

I Disaster Mental Health Research: Exposure, Impact, and Response

YUVAL NERIA, SANDRO GALEA, AND FRAN H. NORRIS

1.1. INTRODUCTION

Disasters occur frequently, sometimes in multiple locations at the same time, and although they vary in terms of type, impact, and their consequences, they are often life changing for large numbers of people. Although disaster forecasting has improved in recent decades, many disasters remain unforeseen, and even more disasters continue to exceed the response capacities of the communities that they affect.

A number of large-scale human-made and natural disasters during the past decade have resulted in considerable popular and academic attention being paid to population effects of disasters, particularly in terms of mental health effects. Among these, the Marmara Earthquake in August 1999; the September 11, 2001, terrorist attacks in New York City and Washington, DC; the March 11, 2004, train bombings in Madrid; the London terrorist attacks of July 7, 2005; and Hurricane Katrina in August 2005 all have been studied by several teams of scientists and clinicians and have resulted in a rapidly growing body of knowledge about the mental health consequences of such events.

Building on the work presented in recent volumes in the field (Cameron, Watson, & Friedman, 2006; Neria, Gross, Marshall, & Susser, 2006; Norris, Galea, Friedman, & Watson, 2006; Ursano, Fullerton, Weisaeth, & Raphael, 2007), the goal of this book is to address crucial gaps in our knowledge by reviewing and synthesizing the existing literature on the mental health consequences of disasters, evaluating strengths and shortcomings of past and current methodologies,

and suggesting a comprehensive overview of future directions for improved research about the mental health consequences of disasters.

1.2. CONTENT AND STRUCTURE

This book has been organized thematically into seven parts. In PART ONE, two chapters describe the central themes that underpin research about the mental health consequences of disasters. In the first chapter, Beverly Raphael and Paul Maguire provide a comprehensive review of the history of the field of disaster mental health from the 1940s to the present. They present the main topics of the field and discusses key challenges ahead for mental health research. Next, Norris and Wind discuss the challenges involved in studying the impact of disasters, considering the nature of “indirect exposure” to traumatic events, the interplay between the “objective” and the “subjective” domains of exposure, and the “personal” level versus the “collective” level of catastrophic events.

In PART TWO, Psychopathology after Disasters, each chapter summarizes the literature about particular psychopathologies after disasters, considering both the evidence documenting these psychopathologies and the challenges inherent in understanding them. In the first chapter, McFarlane, Van Hooff, and Goodhew review the literature on the prevalence and the etiology of anxiety disorders following disaster. The authors underscore the complexity of anxiety disorders, the interplay between the various conditions, and the methodological shortcomings of some studies that limited our full understanding

of anxiety disorders after disasters. The second chapter in this part addresses an overlooked, yet central, domain of concern: physical health problems. Yzermans, van den Berg, and Dirkzwager discuss somatic diseases and disorders in disaster survivors, the differences between symptoms and diseases, and the relationship between psychological problems and physical symptoms. In the third chapter, Van der Velden and Kleber provide a critical review of the evidence regarding changes in the prevalence of use and misuse of substance, alcohol, and cigarettes after disasters of different types and magnitudes. The fourth chapter in this part focuses on two mental health conditions frequently associated with the experience of loss, namely depression and prolonged grief (also known as traumatic or complicated grief). Maguen, Neria, Conoscenti, and Litz suggest that while postdisaster depression has received considerable attention over the years, disaster-related grief, a condition that has been shown to be common and disabling among people who experience loss of attachment figures, remains understudied. The chapter further reviews risk factors for depression and prolonged grief following disaster and current treatments that should be considered. The closing chapter in PART TWO provides a synthesis of the current knowledge of the mental health effects of disaster. Ursano, Fullerton, and Benedek describe the range of psychological sequelae in the wake of disasters, from subsyndromal symptoms of distress, to alterations in behavior, to the development of specific psychiatric disorders, particularly posttraumatic stress disorder (PTSD). They also provide an integrative theoretical framework for understanding and studying postdisaster psychopathology.

PART THREE focuses on key aspects of vulnerability and resilience in the face of disasters. The first chapter, by Bonanno and Gupta, reviews the evidence on the human capacity to cope with adversities. They discuss the conceptual differences between psychological resilience (low levels of disaster-related psychopathology) and recovery (decreased psychopathology over time) and review the available evidence on the correlates of resilience. In the next chapter, Benight,

Cieslak, and Waldrep critically review the research that has developed and tested a number of social and cognitive theoretical frameworks predicting mental health consequences of disasters, while providing a cross-theoretical model that depicts the interactions among the major constructs presented. In the last chapter in this part, Kaniasty and Norris offer an extensive discussion about social support during and after disasters, including the differences between received social support, perceived social support, and social embeddedness. Research on the differential role of those constructs and the evidence on support mobilization and support deterioration is systematically assessed.

PART FOUR provides a review of the scientific literature on the key known determinants of the mental health consequences of disasters. The part is focused on the role of gender, race/ethnicity, and age as determinants of mental health after disasters, as well as the mental health consequences of disasters among particular groups, including media personnel and uniformed rescuers. In the first chapter, Kimerling, Mack, and Alvarez address why women have repeatedly been shown to be at increased risk for psychopathology after disaster. In the second chapter in the part, Hoven, Duarte, Turner, and Mandell critically review the literature on postdisaster PTSD among children and adolescents, with a particular focus on the methodological shortcomings of the literature in the area. In the next chapter, Cook and Elmore provide a comprehensive and critical analysis of the evidence of the consequences of disasters among older adults; they also discuss the implications of the available evidence for disaster policy and planning for the needs of the aging population after such events. In the fifth chapter, Hawkins, Zinzow, Amstadter, Danielson, and Ruggiero summarize the evidence on the relations between race/ethnicity and socioeconomic status and mental health outcomes following disasters. Newman, Shapiro, and Nelson review the current knowledge about the role of journalists and the news media during disasters, the evidence about the impact of disasters on the mental health of journalists, and the evidence regarding the impact

Disaster Mental Health Research: Exposure, Impact, Response**3**

of media coverage upon the public. In the final chapter in this part, McCaslin, Inslicht, Henn-Haase, Chemtob, Metzler, Neylan, and Marmar focus on the aftermath of disasters among uniformed rescue workers, including police officers and firefighters. As these groups are often required to take part in rescue efforts and recovery, they may find themselves at heightened risk of exposure to high impact trauma and its emotional aftermath.

PART FIVE discusses the science of interventions after disasters, along with the barriers and challenges faced in providing mental health care services after these events. Bryant and Litz summarize the state-of-the-science evidence on mental health interventions after disaster in the immediate and intermediate stages and propose recommendations with regard to the choices clinicians, policy makers, and researchers must make regarding provision of mental health care during this time. This chapter is followed by a review of long-term treatments among adult survivors and rescue workers. Difede and Cukor focus on the scarce evidence base for long-term treatment of the most common outcomes following disaster and the gaps in that knowledge base. Next, Levitt, Hoagwood, Greene, Rodriguez, and Radigan review the literature on postdisaster trauma treatments for children and adolescents and discuss the need to translate efficacious treatments to the community for use in the wake of disasters. Finally, Elhai and Ford provide a critical analysis of utilization of mental health services, barriers to utilization, and specific examples of implementation of mental health services in the aftermath of disasters.

The case studies in PART SIX present detailed explorations of a number of sentinel natural, technological, and human-made disasters, with discussions that integrate many of the observations made in other chapters in the book. Chapters include discussions about the Southeast Asian tsunami, by Lopes Cardozo and

colleagues; the Marmara Earthquake, by Başoğlu and colleagues; Hurricane Katrina, by Kessler and colleagues; the Chernobyl nuclear accidents, by Bromet and Havennar; the *Exxon Valdez* oil spill, by Palinkas; the Enschede fireworks disaster, by Van der Velden and colleagues; shooting episodes, by North and King; the Oklahoma City bombing, by Pfefferbaum and colleagues; the September 11th attacks, by DiMaggio and Madrid; the London bombings, by Greenberg and colleagues; and terrorism in Israel, by Shalev and Errera.

PART SEVEN offers concluding remarks about key challenges in research concerned with postdisaster mental health. Galea and Maxwell discuss the methodological challenges that researchers face when they design, implement, and analyze studies aimed at understanding the mental health consequences of disasters. Neria, Galea, and Norris conclude the book by summarizing the evidence about the burden of psychopathology after disasters as presented in various chapters throughout the book, the challenges in assessing psychopathology in these circumstances using established criteria, the limitations of current research, and the extent to which what we have learned thus far has enabled us to predict and anticipate the mental health consequences of future disasters.

REFERENCES

- Cameron, R., Watson, P., & Friedman, M. (2006). *Interventions following mass violence and disasters strategies for mental health practice*. Guilford Press. New York.
- Neria, Y., Gross, R., Marshall, R., & Susser, E. (Eds.). (2006). *9/11: Mental health in the wake of terrorist attacks*. Cambridge University Press.
- Norris, F. H., Galea, S., Friedman, M., & Watson, P. J. (Eds.). (2006). *Methods for disaster mental health research*. Guilford Press. New York.
- Ursano, R., Fullerton, C., Weisaeth, L., & Raphael, B. (2007). *Textbook of disaster psychiatry*. Cambridge University Press.

Cambridge University Press
978-1-107-41282-8 - Mental Health and Disasters
Edited by Yuval Neria, Sandro Galea and Fran H. Norris
Excerpt
[More information](#)

Cambridge University Press
978-1-107-41282-8 - Mental Health and Disasters
Edited by Yuval Neria, Sandro Galea and Fran H. Norris
Excerpt
[More information](#)

PART ONE

Concepts

Cambridge University Press
978-1-107-41282-8 - Mental Health and Disasters
Edited by Yuval Neria, Sandro Galea and Fran H. Norris
Excerpt
[More information](#)

2 Disaster Mental Health Research: Past, Present, and Future

BEVERLEY RAPHAEL AND PAUL MAGUIRE

2.1. INTRODUCTION

Insights about disasters inevitably arise from history, social science, and the vast range of attempts to understand the nature of human behavior in such settings. Insights relevant to mental health have been developed more recently, in part because of the evolving nature of both the mental health and disaster fields. In reviewing the development of mental health interest in and research about disasters, there are many seminal studies and publications, building progressively in their contributions to the science of this field. It is impossible here to acknowledge each of these individual projects. Instead, the challenge lies in identifying the core themes of this field, their scientific evolution, their application to the reality of disaster contexts, and what may be required for the future. The themes that will be considered in this chapter have influenced research and practice over the past four to five decades, particularly in recent times. Nevertheless, they require critical examination and development, as do the research methodologies applied, if we are to meet the challenges of the future.

2.2. HISTORICAL BACKGROUND

2.2.1. Early Efforts

The field of disaster mental health research emerged from inquiries into the phenomena associated with the mental health impacts of war. An example, for instance, is Freud's attempts to understand civilization(s) and their discontents,

the "traumatic" neuroses, and mourning and melancholia. An early specific focus for mental health in relation to disaster was led by Lindemann's (1944) report on the "Symptomatology and management of acute grief," which brought the mental health aspects to the fore, as did his colleague Adler's (1943) paper about the neuropsychiatric consequences for victims of the Coconut Grove Night Club fire.

Tyhurst (1950) wrote eloquently on individual reactions to community disaster and the natural history of certain psychiatric phenomena, offering new concepts in describing the overlapping phases of impact, recoil, and the post-traumatic period, including recovery. He also discussed the "disaster syndrome" – the period of impact or immediately afterwards where the person is dazed, stunned, unaware, frozen, or wandering aimlessly – which he believed could affect up to 20% to 25% of exposed people. He described it as usually transient, giving way to hyperactivity or appropriate adaptive response. Wolfenstein (1957), in her psychological essay on disaster, continued these phenomenological themes of behavioral responses and their patterns over time. Understanding of phenomena was also carried forth from work such as that of Quarantelli (1954), a sociologist, who described the unlikelihood of panic behaviors. This challenged the popular beliefs of the time that the threat of disaster, or its occurrence, would lead to panic and social disintegration, thus, highlighting the contribution of sociology to informing the mental health understanding of such threats. These early researchers acknowledged the nature of stressors, such as death,

destruction, injury and loss, and their significance in relation to the phenomena that might emerge. However, they did not systematically examine specific correlations.

Throughout the 1960s, societal themes were prominent; examinations included *Man and society in disaster* (Baker & Chapman, 1962) *Communities in disaster; A sociological examination of collective stress* (Barton, 1969); and *Organisational behaviour in disaster* (Dynes, 1970). This stream was an important component of analysis, often setting the context for more individualistic analyses devised from psychological research observations. These works also highlighted the importance of the effects of events on communities and societies, the mass response to them, and the interpretations and meaning that followed. The themes had very significant implications, at times reinforcing stigmatized and victim identities and helplessness, and at other times presenting such positive interpretations that the suffering from mental health consequences of disasters seemed to be denied. Critically important in identifying the value of such approaches was Lifton's (1967) study of Hiroshima victims, "Death in life," which portrayed vividly the stressors, the phenomenology, and the social construction of meaning for both those directly affected (Hibakusha) and their communities. He highlighted courage and resilience as well as suffering and stigmatized identity.

2.2.2. The 1970s and 1980s

Mental health aspects of disasters became a more specific focus during the 1970s and 1980s. A valuable review by Kingston and Rosser (1974) drew together some of the impacts of disaster on mental and physical health. In this period, and subsequently, there were many different studies focusing on specific natural disasters: floods, tsunamis, earthquakes, volcanic eruptions, bush and forest fires, cyclones, hurricanes, tornados, storms, and the like. These studies involved population-based epidemiological methods in some instances, in others, reports on selected victim groups. The majority looked for impacts on the health and

mental health of the general victim population for example, Abrahams, Price, Whitlock, and Williams, 1976 (floods in Brisbane, Australia); Logue, Hansen, and Struening, 1979 (Hurricane Agnes); Shore, Tatum, and Vollmer, 1985 (Mt. St. Helen's Volcano); or of specific affected subgroups, such as children (Milne, 1977). Also during this time, there were studies of "human-caused" disasters. Perhaps the best example is exemplified by Weisaeth's (1989) detailed studies on the effects of a paint factory explosion and fire, in which using a total population sample he was able to demonstrate a dose-response effect of stressor exposures.

These and many other research reports of this period contributed in significant ways to better understandings of the nature of the particular disaster exposures and their potential implications for mental health in the short and long term. Studies of different disaster contexts and causes – for instance, vehicle crashes, system failures such as mine collapses, chemical accidents, structural and building collapses, and marine incidents – demonstrated that such experiences would be likely to be associated with greater risk to mental health. Scientists noted this could potentially be related to the mass and gruesome nature of the deaths; the deaths of children; levels of personal life threat; bereavements in disaster circumstances that were untimely, unexpected, and traumatic in nature; and the dislocations and associated disruptions of social bonds through evacuations, destruction of homes, and the like.

In addition, research during this period provided greater understanding of the different affected populations and the stressors and mental health outcomes they experienced. The impacts on disaster responders in emergency organizations and the differing "victim" categories among this population, as noted in Taylor and Frazer's (1982) and Jones' (1985) descriptions of the stress of body handling and disaster victim identification, were highlighted. The special needs of children, adolescents, families, and older people were all identified. However, these studies used diverse methods and their findings allowed only limited synthesis.

Disaster Mental Health Research

9

The use of both sociological and mental health approaches was extended in the multiple studies of the Buffalo Creek Disaster, where stressors such as dislocation from communities, exposure to life threat, gruesome and untimely deaths, loss of loved ones, impacts on children, and disruptions of social bonds were shown to have profound, damaging, and long-term effects. Multiple sociological and clinical research studies on disasters contributed to the development of a comprehensive picture of these processes over time with sociologists, psychologists, and psychiatrists providing diverse contributions (Erikson, 1976; Gleser, Green, & Winget, 1978; Titchener, Kapp, & Winget, 1976). Ochberg, and Soskis (1982) also contributed to the field with recognition of the mental health impacts for victims of political terrorism. These studies placed mental health findings in societal contexts recognizing the powerful social influences in individual experience and outcomes.

In the attempt to develop appropriate responses to the impacts of disasters, manuals were developed, for instance, *Emergency and disaster management: a mental health source book*, which included contributions from many researchers in this field (Parad, Resnick, & Parad, 1976). Cohen and Ahearn's (1980) *Handbook of mental health care of disaster victims* was also influential, particularly in its recognition of the need for a systems approach and engagement with affected communities.

It is important to see the growth of interest in the field of disaster mental health during this time in additional contexts. The implications of psychological trauma were building on top of the understanding of these concepts from World Wars I and II and the detailed examination of the long-term effects of Holocaust trauma by researchers such as Eitinger (1969), Krystal (1968), and Frankl (1984). With Horowitz's conceptualization of Traumatic Stress Syndromes (1976), this focus became very relevant to examining the effects of massively traumatic incidents such as disasters. Findings that Vietnam Veterans suffered significant levels of psychologically traumatic impacts on their mental health and the establishment of the diagnosis of posttraumatic

stress disorder (PTSD) in 1980 in DSM-III further focused interest on this syndrome. Studies of disaster in civilian populations provided the opportunity to examine the etiology and evolution of posttraumatic morbidity such as PTSD, as exemplified in McFarlane's (1988) research following an Australian forest fire. While early research distilled the multiple and diverse stressors that may arise with disasters – life threat, loss and bereavement, dislocation, loss of resources – the field of studies, as well as response systems, became almost overwhelmed by the evolving concepts of psychological trauma and traumatic stress as the principal paradigm during the decades from the 1980s onwards.

Nevertheless, up through the mid-1980s, the disaster studies available dealt with a wide range of outcomes, variable methodologies, and provided little systematic research to guide intervention. Thus, the field of disaster mental health could be seen as involving a number of research and response themes. Mass events such as disasters were recognized as potentially having significant impact on mental health and well-being. These outcomes were seen as more severe for those affected by “human-caused” disasters, but affecting all age groups, with children and perhaps minorities being particularly vulnerable. Resilience, capacity for effective response, altruism, courage, and effective actions for recovery were likewise recognized, although poorly operationalized and measured at this time. Though scientists such as psychologists and psychiatrists played an increasing role through their research contributions, the influences of sociologists, so valuable in the early stages, were often not encompassed in the mental health approaches that dominated. Nor were cultural themes and differences adequately incorporated, despite the knowledge that developing countries were more frequently and adversely affected.

Consequently, in the mid-1980s, it became evident that there was a need to promote more collaborative international approaches and potentially shared methodologies (Raphael, 1986). The extent of disasters and their mental health consequences had become matters of interest for world bodies, such as the World Health

Organization (WHO), the United Nations, and numerous nongovernment relief and aid organizations, such as the Red Cross. In this context, an international group of researchers in the field met to draw together suggestions for common research measures that could provide comparable core data so as to allow enough comparisons of findings from diverse disasters, with multiple stressors affecting multiple complex population groups (Raphael, Lundin, & Weisaeth, 1989).

A very important international development through this period involved the establishment of the International Society for Traumatic Stress Studies, which brought together passionate advocates and scientists dedicated to building the knowledge base, the integration of research findings with disaster planning and response. Indeed, these questions of the translation of research to practice and the translation of practice to research remain an issue even today, well exemplified in recent reports on response to mass terrorism events such as September 11th (Neria, Gross, Marshall, & Susser, 2006).

The wish to assist, the psychological impacts on those who were not direct victims, and the convergence of informal helpers, combined to make intervention a priority development. Concepts of psychological first aid and psychological debriefing (Raphael, 1977), counseling for these bereaved (Singh & Raphael, 1981), and psychotherapeutic outreach (Lindy, Green, Grace, & Titchener, 1983) were all implemented, but the limited evaluation highlighted the need for a more informed, systematic set of intervention strategies linked to assessment. However, the model developed by Jeffrey Mitchell (1983), Critical Incident Stress Debriefing, with its structured format for emergency services, was attractive in that it offered clear guidelines of what to do in the face of chaos and uncertainty. This became, as with the traumatic stress paradigm, the principal intervention modality postdisaster, used well beyond the framework for first responders for whom it was originally developed and, as with other disaster interventions described earlier, not subjected to the randomized controlled trial.

2.3. INTEGRATING RESEARCH INTO DISASTER RESPONSE

During the 1990s and beyond, a range of groups attempted to draw together what was known to guide planning and response. The WHO recognized the importance of developing guidelines for disasters as a whole, producing, with the support of researchers in the field, Psychosocial Guidelines for Preparedness and Intervention in Disaster (WHO, 1991). This represented an important contribution from such an authoritative body and gave emphasis to the psychosocial/mental health aspects of response. There was an emerging focus on the disasters and related trauma that occurred in different countries and continents. The *International Handbook of Traumatic Stress Studies* drew together a wide range of studies across nations and catastrophes, demonstrating the complexity and advances in this field, and addressing a more international approach (Wilson & Raphael, 1993). Other processes expanded the knowledge base about disaster mental health during the 1990s, including the increasing quality and numbers of publications such as those of the *Journal of Traumatic Stress* and the work of societies such as the European and International groups of Traumatic Stress Studies. The National Centers for Post Traumatic Stress Disorder and the Child Traumatic Stress Networks in the United States contributed significantly.

A number of studies and conceptualizations started to influence both research and response in the field. Diverse research contributing to the understanding of single disasters, such as the Buffalo Creek Disaster, demonstrated the chronicity of stress syndromes in such circumstances (Green et al., 1990), the range of mental health outcomes and social change, as well as the impact on children. Hurricane Andrew was extensively researched from psychiatric and sociological perspectives (Norris, Perilla, Riad, Kaniasty, & Lavizzo, 1999). Such studies reiterated the importance of social contexts, particularly, social bonds, and support and the buffering effects these may have in the face of adversity (Norris & Kaniasty, 1996). Cultural variables, as