SAMHSA

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Mass Violence and Behavioral Health

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CONTENTS

INTRODUCTION

This issue of the *Supplemental Research Bulletin* focuses on how mass violence affects the behavioral health of adult and young (child and adolescent) survivors or witnesses of a mass violence incident. We discuss the phases of response experienced by survivors, as well as immediate and long-term reactions among adults and children and youth. This issue goes on to provide information on immediate and long-term interventions and the effects of mass media exposure following a mass violence incident. We briefly discuss the lack of research evidence in support of the idea that individuals with mental health issues are more likely than others to be perpetrators of incidents of mass violence. We conclude the issue with an examination of resilience.

Public health, behavioral health, and emergency management professionals can use this issue to improve their disaster behavioral health preparedness plans. We highlight several possible behavioral health inventions that may be helpful during the immediate and long-term phases of recovery from mass violence. Insights taken from this issue can also be used to help structure emergency planning exercises.

In this issue, national as well as international resources were used to describe some of the findings, as mass violence is an issue around the world, and some regions (for example, the Middle East) have experienced it for longer periods of time and with greater frequency than the United States. However, this issue will focus mostly on the effects of mass violence resulting from terror attacks or active shooter incidents in the United States rather than state-perpetuated violence.

Literature used in this issue includes scientific publications from the National Center for Biotechnology Information and U.S. National Library of Medicine (PubMed). Other sources were used to provide definitions and reflect policy-level interventions, including various federal agencies (such as SAMHSA, the U.S. Department of Veterans Affairs, and the U.S. Department of Justice) as well as nonprofit organizations (including the National Alliance on Mental Illness, the American Psychiatric Association, and the American Red Cross) and international agencies (such as the World Health Organization).

DEFINITIONS OF MASS VIOLENCE

The Office for Victims of Crime (OVC) and the American Red Cross define mass violence as

> an intentional violent criminal act, for which a formal investigation has been opened by the Federal Bureau of Investigation (FBI) or other law enforcement agencies, that results in physical, emotional, or psychological injury to a sufficiently large number of people to significantly increase the burden of victim assistance and compensation for the responding jurisdiction as determined by the OVC Director. (U.S. Department of Justice [DOJ], Office of Justice Programs [OJP], OVC & American Red Cross, 2005, p. 3).

Additionally, the World Health Organization defines collective violence, the category closest to mass violence in one of its reports, as "the instrumental use of violence by people who identify themselves as members of a group—whether this group is transitory or . . . more permanent . . . against another group or set of individuals, to achieve political, economic or social objectives" (Collective violence, 2002). In this issue, we consider incidents of mass violence to include terrorist attacks.

Terrorist Attacks

Terrorist attacks have increased in frequency in the last few decades, with the terrorists aiming either to create mass anxiety, fear, and panic and foster a sense of helplessness or to provoke reactions (Alexander & Klein, 2005; Horgan, 2017). According to LaFree (2017), terrorist attacks have increased steadily over the years—for example; in 2013 the total number of attacks was 135 percent of the total in 1992. A fact sheet from the National Consortium for the Study of Terrorism and Responses to Terrorism (START) reports that, between September 11, 2001, and December 31, 2015, 3,140 Americans have been killed in terrorist attacks (Jensen & Miller, 2016).

Fifty percent of the total number of people killed in terrorist attacks were killed in highly lethal terrorist attacks, according to Martens, Sainudiin, Sibley, Schimel, and Webber (2014). They define highly lethal attacks as those in which 21 people or more were killed in a single incident. Data were gathered from the Global Terrorism Database (GTD) produced by START. The GTD includes broad categories of data for terrorist incidents from 1970 through 2011 (but excluding 1993) (Martens, Sainudiin, Sibley, Schimel, & Webber, 2014). However, in spite of their large death toll, these attacks comprised only 3.5 percent of all terrorist attacks (Martens et al., 2014). Terrorism is dynamic; the same terror group might, over time, change focus regarding the kind of recruit it favors, and accordingly change opportunities for involvement when the group is under pressure from authorities (Horgan, 2017).

Active Shooter Incidents

The FBI and Texas State University report that active shooter incidents increased in frequency annually in the period between 2000 and 2013. During this period, there were 160 active shooter incidents. During the first 7 years, an average of 6.4 incidents occurred annually, while in the last 7 years that average increased to 16.4 incidents annually (Blair & Schweit, 2014).

Shultz, Cohen, Muschert, and Flores de Apodaca examined firearms deaths in the United States from 1990 to 2012 and included in their analysis active shooter incidents in schools (such as the Sandy Hook Elementary School shooting and the Virginia Tech shooting) (2013). They found that, while these incidents get high levels of attention, they are rare occurrences, and the fatalities resulting from them equaled 0.12 percent of national firearm homicide for the same period; their rarity and extremity however, combined with identification with the affected population, tend to get media attention (2013). Following the Sandy Hook Elementary School shooting, a Twitter national dataset analysis showed association with sadness and anxiety (Dore, Ort, Braverman, & Ochsner, 2015). The same study showed that for people living farther from the incident, or following a longer period, these reactions were shifted more towards anxiety. The authors argue that remoteness (either through time or location) prompted higher-level consideration of the unresolved causes of tragedy (Dore et al., 2015).

BEHAVIORAL AND MENTAL HEALTH REACTIONS TO MASS VIOLENCE

Following incidents of mass violence, the survivors or witnesses may go through multiple phases in which particular emotions, behaviors, and other reactions are fairly typical (Alexander & Klein, 2005; Freedy & Simpson, 2007; Goldmann & Galea, 2014; U.S. Department of Health and Human Services [HHS], SAMHSA, Center for Mental Health Services [CMHS], 2004; Yehuda & Hyman, 2005).

1. Acute phase: Characterized by denial, shock, and disbelief. In this stage, behavioral health officials can help survivors by providing them with resources and information. Mental health interventions such as Psychological First Aid, debriefing, accelerated resolution therapy, Skills for Psychological Recovery, and social support are most useful at this stage (Finnegan et al., 2016; Wade et al., 2014).

2. Intermediate phase: Characterized by fear, anger, anxiety, transient panic, retaliatory attacks, difficulty paying attention at work or school, depressed feelings, and disturbed sleep.

3. Long-term phase: Characterized by coming to terms with realities with alternate periods of adjustment and relapse. This is the period when untreated behavioral health reactions might solidify into illnesses that would need specialized mental health or substance use disorder-related attention.

Some of the survivors can incorporate these experiences into their lives and manage to increase their sense of personal efficacy through their suffering. However, not all who were exposed to trauma can come to terms with it, and these people find it difficult to reconstruct their lives (Goldmann & Galea, 2014; HHS, SAMHSA, CMHS, 2004; Yehuda & Hyman, 2005).

Mass violence can result in a wide range of consequences including anxiety, depression, reduced sense of safety, stress or posttraumatic stress disorder (PTSD), sleep problems, feelings of guilt and shame, and increased risk of smoking and misuse of alcohol and other substances (Aakvaag, Thoresen, Wentzel-Larsen, Roysamb, & Dyb, 2014; Collective violence, 2002; DiMaggio, Galea, & Li, 2009; Palmieri, Chipman, Canetti, Johnson, & Hobfoll, 2010; Zemishlany, 2012). These reactions depend on three main factors:

- The directness and severity of the exposure: This factor relates to type of trauma exposure, whether it is a threat to life, severe physical injury, receipt of intentional injury, exposure to grotesque scenes, loss of a loved one, or exposure of a loved one to violence (Goldmann & Galea, 2014).

- The presence of pre-disaster risk factors: Being part of a minority group, female, having lower educational level, or having a history of mental or physical illnesses is associated with a higher risk of developing longer-lasting mental health problems after a disaster (Collective violence, 2002; Goldmann & Galea, 2014; HHS, SAMHSA, CMHS, 2004; Yehuda & Hyman, 2005).

- The post-disaster environment: This factor includes post-disaster life stressors (such as job loss, property damage, or personal loss) and level of social support (Goldmann & Galea, 2014; Nandi, Tracy, Beard, Vlahov, & Galea, 2009).

Immediate Behavioral Health Reactions

Immediate reactions to an incident of mass violence or other traumatic experience may be in many domains, including physical, behavioral, emotional, social, cognitive, and spiritual. Table 1 lists some examples (National Child Traumatic Stress Network [NCTSN] & U.S. Department of Veterans Affairs [VA], National Center for PTSD, 2006; HHS, SAMHSA, CMHS, 2004; Yehuda & Hyman, 2005). These reactions usually vary among people based on their personalities, prior experience and attitude towards life, and ability to integrate the experience into their lives.

Immediate reactions usually are reported among a larger number of individuals than longer-term reactions. Common reactions include physical symptoms such as headaches, fatigue, gastrointestinal

upset, appetite changes, chest pain, rapid heart rate, or high blood pressure; cognitive changes and dysfunction; and increases in emotions such as fear or anxiety, anger or rage, and sadness (Eastern Mennonite University [EMU], Center for Justice & Peacebuilding [CJP], Strategies for Trauma Awareness and Resilience [STAR], 2016). In keeping with these patterns of reactions, a study that followed Twitter accounts of students after violent attacks on college campuses reported a significant increase in tweets with negative emotions (Jones, Wojcik, Sweeting, & Silver, 2016).

PTSD is not usually diagnosed in the early post-disaster phase, although people may experience symptoms—intrusive thoughts, flashbacks, avoidance of reminders of the traumatic incident, negative thoughts and feelings, and arousal and reactive symptoms—that if occurring months or years later could lead to a PTSD diagnosis (American Psychiatric Association [APA], 2017). The APA writes that a diagnosis of PTSD requires the persistence of reactions for months and sometimes years, whereas similar symptoms in the first month after a disaster are those of acute stress disorder (ASD) (2017). The National Center for PTSD cites studies estimating ASD prevalence after natural and human-caused disasters at rates ranging from 7 to 33 percent (Gibson, 2016).

Another possible short-term reaction is sleep problems. In a study investigating prevalence of sleep problems in Israeli Jews after an actual or threatened terror attack or rocket attack, the prevalence of sleep problems was 37 percent, and it was higher for people with probable PTSD (81 percent) or probable depression (79 percent). Independent correlates for poor sleep in that study were being female, older, less educated, and having experienced a major life stressor or psychological resource loss (Palmieri et al., 2010).

TABLE 1: EXAMPLES OF BEHAVIORAL, EMOTIONAL, COGNITIVE, PHYSICAL, AND SPIRITUAL IMMEDIATE REACTIONS FOLLOWING MASS VIOLENCE (EMU, CJP, STAR, 2007; Aakvaag et al., 2016; Alexander & Klein, 2005; DiMaggio et al., 2009; Freedy & Simpson, 2007; Goldmann & Galea, 2014; HHS, SAMHSA, CMHS, 2004; Palmieri et al., 2010; Seery, Silver, Holman, Ence, & Chu, 2008; Yehuda & Hyman, 2005)

Behavioral	Emotional	Cognitive	Physical	Spiritual
Sleep disturbances, nightmares	Shock/disbelief/ numbness	Confusion and disorientation	Chest pain	Emptiness/loss of meaning
Jumpiness	Anxiety/fear/sadness/ grief	Poor concentration and memory problems	High blood pressure	Doubt
Avoidance of any reminders	Anger/rage or desire for revenge	Repeated flashbacks	Rapid heart rate	Feeling unforgiven
Increased substance use (alcohol and drugs)	Re-experiencing pain associated with previous trauma	Hypervigilance	Gastrointestinal changes	Feeling punished
			Shallow breathing	Loss of direction
			Dizziness or faintness	Cynicism/apathy
			Chills or sweating	Alienation/mistrust/ crisis of faith
			Fatigue	
			Sleep disturbances	
			Headaches	
			Grinding teeth	

Long-term Behavioral Health Reactions

Most survivors do not develop disorders over the long term because of resilience, or "the ability to successfully adapt to stressors, maintaining psychological well-being in the face of adversity" (Goldmann

& Galea, 2014; Haglund, Nestadt, Cooper, Southwick, & Charney, 2007, p. 889). This concept is important, as a sizable percentage of people (40–78 percent) exposed to mass violence events and other potentially traumatic events are either entirely or almost entirely free of symptoms of disorders over time (Zemishlany, 2012). According to multiple studies, only a minority of survivors will develop conditions that reach diagnostic thresholds for PTSD, depression, and anxiety or have subclinical conditions months and years after an incident of mass violence (HHS, SAMHSA, CMHS, 2004; Miron, Orcutt, & Kumpula, 2014; Nandi et al., 2009).

Resilience is usually affected by a person's ethnicity, gender, psychosocial support, and socioeconomic status, with the least resilient being lower income and having lower levels of education (Goldmann & Galea, 2014; Hobfoll et al., 2009). Lower household income, exposure to ongoing stressors, and exposure to traumatic events were found to be associated with depressive symptoms in a study following the 9/11 attacks (Nandi et al., 2009).

Sometimes aspects of the disaster, particular disaster experiences, and individual differences seem to make it harder for survivors to activate resilience. Following the 9/11 terrorist attack in New York, the levels of PTSD and functional impairment declined after 4 years; however, there was a substantial increase in suicidal ideation and missed days of work in the same follow-up period (Neria et al., 2013). Additionally, in a study conducted 10 to 11 years following the attack, a markedly large group of survivors with mental health symptoms reported unmet mental health needs, especially those who lacked health insurance or social support (Ghuman, Brackbill, Stellman, Farfel, & Cone, 2014). The loss of someone close to the survivor was associated with a greater risk of mental illnesses including PTSD and major depressive disorder, as well as suicidal ideation, functional impairment, and missing work (Ghuman et al., 2014). After the 2005 bombings in London, a need for treatment was reported for 47 percent of participants who were screened for PTSD 2 years following the incident (Brewin et al., 2010). In school shootings, Miron et al. reported that people with greater emotional dysregulation and peritraumatic dissociative experience had quadruple the risk of developing posttraumatic stress symptoms 8 months after the incident (2014).

Following bioterrorism incidents (the anthrax attacks on Capitol Hill in 2001), among people with positive nasal swab tests, any post-incident psychiatric disorder was diagnosed (through structured interview) in 54.6 percent, and PTSD in 27 percent (North et al., 2009). Of those who were physically exposed without a positive nasal swab test, 24.4 percent were diagnosed with a post-incident psychiatric disorder; of those who were not physically exposed, 19.8 percent were diagnosed with a post-incident psychiatric disorder. Panic disorder was diagnosed in 1.5 percent, anxiety in 1.5 percent, and alcohol use disorder in 2.9 percent of the interview participants (North et al., 2009).

Other long-term implications of mass violence include substance misuse (Goldmann & Galea, 2014). In a meta-analysis studying substance use or misuse after mass trauma or terrorist incidents, the probability distribution for increased alcohol use following a terrorist incident, based on synthesis of 17 studies, was 20 percent that prevalence would be as high as 14 percent after 2 years. Cigarette smoking prevalence increased by 6.8 percent, and prevalence of mixed drug use was 16.3 percent (DiMaggio et al., 2009). Similar results were also reported in New York City public high school students following the 9/11 attacks (DiMaggio et al., 2009; Wu et al., 2006). In another study, a 1 percent increase in death because of terrorism and mass violence was associated with an increase of 0.10–0.12 in alcohol and drug use disability adjusted life years (Kerridge, Khan, Rehm, & Sapkota, 2014).

Reactions in Children

In children, the experience of disasters, violent victimization, and sudden death of loved ones depends on stage of psychological development, gender, anxiety level, life and family situation, and critical caretaking relationships (Kerns et al., 2014; La Greca et al., 2013; HHS, SAMHSA, CMHS, 2004; Pfefferbaum et al., 2014b; Pfefferbaum, Varma, Nitiema, & Newman, 2014). Human-caused violence may affect the child's trust in adults or in human nature. Children commonly implicate themselves in causing or worsening the incident, which might result in feelings of shame and guilt as well as self-blame (Aakvaag et al., 2014; Gamwell et al., 2015; HHS, CMHS, SAMHSA, 2004). The higher vulnerability in children may be associated with their lesser ability to deal or cope with their experiences (Goldmann & Galea, 2014; Norris, Friedman, & Watson, 2002).

For adolescents, exposure to violent incidents may lead to fears, anxieties, and vulnerabilities that are usually associated with a younger age. Six months following the Boston Marathon attack, youthful marathon attendants were found to have greater psychopathology, with PTSD being reported 6 times higher among marathon attendants than non-attendants (Comer et al., 2014). Additionally, following the Utoya shootings in Norway, students' grades and functioning in school was found to be impaired after experiencing trauma, and there was a reported increase in days absent from school (Strom, Schultz, Wentzel-Larsen, & Dyb, 2016).

BEHAVIORAL HEALTH INTERVENTIONS FOLLOWING MASS VIOLENCE

Mass violence affects large groups of individuals at the same time, whether they were survivors or witnesses of the event where it occurred or followed it through media outlets. Interventions are applied across all phases of disaster, with pre-event services planned to enhance preparedness, and post-event services designed to enhance resilience and reduce signs and symptoms of distress and disorders, and possibly to reduce long-term complications (Pfefferbaum et al., 2014b).

Interventions to counter the effects of mass violence require the coordinated effort of the individuals exposed, first responders, medical and mental health institutions, family, friends, and society, as well as local and national organizations. Generally, interventions aim to promote a sense of safety and calming, a sense of personal and community efficacy, connectedness, and hope (Hobfoll et al., 2007).

Adult Survivors

The immediate (up to 1 year post-disaster) mental health interventions in adult trauma survivors are listed and briefly explained in Table 2.

TABLE 2: IMMEDIATE MENTAL HEALTH INTERVENTIONS FOR ADULT SURVIVORS OF INCIDENTS OF MASS VIOLENCE

Intervention	Description
Psychological First Aid	"Psychological First Aid is an evidence-informed modular approach to help children, adolescents, adults, and families in the immediate aftermath of disaster and terrorism. [It] is designed to reduce the initial distress caused by traumatic events and to foster short- and long-term adaptive functioning and coping" (NCTSN & VA, National Center for PTSD, 2006; Fetter, 2005; Goldmann & Galea, 2014). Principles and techniques of Psychological First Aid are consistent with research, applicable in the field, appropriate for people at all developmental levels over the life course, and designed to be customizable to work well with a variety of cultures. Rapid assessment determines those survivors in most acute distress and in need of medical attention. This can also be performed in trauma centers for injured survivors (Petrie & Zatzick, 2010).
Community outreach	Community outreach could include initiating supportive and helpful contact sites; reaching out to survivors through the media, the Internet, and 24-hour telephone helplines; participating in or conducting meetings for preexisting groups as well as providing psycho-educational resources and referral information. Monitoring the well-being of the entire community or area that was harmed and/or threatened by the attack is critical, and integrating mental health interventions into existing community services makes them more acceptable to the population (Goldmann & Galea, 2014; Grills-Taquechel, Littleton, & Axsom, 2011; Hobfoll et al., 2011; Sherrieb & Norris, 2013).
Psychological debriefing	Debriefings are a type of intervention that can be used following a disaster or other traumatic event. The technique is applied within 48 hours of the traumatic event. In debriefing, victims are asked to describe the event and their emotional responses to it in detail. The method was suggested to reduce stress; **however, there are some questions on the effectiveness of psychological debriefing, as it may strengthen the memories of the traumatic event, impair the natural recovery process, and even worsen the symptoms** (VA, National Center for PTSD, 2016; Fetter, 2005; Goldmann & Galea, 2014; Sijbrandij, Olff, Reitsma, Carlier, & Gersons, 2006). • Critical Incident Stress Debriefing (CISD), a psycho-educational small group process, was developed exclusively for small, homogeneous groups who have encountered a powerful traumatic event. CISD aims to reduce stress and restore group cohesion and unit performance (Mitchell).
Psycho-education	Psycho-education is an important component of behavioral health interventions following immediate traumatic impact. In psycho-education, information is provided about post-trauma reactions, grief and bereavement, effective coping strategies, and when to seek professional consultation. Brochures or simple handouts are usually widely distributed in appropriate languages (HHS, SAMHSA, CMHS, 2004; Petrie & Zatzick, 2010).
Mental health consultation	Mental health professionals can be brought into decision-making and planning teams to advise leaders regarding mental health issues such as optimal scheduling, mental health support, and leave time for rescue and recovery workers, as well as other possibly sensitive procedures or activities (for instance, identifying body parts) (HHS, SAMHSA, CMHS, 2004; DOJ, OJP, OVC & American Red Cross, 2005).

Activities for long-term mental health intervention include the following:

- Screening to identify individuals and groups in need of mental health and crime victim assistance services and to prioritize the delivery of more intensive mental health services (Brewin et al., 2010; Hobfoll et al., 2011; Johnson-Agbakwu, Allen, Nizigiyimana, Ramirez, & Hollifield, 2014).

- Providing a range of crime victim services. Crime victims, their families, and others affected by the crime may receive crisis intervention and counseling, advocacy, grief and trauma counseling, and information and referral (DOJ, OJP, OVC & American Red Cross, 2005).

- Providing mental health support and consultation for community events (Birkeland, Nielsen, Knardahl, & Heir, 2015; Grills-Taquechel et al., 2011; Pfefferbaum et al., 2014b).

- Providing appropriate psycho-educational information to all affected survivor and responder groups and health care and social service providers in the community (Alexander & Klein, 2005; HHS, SAMHSA, CMHS, 2004; DOJ, OJP, OVC & American Red Cross, 2005).

Screening for Trauma

Screening for trauma is a very important step to help identify the affected people, gauge the severity of their condition, and determine whether they require referral to specialized institutions for treatment or further evaluation (Goldmann & Galea, 2014). Screening can be done through phone interviews to estimate the prevalence of PTSD and depressive symptoms. In a study conducted in Jerusalem using a sample of Jewish and Arab residents during a period of heightened threats, phone interviews to screen for behavioral health impact proved as effective as in-depth personal interviews in identifying the prevalence of these symptoms (Hobfoll et al., 2011). The researchers note that this method would prove very useful in reaching out to a higher percentage of the population, for epidemiological and census purposes as well as to guide public health intervention resource allocation (Hobfoll et al., 2011). It can also provide useful means in reaching out to displaced people (Goldmann & Galea, 2014). In a study evaluating the mental health of refugees, publicly listed telephone numbers with surnames known or thought to be related were searched, and a random sample was contacted and interviewed (Wagner et al., 2013). This can also be implemented using available lists to identify individuals who are known to have lived in the disaster area prior its occurrence to create a contact list to screen for post-disaster mental health impacts.

Mental health providers should keep in mind that not all people who were exposed to the potentially traumatic experience of an incident of mass violence will seek help. In a study, potential unmet mental health needs were reported in New York 6 months after the 9/11 terrorist attacks (Stuber, Galea, Boscarino, & Schlesinger, 2006). In that study, more than 60 percent of respondents with probable PTSD or depression did not seek help despite diminished functioning. Some barriers to help-seeking reported by the investigators were concerns about negative, inaccurate perceptions about mental health services and those who access them, along with the feeling that other people needed the help more than they did. On the other hand, people with physical health problems or who already were connected to mental health services had a higher probability of seeking mental health help (Stuber et al., 2006).

Further in the recovery process, CMHS and others identify the following tasks for mental health services (2004):

1. Identify those in need of medical mental health attention for stress reactions (for example, those in need of cognitive behavioral therapy or medications) (Goldmann & Galea, 2014).

2. Provide supportive assistance.

3. Facilitate connection of survivors with family and friends who can provide social support and ease pain and suffering (Grills-Taquechel et al., 2011).

4. Provide information about the status of the crime scene, perpetrator(s), and immediate law enforcement efforts (DOJ, OJP, OVC & American Red Cross, 2005).

Youth, Child, and Adolescent Survivors

For young disaster survivors, interventions should work to protect and enhance existing social support and foster resilience (Pfefferbaum et al., 2014b). The choice of an intervention must be matched to the child's reactions and the course of symptom development and recovery following disaster exposure. In children, the course of disaster usually follows the same trajectory as in adults, leading either to resilience and recovery or development of chronic behavioral health issues (Pfefferbaum et al., 2014a). In ideal situations, the child's close social circle or environment would be able to help mitigate the effect of disaster and initiate recovery.

The first level of intervention in children is the immediate social group including parents, siblings, and close friends who can help children cope with the situation by assisting with emotional processing, serving as familiar faces, and providing a distraction from the incident (2014a). Siblings and friends can provide social support and help maintain or regain everyday routine.

The second level of intervention according to Pfefferbaum et al. is through linking mental health services with schools, parents, extended families, and peers (Pfefferbaum et al., 2014a). Interventions in schools and play areas (for example, certified pet therapy animals in play areas) are important, as they provide children access to mental health services (HHS, SAMHSA, CMHS, 2004). School-based disaster mental health services are accessible and reduce negative misperceptions associated with the use of mental health services. Teachers and peers can provide crucial support at this level of intervention. For example, following the 9/11 terrorist attacks, it was reported that 22 percent of children in lower Manhattan received disaster-related counseling, and of that group, 58 percent received it from either a teacher or school psychologist (Pfefferbaum et al., 2014b).

For adolescents, playing an active role in the relief effort and helping others might enhance self-efficacy and allow them a sense of greater mastery of their situations (Comer et al., 2014; HHS, SAMHSA, CMHS, 2004; Pfefferbaum et al., 2014b; Pfefferbaum et al., 2014; Strom et al., 2016).

Over the long term, mental health intervention and treatment address the following areas:

- Understanding the child's unique experience of the trauma
- Screening youth for behavioral health problems
- Assisting the child in developing coping strategies
- Addressing grief

- Intervening with post-trauma difficulties such as a decline in school performance
- Identifying and redressing missed developmental opportunities and the effects of mass media

These areas include brief counseling and support groups, and cognitive behavioral therapy, among other types of therapy (Pfefferbaum et al., 2014a). As in the initial phase, the choice of intervention should depend on the child's psychology, disaster exposure and outcomes, family and social factors, and factors related to the intervention and context of delivery (Pfefferbaum et al., 2014a). The interventions can be delivered on the individual level or as a group intervention. They can be delivered in various sites including schools, health and mental health facilities, or community settings. Selecting the setting depends on the location and magnitude of the disaster; characteristics of the disaster community; availability of venues (schools, clinics); accessibility for families; and expertise of professionals (Pfefferbaum et al., 2014a).

MEDIA EXPOSURE AND MENTAL HEALTH FOLLOWING MASS VIOLENCE

Since the advent of the 24-hour television news cycle, exposure to mass violence and natural disasters through the media has been widespread (Neria & Sullivan, 2011). Evidence from reviewing existing epidemiological studies showed initial rather than extended increases in rates of PTSD symptoms among individuals indirectly exposed to mass trauma through sources such as the mass media (Neria & Sullivan, 2011). Exposure to graphic television images may exacerbate psychological symptoms in disaster survivors; in one study, the respondents who repeatedly viewed disaster images or videos had higher prevalence of PTSD (17.4 percent) and depression (14.7 percent) than those who did not (Ahern et al., 2002). Additionally, among the study participants who experienced personal loss, the risk of PTSD was still higher among those who watched television than those who did not (Ahern et al., 2002).

Another consideration with media exposure is that the media shows more interest in events of greater horror and psychological impact and that excessive and repeated media exposure puts people at risk for secondary traumatization (Alexander & Klein, 2005; HHS, SAMHSA, CMHS, 2004). Media coverage, especially at earlier stages, could also present a risk of violations of privacy of the survivors and their families (HHS, SAMHSA, CMHS, 2004; DOJ, OJP, OVC & American Red Cross, 2005).

Additionally, heightened exposure through mass media and news reports could lead to an extra sense of insecurity and alarm and increase initial rates of stress symptoms, according to a study investigating the effects of indirect exposure to mass trauma through the media (Neria & Sullivan, 2011).

Children have almost unrestricted access to worldwide media coverage of acts of terrorism, and this could threaten their mental and physical health due to the crude nature of the events and their coverage (Leiner et al., 2016). Terrorist acts have been documented throughout history, but in recent decades, media coverage has given greater attention to violent events (Leiner et al., 2016). In a study following the Boston Marathon bombings, repeated bombing-related media exposure was associated with higher acute stress than was direct exposure (Holman, Garfin, & Silver, 2014). In another study following the same attack, the degree of media exposure following the attack predicted the onset of PTSD symptoms in adolescents (Busso, McLaughlin, & Sheridan, 2014). On the other hand, the mass media can be useful in spreading informational briefings, providing information about available resources, letting survivors know when and where to seek help, and covering activities and events planned to support the survivors emotionally and through the provision of resources (Alexander & Klein, 2005).

INDIVIDUALS WITH PREEXISTING MENTAL HEALTH CONDITIONS AND MASS VIOLENCE

There is a common misconception among Americans that individuals with mental health issues are responsible for most incidents of mass violence. Research contradicts this idea. For example, research has found that most terrorists are not mentally ill, and most do not have violent or psychopathic personalities (Alexander & Klein, 2005). In a review article, Swanson et al. reported evidence showing that most people with serious mental illnesses are never violent towards others despite having an increased risk of self-harm and suicide (2015). Metzl and MacLeish argued that notions of mental illness that emerge in relation to mass shootings frequently reflect cultural stereotypes and anxieties about matters such as race and ethnicity, social class, and politics (2015).

RESILIENCE

As noted, Haglund et al. define resilience as "the ability to successfully adapt to stressors, maintaining psychological well-being in the face of adversity" (Haglund et al., 2007, p. 889). Resilience embodies the personal qualities that enable an individual to thrive in the face of adversity (Connor & Davidson, 2003). According to Goldmann and Galea, resilience does not indicate complete absence of any psychological symptoms following a traumatic event, but rather the ability to return to pre-trauma levels of functioning (2014).

According to Connor and Davidson, resilience is a measure of stress-coping ability that varies with context, age, gender, time, and culture, as well as with different types of adversity (2003). At the beginning point of bio-psycho-spiritual balance "homeostasis," an individual adapts body, mind, and spirit to current life circumstances. Internal and external stressors can affect the individual's ability to cope. In time, response to stressors is a reintegrative process, leading to one of four outcomes:

- The disruption represents an opportunity for growth and increased resilience, leading to a new, higher level of homeostasis.

- The individual returns to baseline homeostasis.

- The individual experiences recovery with loss, establishing a lower level of homeostasis.

- The individual moves into a dysfunctional state.

In a study to identify the trajectories of resilience in Israel, the authors looked at demographic predictors (Hobfoll et al., 2009). The article discussed predictors that distinguished the resistance trajectory from the chronic distress trajectory including being male, having a higher income, being secular (as opposed to being traditionally religious), and having higher education (more than high school). Expressing resilience does not automatically mean that people do not have any PTSD symptoms; in a study by Suarez, some of the pathways showed that resilience and posttraumatic responses were interrelated in the aftermath of violence in Peru (2013). The study population, however, showed higher functionality in the presence of resilience even while exhibiting PTSD symptoms.

CONCLUSION

Incidents of mass violence and terrorist attacks have an enormous behavioral health impact on most people, whether they are survivors, witnesses, or exposed through mass media. Most individuals will experience some immediate reactions, including fear, anxiety, and helplessness. Not all people who experience initial signs and symptoms of disorders and distress will develop long-term complications; rather, a small minority will. The task of behavioral health interventions in the immediate post-incident period is therefore to provide support (mental, social, and financial support), as well as reassurance and resources. A few months after that period of time, surveys need to be conducted to identify people at heightened risk of developing more severe and lasting reactions, such as PTSD, depression, sleep problems, and other mental health issues. Long-term interventions are usually provided through specialized mental health facilities; however, public links to these providers as well as helplines would still be invaluable. The most crucial point to emphasize here is that the reactions following mass violence as well as the interventions provided are not one size fits all—instead, they should be individualized and attuned to the culture of the people for whom they're offered. Finally, on one hand media exposure can be associated with increased stress and anxiety and risk of re-traumatization, but on the other, the media outreach can connect with a broad swath of the public and contribute to mental health healing through providing information about resources and opportunities for emotional support for survivors.

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