel and Hobfoll (2007) attempt to explore participants' prior psychological distress as contributing to current symptoms. Their findings suggested that the experience of previous psychological distress served as a potentiating factor for psychopathology in the face of new stressors.

Although resource loss is central to COR theory, a second prediction of the model is that a gain in resources will help to offset a loss and will thus be a protective factor against the poor outcomes associated with stress (Hobfoll, 1989). Much has been written recently about the effects of positive changes in resources following a traumatic event, termed posttraumatic growth (Tedeschi & Calhoun, 1996). Application of the COR model to the concept of posttraumatic growth has produced inconsistent results. Some studies have found gains in psychosocial resources to be associated with fewer depressive symptoms in community populations (Hobfoll et al., 2003; Hobfoll & Lilly, 1993), whereas others suggest that resource gains are associated with greater depression (Hobfoll, Canetti-Nisim, et al., 2006). As with resource loss, most studies concerning resource gain have been able to control for baseline psychological functioning (an exception being Hobfoll et al., 2003).

The current study made use of data collected prehurricane to examine patterns of loss, gain, and subsequent mental health, controlling pre-Katrina psychological functioning and disaster exposure. It was hypothesized that resource loss resulting from Hurricane Katrina would be associated with more symptoms of distress post-Katrina, over and above the effects of hurricane exposure, demographics, and pre-Katrina psychological distress. It was also anticipated that gains of specific resources as a result of Hurricane Katrina would be associated with fewer symptoms of post-Katrina distress, controlling for the same attributes.

METHOD

Participants and Procedure

Participants were initially part of a study of low-income parents who had enrolled in three community colleges in the city of New Orleans in 2004–2005. The purpose of this initial study was to examine whether performance-based scholarships affected academic achievement, health, and well-being (Richburg-Hayes et al., 2009). To be eligible for the study, students also had to be between the ages of 18 and 34; be parents of at least one dependent child under 19; have a household income under 200% of the federal poverty level; and have a high school diploma or equivalent. Students were invited to participate in the study through campus marketing and outreach campaigns. At baseline, 1,019 participants provided primarily demographic information, and were then assigned either to the control condition or to the program in which they received a small stipend and access to academic counseling and tutoring services. By the time Hurricane Katrina struck, 492 participants had been enrolled in the program long enough to complete a 12-month follow-up survey, which included measures of perceived social support and psychological distress and was conducted by trained interviewers over the phone. After Hurricane Katrina, between May 2006 and March 2007, 402 of these 492 participants (81.7%) were successfully located and surveyed. The postdisaster survey, administered over the phone by trained interviewers, included the same questions as the 12-month follow-up survey, as well as a module about Hurricane experiences. In this study, the information from the baseline demographic and 12-month prehurricane surveys is denoted as Time 1, and information from the posthurricane survey as Time 2. All participants provided written consent to be part of the original study, and verbal consent to participate in the postdisaster survey.

The 402 participants in the current study were primarily African American single mothers who reported living in an area affected by Hurricane Katrina at the time that it struck. Some of the participants in this study were subsequently affected by Hurricane Rita, which occurred just 1 month after Katrina. Ninety-seven percent of the participants were women and, of the participants who reported their race and ethnicity (96.1%), 85.4% identified as African American, 10.3% as White, and 2.9% as Hispanic. The mean age was 25.4 years ($SD = 4.4$) at baseline. All were parents, and the mean number of children was 2 ($SD = 1$) prior to the disaster.

Measures

Psychological distress was assessed at Times 1 and 2 with the K6 Scale (Kessler et al., 2003), a widely used measure that was designed to discriminate between cases of serious mental illness and noncases. The K6 has demonstrated excellent predictive and convergent validity (Kessler et al., 2003). Cronbach's alpha of this scale in this study was .74 for Time 1 and .80 for Time 2.

General social support was assessed at Times 1 and 2 using eight items from the Social Provisions Scale (Cutrona & Russell, 1987), measuring perceived level of generalized social support. Sample items were "There are people I know will help me if I really need it" and "If something went wrong, no one would help me." Approximately half the items were reverse scored. The Social Provisions Scale has demonstrated excellent discriminant validity (Cutrona & Russell, 1987). Cronbach's alpha of this scale in this study was .83 for Time 1 and .82 for Time 2.

Participants' outlook and sense of identity was assessed at Times 1 and 2 using a 20-item measure designed for the Opening Doors study. Sample items included "Your goals in life are becoming clearer," "You can envision the kind of person you'd like to

become," and "You feel your life is filled with meaning, a sense of purpose." Cronbach's alpha of this scale in this study was .85 for Time 1 and .90 for Time 2.

The goal orientation subscale of the Reactive Responding-Short Form (Taylor & Seeman, 1999) was used to assess participants' orientation towards long-term goals at Times 1 and 2. The subscale, designed to capture the extent of participants' long-term planning and goal-setting, included three items ("I don't think much about my long-term goals," "I have many long-term goals that I will work to achieve," and "It is important to me to take time to plan out where I'm going in life"). The Reactive Responding Scale has demonstrated good reliability and construct validity (Taylor & Seeman, 1999). Cronbach's alpha of this scale in this study was .63 for Time 1 and .67 for Time 2.

Participants also responded to questions about their health and hurricane exposure. Participants were asked to rate the condition of their health, on a 5-point scale from *poor* to *excellent*. Participants were asked whether they were covered by any kind of health insurance, to which they answered yes or no. Participants were asked to rate the extent of property loss (excluding vehicles) due to the hurricanes. Response options were 0 = *none*, 1 = *minimal*, 2 = *moderate*, 3 = *substantial*, and 4 = *enormous*. Participants used their own frame of reference with respect to these ratings (i.e., the definition of "moderate" or "substantial" damage was left to individuals). Participants were asked whether they had lost a vehicle (e.g., car, motorcycle).

Participants were asked whether any members of their family, neighbors, or close friends died as a result of the Hurricanes Katrina and Rita or their aftermath. This was coded dichotomously, with 0 = *no* and 1 = *yes*.

Participants were asked to indicate whether they had experienced the following: (a) no fresh water to drink, (b) no food to eat, (c) felt their life was in danger, (d) lacked necessary medicine, (e) lacked necessary medical care, (f) had a family member who lacked necessary medical care, (g) lacked knowledge of safety of their children, and (h) lacked knowledge of safety of their other families members. Identical questions were asked about both Hurricane Katrina and Hurricane Rita. The scale was jointly designed by the *Washington Post*, the Kaiser Family Foundation, and the Harvard School of Public Health (Brodie, Weltzien, Altman, Blendon, & Benson, 2006). A composite score (labeled as *hurricane-related stressors*) was created with the count of affirmative responses to these items. Cronbach's alpha of the exposure scale was .84.

In this study, we included participants' stated age at baseline. Assessed at Time 1 were participants' reported monthly household income and partnered status, the latter dummy-coded with a value of 1 indicating cohabitation with a spouse or unmarried partner, and a value of 0 indicating living apart from a partner or not having a partner. Given findings that younger age (e.g., Brewin et al., 2000), lower income, and unpartnered status (e.g., Hobfoll et al., 2006) exacerbate the risk for postdisaster psychopathology, we controlled for these variables. Participants' experimental status, assigned after the baseline assessment, was coded as 0 = control, and 1 = Opening Doors.

Resource-loss variables were operationalized as follows. Change scores were calculated for the general social support, outlook and identity, and goal orientation variables by subtracting Time 1 scores from Time 2. In accordance with the procedures of Hobfoll and colleagues (2003), three groups were created for each of these variables: a resource-loss group, a resource-gain group, and a resource-stable group. Members of the loss and gain groups had sustained at least one-half standard deviation of change on that variable; assignment to the stable group was indicated by less than one-half standard deviation of change. Thus, for each type of psychosocial loss, two dichotomous variables were retained denoting, respectively, loss of that resource and gain of that resource (a participant experiencing neither loss nor gain of a particular resource would thus be dummy-coded 0 for both of the two variables). Resource loss and gain variables were then entered into separate regression models (Hobfoll et al., 2003).

To assess change in health insurance coverage from Time 1 to Time 2, two additional dummy-coded variables were created. The first was for participants who had insurance at Time 1, but did not have it at Time 2; the second was for participants who did not have insurance at Time 1, but had it at Time 2. To assess change in physical health from Time 1 to Time 2, those who self-rated their health as at least 2 points lower at Time 2 in relation to Time 1 were dummy-coded as a resource-loss group. Participants who self-rated their health as at least 2 points higher at Time 2 in relation to Time 1 were dummy-coded as a resource-gain group. Resource loss and gain variables concerning physical health were dummy-coded and entered into the separate regression models. Loss of home and loss of vehicle were used as originally coded in the dataset, and were evaluated separately.

Data Analysis

Multiple imputation using R software was used to address the moderate amount of missing data, not exceeding 40% for any included variable (see Graham, Cumsille, & Elek-Fisk, 2003, for a detailed description of this method). To improve estimates of the missing cases, all dependent and predictor variables of interest were included in the missing data model. As recommended by Graham and colleagues (2003), five data sets were imputed and retained for analyses in this study.

We conducted bivariate analyses of the relationship between psychological distress and the independent predictor variables. We then conducted a hierarchical multiple regression analysis to examine the importance of resource loss in predicting distress, over and above the effects of covariates. The predictor variables were entered in four blocks, based on the COR stress theory and previous research (e.g., Sattler et al., 2006). We first entered the level of psychological distress prior to the hurricane, then demographic variables and hurricane exposure, followed by the seven

Table 1. Prevalence of Hurricane-Related Stressors ($N = 402$)

Stressor	n	%
Any close family member or friend killed as result of Hurricane Katrina or Rita	113	28.1
During week after Hurricane Katrina. . .		
Lacked enough fresh water to drink	104	25.9
Lacked enough food to eat	139	34.6
Felt life was in danger	128	31.8
Lacked necessary medicine	128	31.8
Lacked necessary medical care	116	28.9
Family member lacked necessary medical care	130	32.3
Lacked knowledge of children's safety	94	23.4
Lacked knowledge of other family members' safety	310	77.1
During week after Hurricane Rita. . .		
Lacked enough fresh water to drink	24	6.0
Lacked enough food to eat	33	8.2
Felt life was in danger	30	7.5
Lacked necessary medicine	30	7.5
Lacked necessary medical care	40	10.0
Family member lacked necessary medical care	53	13.2
Lacked knowledge of children's safety	21	5.2
Lacked knowledge of other family members' safety	129	32.1

variables signifying loss of different resources—property, vehicle, social support, future orientation, goal orientation, physical health, and health insurance. Finally, we conducted a second hierarchical multiple regression analysis to examine the effect of resource gain on psychological distress, over and above the effects of covariates. As in the first regression model, we entered prehurricane level of psychological distress; then demographic variables; then hurricane exposure. Finally, we entered the five variables signifying gains in different resources: that of social support, future orientation, goal orientation, physical health, and health insurance. In accordance with Rubin's (1987) suggestions for analysis with multiply imputed data sets, each parameter estimate was derived by averaging the individual estimates produced by the analysis of each of the five imputed data sets.

RESULTS

Table 1 shows the prevalence of each of the hurricane-related stressors experienced by participants. The majority of participants (97.4%) reported living in an area hit by Katrina, and 46.4% reported living in an area hit by Rita. The average height of water in participants' neighborhoods was 17.44 inches, although this measure of exposure varied considerably across the sample ($SD = 26.51$ inches). Most respondents (90.5%) reported loss of personal property, excluding loss of vehicles (e.g., cars, motorcycles). Nearly half (45.8%) reported loss of a vehicle. More than one quarter

(27.8%) reported suffering the death of a close friend or family member as a result of the disaster.

On the K6 Scale, 14.0% of respondents scored 13 or higher, indicating clinically significant psychological symptoms (Kessler et al., 2003). Correlations between all variables are listed in Table 2.

The first hierarchical regression model indicated that post-Katrina distress was significantly associated with pre-Katrina distress, bereavement, storm-related stressors, loss of personal property, loss of social support, and loss of physical health. Table 3 shows results of the hierarchical regression models and displays variance contributed by each additional step. The predictor variables in total accounted for 27% of the variance in post-Katrina psychological distress. The final block of predictors, those comprising loss of resources, significantly improved the model, accounting for an additional 10% of the variance in psychological distress over and above the contribution of previously entered predictors.

The second hierarchical regression model was identical to the first except for in its final block of variables. Whereas resource-loss variables were entered into the first model, resource-gain variables were entered into the second model, following the same covariate predictors as were used in the first model. Table 3 shows that the predictor variables in total accounted for 18% of the variance in post-Katrina psychological distress. The final block of predictors, comprising gain in resources, accounted for only an additional 1% of the variance in psychological distress, and did not significantly improve the model. Gains in social support, future orientation,

Table 2. Correlations Among Variables ($N = 402$)

Variable	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.
1. K6 Time 2	—																				
2. Age	.07	—																			
3. African American	.03	.01	—																		
4. Hispanic	−.03	−.04	−.41**	—																	
5. Cohabiting	−.10*	−.05	−.18**	.14*	—																
6. Program group	−.10*	.06	.03	.00	.01	—															
7. Income Time1	−.04	.07	−.28**	.08	.25**	−.02	—														
8. K6 Time 1	.32**	−.02	−.05	−.05	−.08	−.03	−.06	—													
9. Other exposure	.24**	.15**	.11*	.03	−.04	−.05	−.13*	.12*	—												
10. Bereavement	.20**	.11*	.13*	.01	−.11	.03	−.05	.05	.30**	—											
11. Property loss	.16**	.01	.14*	−.04	−.02	.02	−.11*	.07	.15**	.09	—										
12. Vehicle loss	−.01	.05	.21**	−.10*	.02	.09	−.06	−.01	.12*	.12*	.21**	—									
13. Loss of SS	.16**	.13*	.06	.00	.02	.04	−.07	−.08	.05	.04	.02	.11*	—								
14. Loss of FO	.11*	.02	.02	.01	.00	−.04	.00	−.14*	.09	.03	−.05	−.03	.13*	—							
15. Loss of GO	.05	.12*	.00	−.07	−.07	.07	−.02	−.09	.03	.01	−.05	.02	.15**	.31**	—						
16. Loss of PH	.23**	−.02	.02	.07	−.08	−.01	−.02	.01	.08	.10*	.00	−.01	.06	.08	.08	—					
17. Loss of HI	.09	−.05	.04	.02	.03	.02	−.04	.02	.04	−.01	.07	.02	.01	.10*	.04	.07	—				
18. Gain of SS	−.03	−.09	−.11*	−.03	.00	−.05	.06	.11*	.03	−.08	−.01	−.11*	−.50**	−.08	−.09	−.04	−.01	—			
19. Gain of FO	−.04	−.07	.01	−.04	.01	−.06	−.03	.13*	−.01	.06	−.05	−.06	−.13*	−.34**	−.14*	−.01	−.03	.09	—		
20. Gain of GO	−.01	−.02	−.02	.07	.09	−.12*	.03	.04	−.03	−.07	−.02	−.06	−.11*	−.20**	−.42**	−.04	−.05	.12*	.27**	—	
21. Gain of PH	.01	−.06	−.07	.05	−.01	−.02	−.03	.06	.07	.06	.07	.01	−.06	−.02	−.05	−.08	−.05	.02	.02	.02	—
22. Gain of HI	−.02	.02	.00	.05	−.04	−.05	−.07	−.01	−.02	.01	.03	.01	−.01	−.03	−.01	.05	−.20**	−.01	.04	.05	−.05

Note. SS = Social support; FO = future orientation; GO = goal orientation; PH = physical health; HI = health insurance. * $p < .05$. ** $p < .01$.

Table 3. Regressions Predicting Post-Katrina Psychological Distress by Prior Distress, Demographics, Exposure, Resource Loss, and Resource Gain ($N = 402$)

Variable	F	df	ΔR^2
Model 1			
Step 1: Prior distress	44.72**	1, 400	.10**
Step 2: Demographics	11.12**	5, 396	.02
Step 3: Hurricane exposure	11.94**	7, 394	.05**
Step 4: Loss of resources	10.25**	14, 387	.10**
Model 2			
Step 1: Prior distress	44.72**	1, 400	.10**
Step 2: Demographics	11.12**	5, 396	.02
Step 3: Hurricane exposure	11.94**	7, 394	.05**
Step 4: Gain of resources	7.45**	12, 389	.01

** $p < .01$.

goal orientation, physical health, and health insurance were not associated with psychological distress.

To check for potential bias incurred by the imputation procedure used, all regression analyses were repeated using only complete cases ($N = 249$; Tabachnick & Fidel, 2007). In each model, the same predictors were found to be significantly associated with either outcome.

DISCUSSION

Consistent with COR and the first hypothesis, loss of personal property, social support, and physical health were each significantly associated with psychological distress at Time 2. These resource-loss variables together accounted for nearly 10% of the total variation in Time 2 distress, even after controlling for symptoms assessed pre-Katrina using the same scale, the death of a family member or friend, and subjective exposure to the disaster. These findings support COR theory, and are consistent with prior research examining the effect of resource loss on psychological functioning in the context of disaster (Hobfoll, Tracy, & Galea, 2006; Sattler et al., 2006; Smith & Freedy, 2000).

The hypothesis regarding resource gain was not supported. There were no associations between distress and the resource gain variables. As previously mentioned, the existing literature on resource gain has been mixed. The COR theory posits that although a gain in resources may have some salutary effects, these are typically secondary in magnitude to the difficulties imposed by resource loss and cannot sufficiently counterbalance larger setbacks. In the current study, the lack of findings may be related to survivors' coping styles, as suggested in prior research by Hobfoll and colleagues (Hobfoll, Tracy, & Galea, 2006). Gains in resources may be used most effectively among those who take an active, problem-focused orientation to coping with stressors. Although coping behaviors

were not directly assessed in the current sample, it could be speculated that the catastrophic scale of Hurricane Katrina created stressors that overwhelmed survivors' capacity to successfully engage in more active, problem-solving coping strategies (Folkman, Chesney, McKusick, Ironson, Johnson, & Coates, 1991).

Pre-Katrina data enabled a test of the COR model in the context of a natural disaster while controlling for predisaster mental health. Although a large number of studies have consistently shown that resource loss negatively impacts psychological functioning, none have been able to demonstrate the explanatory power of loss over and above the effects of baseline functioning. By establishing a baseline of psychological distress levels, this study extends previous findings related to COR theory. In addition, though a small number of prior studies of resource change have measured the state of resources at more than one time point (Hobfoll et al., 2003; Johnson et al., 2009), this is, to our knowledge, the only study that has done so in the context of a natural disaster. The current study captured resource change by assessing most of the resource variables both prior to and after Hurricane Katrina struck (exceptions were property and vehicle losses, which were assessed retrospectively at Time 2). Thus it addresses a second major issue from the COR literature; namely, the possibility that postdisaster functioning may bias retrospective self-reports of loss.

An additional strength of this study is the sample. Disaster studies have rarely employed a sample of young, low-income, single parents, predominantly female and Black—a marginalized group that was hit hard by Hurricane Katrina and is thus more vulnerable to implications of resource loss. Consequently, the current study addresses pressing knowledge gaps in disaster sequelae and losses.

This study has a number of limitations as well. Although addressing a critical gap in the disaster literature, the focus on low-income, Black mothers limits the generalizability of findings to other survivors. In addition, virtually all variables were assessed using self-report measures, which are susceptible to subjective biases. Likewise, the measure of disaster exposure was not exhaustive and the social support distinguished neither the providers nor the types of perceived social support (e.g., emotional, informational, tangible), limiting our ability to discern whether specific sources and forms of support led to fewer hurricane-related stressors. Moreover, the K6 Scale, does not yield information on particular psychiatric diagnoses (e.g., depression, anxiety), which may be commonly observed among disaster survivors. Thus, there may be some risk of overgeneralizing the mental health effects, as it is possible that resource loss is actually related only to very specific symptoms and not to general distress as we have measured it. A more detailed assessment of psychological symptoms could further elucidate how resource loss influences mental health. Future investigations could make use of diagnostic interviewing to lend further validity and precision to the outcome constructs.

As is the case with any nonexperimental study, we cannot be certain of the direction of associations. For example, those individuals who experienced poorer functioning may have suffered losses

of resources as a direct or indirect result of their psychological impairment. At this point, however, whatever the causal direction, it seems the conceptual and empirical link between resource loss and mental health has been well established.

Future directions for research examining COR theory in the context of traumatic stressors (or of disasters specifically) include the exploration of potential moderating influences on the relationship between resource change and psychological functioning. A possible moderator to explore is racial or ethnic origin, as earlier studies have found differences in the effects of resource loss among different racial or ethnic groups (Ennis, Hobfoll, & Schroder, 2000; Hobfoll et al., 2008). Also, because COR theory proposes that those who are already at the highest level of disadvantage stand to be most adversely impacted by further losses, subsequent work should examine specific factors that exacerbate loss-driven declines in functioning. Finally, future research should employ additional waves of postdisaster data to examine long-term trajectories in response to losses in resources. Applied longitudinal data analysis methods would permit researchers to explore whether the effects of resource loss on postdisaster psychological distress persists over time.

The current study has both clinical and policy implications. Although it may be difficult to redress material loss immediately following a disastrous event, the loss of social, physical, and emotional resources can be ameliorated. As indicated by this study, declines in physical and mental health are related, and the importance of shoring up services for survivors in these two domains is paramount. Counseling interventions are needed to restore hope and expectations for the future, as well as to minimize and manage the elevated stress resulting from natural disasters. Most of the participants were single mothers, suggesting that timely intervention could offset problems in younger generations as well. Because many survivors of disasters come into contact with service agencies after a disaster, there may be unique opportunities to offer or refer to treatment. Finally, a priority of organizations working with disaster victims should be a focus on community-wide initiatives, attempting to preserve existing neighborhoods and social networks while fostering the formation of new social connections wherever possible.

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