# Part I

# Introduction

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# Mental health in the wake of terrorism: making sense of mass casualty trauma

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On the morning of September 11, 2001, with the attacks on the World Trade Center (WTC) and the Pentagon, the world that many of us thought we knew, was altered. While thousands of people were directly exposed to or witnessed the attacks from close proximity, millions around the globe watched the events in real time or repeatedly over time on news channels. The attacks of 9/11 will likely be the most witnessed terrorist acts in modern history.

The events that unfolded on and after 9/11, and the subsequent terrorism around the globe have created a climate of fear and anxiety. These are the psychological outcomes that terrorists seek to inflict. Terror can only be effective if it leaves lingering concerns about safety; if it disrupts the most basic ways citizens manage and control their lives.

The overall goal of this volume is to document and critically examine the comprehensive and wide-ranging mental health response after 9/11. Specifically, this volume aims to examine:

(1) Whether the research on the psychological consequences of 9/11 suggest a unique and substantial emotional and behavioral impact among adults and children.
(2) In what way the impact of these attacks exceeded the individual level, affected communities and specific professional groups, and tested different leadership styles.
(3) How professional communities of mental health clinicians, policy makers and researchers were mobilized to respond to the emerging needs post-disaster.
(4) What are the lessons learned from the work conducted after 9/11, and the implications for future disaster mental health work and preparedness efforts.

## Contemporary terrorism: a psychological warfare

While early definitions of disasters typically implied a single "event" that affected a single "social group" and was usually limited to a specific point of "time" or "location"

(see Quarantelli, 1998; Lopez-Ibor, 2005), the scale of the 9/11 events, occurring simultaneously in two major urban centers, challenges early concepts of disasters. The unfolding series of post-9/11 al-Qaeda assaults (e.g., March 11, 2004 in Madrid; July 7, 2005 in London) has impacted enormous numbers of people sending a clear message that terrorism is primarily psychological warfare rather than conventional military warfare, aimed at causing fear and disarray in large populations.

More than 25 years ago, before suicide terrorism had become a worldwide concern, Mengel (1977) distinguished between terrorism that seeks to discriminate its target selection and terrorism that involves random acts. While the first type of terrorism has a political agenda and uses bargaining to maximize its political power, the second type, rooted in an extreme ideology, aims to create global conflicts, and to maximize the destruction of its "enemy". In the pre-9/11 era terrorist activities targeted mostly narrow and specific objectives, were limited to specific geographical areas (e.g., Israel, Lebanon, Indonesia), and the terrorists benefited from relatively limited media coverage. Contemporary terror campaigns, however, target major metropolitan areas with vast geopolitical and economic significance, threatening large masses, relying on wide media coverage, and benefit from worldwide attention to accomplish their agenda.

9/11 and the following stream of terrorist attacks demonstrate that contemporary terrorism has an extremely effective capacity to impact the psychological and social well-being of citizens in places never before disrupted by security problems. Large urban cities are especially vulnerable to terrorist assaults because they are open, easy to infiltrate, and easy to hit.

More than seven decades ago, Carr (1932) conceptualized a disaster not only as an "event" but rather as the collapse of a community's "cultural protections". Accordingly, large-scale, unanticipated, incidents such as the orchestrated attacks of 9/11, or for that matter any large-scale unpredicted disaster, has the potential to intimidate large communities causing them to doubt whether they are able to effectively defend themselves and to guarantee their own existence.

As previously discussed elsewhere (Neria *et al.*, 2005) a major aim of contemporary terrorism, especially in its suicidal form, is to ignite a worldwide clash between ideological and religious groups: to create a division between "good" and "evil", between "true believers" and "infidels" and to stigmatize people who don't believe in a certain divinity as sinners doomed to be rebuked and eventually exterminated from the earth.

Continuous exposure to this sort of stress might result in a wide range of behavioral changes. In several urban centers around the globe, citizens are voluntarily limiting their actions, avoiding public transportation, changing social habits such as entertainment in crowded spaces. In Jerusalem, for example, many people have developed the so-called "security zones", where they can socialize freely, creating

the illusion of security or invulnerability. In other cities (e.g., New York City), citizens are being monitored, their bags checked, and they are being questioned and asked to show identification papers more and more often.

Sadly, these are the calculated consequences of terrorism as warfare (see Levy & Sidel, 2003; Post, 2003; Susser *et al.*, 2002; Yehuda & Hyman, 2005). Terrorism's objective is emotional and behavioral modification of entire populations through widespread dissemination of fear and psychological distress (Velez, 2005). Terrorists accomplish their goals by inducing instability and distress, violating the underpinnings of daily life (Fullerton *et al.*, 2003) and inflicting changes to the ordinary routines of the general population (Holloway & Fullerton, 1994). Although typically, terrorism does not pose existential danger to nations due to its lack of significant military impact, it is effective in attacking the public's morale, reducing trust in democratic processes, and eventually eroding resilience in continuously exposed communities.

## Individual and community sequelae of disaster trauma: vulnerability and resilience

Terrorism is often perceived as a "pervasive generator" of psychopathology (Fullerton *et al.*, 2003; p. 4 Holloway *et al.*, 1997; North *et al.*, 1999; North & Pfefferbaum, 2002). However, research on the mental health consequences of terrorism, with the exception of the Oklahoma City bombing (e.g., North *et al.*, 1999; Pfefferbaum, 1999), has been relatively scant.

In the immediate aftermath of a disaster, affiliative, attachment-motivated behaviors such as bonding, caring, and collaborating were suggested to be common among victims and rescue forces (Mawson, 2005; Raphael, 2005). Indeed the extreme experiences of disasters often bring people together with altruistic intent to help victims, directly, or indirectly (e.g., making or raising donations). These types of behaviors may be common in the first and the second post-disaster phases referred to respectively as the "rescue" and the "honeymoon" phases (Raphael, 2005). However, when the hard facts about the toll of the disaster sink in (e.g., scale of loss and destruction), and penetrate the "denial shield" typical to the immediate aftermath of the disaster, a "disillusionment" phase often takes place, and fatigue and bereavement take over.

Previous research has underscored the role that immediate responses to trauma play in the long-term adjustment of the exposed individuals, suggesting that uncontrolled behaviors are powerful predictors of chronic post-traumatic stress disorder (PTSD; e.g., Neria *et al.*, 2000a). Similarly, 9/11 studies have shown that the experience of panic during the attacks is strongly associated with PTSD in people exposed to the WTC attacks (Galea *et al.*, 2002).

The nature and the impact of the immediate response of the public to disasters are yet to be understood and so far the findings are not conclusive (see Mawson,

2005; Raphael, 2005). Early reports on Londoners in the aftermath of the attacks during the summer of 2005 suggest that panic was uncommon in the immediate aftermath of the attacks (Wessley, 2005). However, images of people running from the WTC site during the morning of the 9/11 attacks suggest that many people experienced acute and intense fear and horror. The images recently received from Hurricane Katrina sites (September 2005) similarly suggest intense anger and panic-type responses in neglected neighborhoods, rescue sites and temporary shelters especially among people caught in extreme conditions waiting for rescue and help that are late to come. Dysfunctional behaviors (e.g., people who engaged in aimless, dissociative and stunned behaviors) have also been observed when disasters strike (Tyhurst, 1951; Weisath, 1989), and it has been suggested that bio-terrorist events may further escalate fears of chemical or biological agents (see Ursano *et al.*, 2004). Differences in the collective, immediate responses in affected populations might be accounted for by specific characteristics of the exposure (e.g., whether the way out of a building is cleared), availability of help, and social support and cultural differences.

Research on the long-term effects of extreme traumatic events has provided useful information, enabling disaster clinicians and policy makers to make inferences about risk and vulnerability among affected populations. Traumatic events are common (Kessler *et al.*, 1995) and most of the individuals exposed to trauma effectively cope with such events, even if they experience significant adversities (Bonanno, 2005; Bonanno, *et al.*, 2005; Neria *et al.*, 1998, 2000b). At the same time, disaster research has systematically documented that a significant minority will experience functionally impairing distress, especially in the immediate aftermath; some are likely to manifest behavioral and cognitive changes; and others will develop long-term trauma-related psychiatric disorders such as PTSD, trauma-related depression and substance abuse (e.g., Norris *et al.*, 2002a&b).

The severity of a post-disaster psychopathology is associated with various risk and protective factors including type, intensity and duration of exposure, level of resource loss, social support, sense of community and meaning making (e.g., Norris *et al.*, 2002a). Sociodemographic factors such as previous trauma history, mental health problems, age, gender and education might also play a role in onset and persistence of psychiatric symptoms (Brewin *et al.*, 2000). The interaction of human loss and trauma exposure may be particularly powerful in post-traumatic adaptation (Neria & Litz, 2004; Neria *et al.*, this volume). At the same time, traumatic experiences may serve as an opportunity for positive growth, an enhanced sense of purpose, and an opportunity to reprioritize everyday life goals. Persons who are able to draw positive appraisals of their adversities were found to grow personally from traumatic experiences, as compared to those who do not, even if they suffer symptoms of PTSD (Dohrenwend *et al.*, 2004).

To date, the effects of large-scale disasters on communities and individuals have been focused almost entirely on natural disasters (Norris *et al.*, 2002a&b). However, when a community is struck by terrorism, the experience is likely to differ from that of a natural disaster. Natural disasters (Kaniasty, this volume; Kaniasty & Norris, 2004; Norris, this volume) are usually limited to time and space, are often expected (e.g., hurricanes) and their pace usually enables some coordination of rescue efforts, sheltering and deployment of medical services. Terrorism, however, usually occurs randomly and unexpectedly with regard to place and time. Accordingly, the psychological impact is likely to be accumulative, wide, non-specific and enduring, affecting how whole communities cope with subsequent threats and demands (Shalev, 2005; Maguen & Litz, this volume).

## Indirect exposure and post-disaster psychopathology

The nature of the psychological effect of disasters, especially man made, may exceed the scope of the particular epicenter where the impact occurred (see Schlenger *et al.*, 2002; Galea *et al.*, this volume; Silver *et al.*, this volume). The magnitude of this kind of exposure might not be necessarily limited to the well-documented dose response associations of trauma and effect. The studies presented in this volume provide a rare opportunity to address this topic. For example, while Neria *et al.* in their study of primary care patients exposed to the 9/11 attacks in Northern Manhattan did not find indirect exposure to WTC attacks by itself to be related to PTSD (Neria *et al.*, this volume), other studies conducted in national samples after 9/11 (Schlenger *et al.*, 2002; Silver *et al.*, 2002; Stein *et al.*, 2004; Silver *et al.*, this volume) or in distant population areas after the Oklahoma City bombing (Pfefferbaum *et al.*, 2000) or in Israel after the 1991 Scud missile attacks (Bleich *et al.*, 1992) provide some evidence for probable relationships of indirect exposure and PTSD. These kinds of findings may challenge the core definition of PTSD. They lead to the question whether a person who was not directly exposed to trauma, witnessed it, or lost a loved one, might be traumatized by this type of exposure and would be eligible for a positive Diagnostic and Statistical Manual for Mental Disorders (DSM) Criteria A of PTSD.

Instead of direct exposure to the attacks of 9/11 most of the persons interviewed in post-9/11 national surveys reported indirect exposure (e.g., watching live and retransmitted coverage on TV). The inclusion of this type of exposure is certainly new to the discipline of trauma research and brought experts to doubt its reasoning and validity (e.g., Southwick & Charney, 2002; McNally, 2003; Breslau & McNally, this volume). The events of 9/11, the subsequent wars in Afghanistan and Iraq, and terrorist events in Europe and recent major natural disasters provide a further opportunity to examine whether direct exposure to trauma is a necessary condition for PTSD, or alternatively an interaction between a "sufficient" level of exposure and

certain risk factors (e.g., genetic susceptibility) can result in post-exposure psychopathology even via indirect exposure.

## Post-disaster outreach and intervention

It was suggested that most of the people exposed to 9/11 attacks did not seek mental health care (e.g., Stein *et al.*, 2004). The degree to what other sorts of care (e.g., from friends, colleagues, employers or clergy), often mentioned in the media, are utilized in the face of disasters is not clear and has never been systematically studied. Indeed, people exposed to traumatic experiences often remain in isolation due to shame and guilt associated with the trauma, stigma associated with treatment of mental health problems, and the social context (Litz, 2004). However, when trauma has occurred in the public domain (e.g., national disasters) and is associated with a public emergency, large and varied groups of professionals are likely to intervene at the disaster sites in attempts to aid affected populations during, immediately or soon after the incident. Most early responders (e.g., firefighters, police officers, medical teams, National Guard, Red Cross) are not qualified or trained to provide mental health care. They are focused on providing for the safety and basic needs of victims and evacuees. However, some first responders may also be required to address the mental health needs of victims, especially in the acute phase when fear and terror are prevalent. It is especially important to address immediate interventions aimed at high-risk groups such as the injured children and the elderly (Litz, 2004). To date little is known about the emotional care, screening or triage conducted in the immediate phase after impact. Schechter and Coates (this volume) provide a rare opportunity to learn about immediate intervention provided to children in the immediate aftermath of the WTC attacks.

Despite emerging evidence that did not provide any support for the effectiveness of psychological debriefing post-exposure (Bisson *et al.*, 1997, 2000; Mayou *et al.*, 2000; Rose *et al.*, 2002), this type of intervention was still common among people involved in 9/11 rescue and recovery efforts (http://edition.cnn.com/2002/US/07/20/wtc.police/?related). Randomized clinical trials conducted in the last decade consistently support the use of cognitive behavioral treatment (CBT) post-exposure (Foa & Cahill, this volume). The differences between these two modalities are substantial. Psychological debriefing was originally conceptualized to be implemented by non-clinicians, immediately but not only after the exposure, consisting of a single and long meeting, and without a clinical evaluation either before or after the intervention. On the other hand, CBT programs are initiated at least 2 weeks after the exposure, implemented only by clinicians, usually consist of 4–12 sessions, and entail a systematic pre- and post-intervention evaluation. While the efficacy and effectiveness of CBT

was consistently proven (Foa & Cahill, this volume), debriefing was found to be either not effective in preventing PTSD (Bisson *et al.*, 2000; Rose *et al.*, 2002) or delayed recovery (Bisson *et al.*, 1997; Mayou *et al.*, 2000). Several explanations were suggested to explain the poor performance of debriefing (e.g., for a review see Friedman *et al.*, 2004) such as that debriefing interferes with habituation and cognitive changes that are beneficial for recovery (Foa & Cahill, this volume); that a focus on acute post-traumatic symptoms may foster negative cognitions about oneself and the world (McNally, 2003); and that the timing of the intervention in psychological debriefing is too early and impedes normal remission and normal recovery (Ehlers & Clark, 2003).

The terrorist attacks of 9/11 had an enormous impact on the mobilization of the professional community in the New York area (Marshall *et al.*, this volume; Felton *et al.*, this volume). Large-scale training programs aiming at dissemination of knowledge of trauma treatment were offered to clinicians (Amsel *et al.*, this volume); treatment programs for adults (Katz *et al.*, this volume; Difede *et al.*, this volume; Marshall *et al.*, this volume) and children (Hoven *et al.*, this volume; Murray *et al.*, this volume; Schechter & Coates, this volume) were developed; and statewide outreach (Draper *et al.*, this volume) and counseling programs (Felton *et al.*, this volume) were rapidly developed and employed.

Drawing quality lessons from horrific experiences such as 9/11 attacks is central to the future work mental health professionals will conduct before (e.g., preparedness), during (e.g., management and triage), and after (e.g., long-term care; training and dissemination) the next mass casualty trauma. This volume was created to facilitate this learning process. Clinicians, researchers and policy makers who are involved in this work devote their best intellectual and emotional resources. Effective and meaningful disaster research relies on reliable observations and the ability to update the questions asked, and the tools selected to answer them (Galea *et al.*, this volume). We hope that this volume will contribute to all domains of disaster and terrorism-related mental health knowledge.

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