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Risk Factors for Adverse Outcomes in Natural and Human-Caused Disasters: A Review of the Empirical Literature

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The focus of this report is on within-sample factors that influence who is most likely to experience serious lasting psychological distress as a result of a disaster. As suggested by Freedy et al. ¹, we differentiated : predisaster, within-disaster, and postdisaster factors.

Predisaster Factors

Gender influenced postdisaster outcomes in 45 studies, as follows:

- In 42 of 45 studies (93%), women or girls were affected more adversely by disasters than were me Panel studies indicate that psychological effects were not only stronger among females, but more l; well.
- The effects occurred across a broad range of outcomes, but the strongest effects were for PTSD, fo women's rates often exceeded men's by a ratio of 2:1.
- The effects of gender were greatest within samples from traditional cultures and in the context of s exposure.

Age and Experience influenced disaster victims' outcomes in 17 samples, as follows:

- A consistent pattern was not apparent within the findings from the 3 child and adolescent samples.
- Older adults were at greater risk than other adults in only 2 of the 14 adult samples (14%). Rather viewing older adults as an at-risk group, they could be viewed as a resource for disaster stricken communities.
- Middle-aged adults were most adversely affected in every American sample where they were differ from older and younger adults. Some research suggests that middle-aged adults are most at risk b they have greater stress and burdens before the disaster strikes and they assume even greater obl afterwards.
- Cross-cultural research suggests that the effects of age may differ across countries according to th political, economic, and historical context of the disaster setting.
- At least in disasters of smaller magnitude, prior experience with the specific type of event may redi anxiety. People who have experienced previous disasters show higher levels of hazard preparednes

more likely to evacuate when authorities suggest they do.

- Professionalism and training increase the resilience of recovery workers, although past trauma per not.

Culture and Ethnicity shaped the outcomes of disaster victims in 14 studies, as follows:

- Similar methods for cross-cultural studies of similar events across 5 studies showed that the effects disaster were greater in developing countries than in the United States.
- Among youths, results for ethnicity were not consistent. In 2 of the 4 samples (50%), majority group better, and in 2 (50%), minority groups fared better.
- Among adults, results for ethnicity were quite consistent. In 100% of the 5 samples, majority group better than ethnic minority groups.
- There is little explanatory research available, but the disproportionate risk of psychological distress ethnic minorities appears to be from both (1) differential exposure to more severe aspects of a disaster (2) culturally specific attitudes and beliefs that may prevent individuals from seeking help.

Socioeconomic Status (SES), as manifest in education, income, literacy, or occupational prestige, was found to affect outcomes significantly in 11 samples of disaster victims. In 10 (91%) of these, lower SES was consistently associated with greater postdisaster distress. The effect of SES has been found to grow stronger as the severity of exposure increases.

Family Factors influenced outcomes in 19 samples, as follows:

- Married status was a risk factor for women. Husbands' symptom severity predicted wives' symptom severity more strongly than wives' symptom severity predicted husbands'. Marital stress has been found to increase after disasters.
- Being a parent also added to the stress of disaster recovery and, especially for events involving uncertainty, mothers were especially at risk for substantial distress.
- Children were highly sensitive to postdisaster distress and conflict in the family. When measured, child psychopathology was typically the best predictor of child psychopathology; parents who were healthiest, most irritable, and more supportive had healthier children.
- The effectiveness of interventions for children may be limited if the family is not considered as a whole. Providing care and support to a child's overly stressed parents might be one of the most effective ways to care for and support a child affected by disaster.

Predisaster Functioning and Personality influenced outcomes in 22 samples, as follows:

- Regardless of the data collection method, predisaster symptoms were almost always among the best predictors (if not the best predictor) of postdisaster symptoms.
- Many of these studies used lifetime diagnostic measures to assess a wide range of conditions before the disaster. Persons with predisaster psychiatric histories were disproportionately likely to develop specific PTSD and to be diagnosed with some type of postdisaster disorder.
- In prospective studies using continuous measures of current symptoms, predisaster symptoms have been found to interact with severity of exposure. Participants with higher pre-flood symptoms were more affected by a flood than were participants with lower pre-flood symptoms.
- Having a "neurotic" personality, as opposed to a stable and calm personality, increases the likelihood that an individual will experience postdisaster distress. "Hardiness" decreases the likelihood of postdisaster distress.

Within-disaster Factors

The severity of exposure at the individual or household level was an important predictor of outcomes in almost all samples.

The presence of all of the following during a disaster has been found, at least in some studies, to predict adverse outcomes among survivors:

- Bereavement during the disaster
- Injury to oneself or a family member
- Life threat
- Panic or similar emotions during the disaster
- Horror
- Separation from family (especially among young people)
- Extensive loss of property
- Relocation or displacement

As the number of these stressors increased, the likelihood of psychological impairment increased. In general, life threat and life threat were most predictive of long-term adverse consequences, especially PTSD.

Neighborhood- or community-level exposure has been assessed only occasionally, but it appears to predict modest outcomes, as follows:

Personal loss was more strongly related to increases in negative affect, but community destruction was more strongly related to decreases in positive affect. This reflects a community-wide tendency for people to feel less positive about their surroundings, less enthusiastic, less energetic, and less able to enjoy life after being exposed to trauma. Such findings are an excellent reminder that disasters impact whole communities, not just select individuals. Although no one would suggest that these community "symptoms" constitute psychopathology requiring professional intervention, disasters may impair the quality of life in a community for quite some time.

Postdisaster Factors

- Both life-event stress (discrete changes) and chronic stress were strong predictors of survivors' health. Moreover, stability versus change in psychological symptoms was largely explained by stability versus change in stress and resources.
- Some research suggests that acute stressors (the individual-level aspects of exposure outlined above) predict psychological distress by intensifying or otherwise negatively affecting chronic stressors such as marital stress, financial stress, and ecological stress.
- Attention needs to be paid to stress levels in stricken communities long after the disaster has passed.
- Because resources are such an important feature of the postdisaster environment, they are addressed in the fact sheet: Psychosocial Resources in the Aftermath of Disaster.

Summary and Conclusions

Over the past 20 years, a substantial amount of research has been published pertaining to risk factors for adverse outcomes. The research base is larger and more consistent for adults than it is for youths. Even for adults, research on many of these topics would be useful and might alter the conclusions reached thus far. At present, a review of the literature yields the following conclusions:

- An adult's risk for psychological distress will increase as the number of the following factors increases
 - Female gender
 - 40 to 60 years old
 - Little previous experience or training relevant to coping with disaster
 - Ethnic minority
 - Low socioeconomic status
 - Children present in the home
 - For women, the presence of a spouse, especially if he is significantly distressed

- Psychiatric history
- Severe exposure to the disaster, especially injury, life threat, and extreme loss
- Living in a highly disrupted or traumatized community
- Secondary stress and resource loss
- With a few modifications, primarily the deletion of age specifications and minority group status, this model holds reasonably well for children and adolescents.
- Families are extremely important systems and it is most important that postdisaster treatment and intervention efforts be aimed at the family unit.
- Outreach efforts for intensive services should focus on areas of the community where at-risk indivic families are most likely to live. Treatments and interventions known to be effective for them should implemented. It is important to pay attention to issues of diversity. Less intensive services, such as groups and psycho-educational programs, may be adequate for groups at lower risk.
- It is important to provide support to the supporters in families, especially wives and mothers.
- Communities might want to encourage groups at very low risk, such as older adults and childless r assume a greater share of the burden for the community's recovery by volunteering and participati paraprofessional activities.

References

1. Freedy, J. R., Resnick, H. S., & Kilpatrick, D.G. (1992). Conceptual framework for evaluating disaster ir Implications for clinical intervention. In L.S. Austin (Ed.), *Responding to disaster: A guide for mental heal professionals* (pp. 3-23). Washington, DC: American Psychiatric Press.

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