Building Resistance, Resilience, and Recovery in the Wake of School and Workplace Violence

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ABSTRACT

Incidents of school and workplace violence are rare but devastating events that can result in significant psychological consequences in communities. The majority of people in the United States will experience some type of traumatic event in their lifetime, but most of them will have no disruption or only transient disruption in functioning. They are either resistant to the development of symptoms or resilient, able to bounce back quickly. By enhancing resistance and promoting resilience, even fewer individuals may develop mental disorders. This article takes a closer look at the concepts of resistance, resilience, and recovery and the need for research on interventions that promote them, in the hope of applying the concepts and interventions to schools and the workplace. (*Disaster Med Public Health Preparedness.* 2007;1(Suppl 1):S33–S37)

Key Words: resilience, mental health, mass casualties, recovery

On April 16, 2007 the deadliest school shooting in US history occurred at Virginia Polytechnic Institute and State University (Virginia Tech). Thirty-three students and faculty members, including the shooter, were killed and at least 21 others were injured. The shootings occurred in 2 separate attacks: 2 people were killed in a dormitory 2 hours before the assailant shot 30 others and himself in a classroom. The shooter, Seung-Hui Cho, was a student at Virginia Tech.

Unfortunately this shooting is not the first of its kind. Shootings occurred at Columbine High School nearly 8 years to the day before the Virginia Tech massacre. The deadliest shooting incident before that at Virginia Tech was in 1966 at the University of Texas at Austin. Architectural engineering student Charles Whitman shot and killed between 13 and 16 people from the campus clock tower until he was gunned down by police.

Although these events are horrifying, lethal, and create an astonishing amount of publicity, such school shootings are rare. According to indicators of school crime and safety published by the US Department of Education for the 2004–2005 school year, there was about 1 homicide or suicide of a school age youth per 2 million students enrolled (*http://nces.ed.gov/programs/crimeindicators*). Thus, it is not the frequency of a school shooting that astonishes us but the loss of innocent life, compounded by the violated belief that schools are safe.

Another deemed-to-be-safe community structure where homicides are rare but the occurrence generates a great deal of media attention is the workplace. Worker-on-worker violence accounts for a minority of workplace homicides yet generates a large amount of media and public attention,[1] and has even entered everyday language with the term "going postal."[2] Again, it is not the frequency of such attacks that is disturbing but the violation of the sanctity of a place where we normally feel protected. Even if such occurrences are rare, they need to be addressed because the consequences for such individuals and organizations can be psychologically devastating and far-reaching, serving to undermine not only productivity but also one's overall sense of safety and security.

RESISTANCE AND RESILIENCE

Risk and Resilience

Although school and workplace shootings are relatively rare, almost two thirds of the population may experience a traumatic event during their lives.[3–8] The psychological consequences are often more devastating then the physical sequelae. Posttraumatic stress disorder (PTSD) is the most common psychological disorder studied after a traumatic event.[9,10] The prevalence of lifetime trauma in men is 60.2%, and 8.1% of them develop PTSD. In women there is

a 51.2% lifetime exposure to trauma with a PTSD rate of 20.4%.[6]

There is awareness that despite exposure to a disaster most people recover quickly or experience no disruption in their functioning and demonstrate resilience to the negative effects of a disaster. Resilience refers to the ability of an individual, a group, an organization, or even an entire population to rapidly and effectively rebound from psychological perturbations associated with critical incidents, terrorism, and even mass disasters.

Initial studies on resilience focused on the premature death of a spouse at midlife.[11] Most people experienced moderate symptoms and difficulty in functioning but managed to struggle through for a period of 1 to 2 years and gradually returned to their baseline functioning level; however, there was a group of people that could be clearly distinguished from the other group by having a stable low pattern of distress. They were able to go on with their lives with little disruption—in other words, they were resilient.[11] Bonanno et al showed that resilient individuals were rated by their friends as better adjusted before the loss than the more symptomatic bereaved individuals.[12] They were also able to identify patterns of resilience in the people exposed to the September 11, 2001 World Trade Center disaster.[13]

It also appears that resilient people are better able to take comfort from talking or thinking about their spouse, have fewer regrets about the things they should or should not have done while that person was alive, and were less likely to try to understand or make sense out of why the spouse died.[14] Being resilient does not mean that a person does not experience emotional distress; he or she is simply able to rebound quickly with little effect on ability to function.

There are also data to suggest that people prone to anxiety disorders score higher on the neuroticism (or instability) dimension on valid personality tests. Neuroticism is defined as a propensity to experience negative emotional states or to be emotionally unstable. These are often people who are prone to psychological distress, unrealistic ideas, excessive cravings or urges, and maladaptive coping responses. One study showed that high neuroticism at age 19 predicted onset of anxiety by age 36.[15] Another study in New Zealand showed through diagnostic interview that people at age 18 that had high negative emotionality, or neuroticism, were more likely to have an anxiety disorders at age 21.[16] A study looked at 572 United Nations peacekeepers in the former Yugoslavia. Personality characteristics were obtained before deployment with the Dutch version of the Minnesota Multiphasic Personality Inventory and a post–self-rating inventory for PTSD was given after deployment. Personality traits related to neuroticism such as negativism was second only to traumatic event exposure in predicting PTSD symptoms.[17] In a study of severe burn victims who were administered the NEO-Personality Inventory Structured Clinical Interview for *DSM-III-R* (SCID) at hospital discharge and readministered the SCID at 4 and 12 months later, showed that higher baseline neuroticism predicted onset of PTSD in the following year.[18] These studies suggest that individuals who rate high on neuroticism may be more vulnerable to the consequences of trauma and therefore less resilient.

Several other risk factors for PTSD have been identified. People who have had prior exposure to traumatic events are at higher risk for PTSD.[19] Individuals with preexisting psychiatric disorders, particularly anxiety disorders,[19] and people with a lack of social support have also been shown to have higher rates of PTSD.[19–21]

Resistance

The term resilience refers to "bouncing back" from traumatic experiences, but it is also useful to consider the term resistance. Resistance refers to the ability of an individual, a group, an organization, or even an entire population to withstand manifestations of clinical distress, impairment, or dysfunction associated with critical incidents, terrorism, and even mass disasters. Resistance may be thought of as a form of psychological immunity to distress and dysfunction, analogous to vaccination. The notion of creating resistance represents a proactive step in emergency mental health and is a preincident intervention. One study looked at 35 police officers who were followed up 3 years after they were first assessed following their involvement in the retrieval and identification of human remains after a major disaster. Most of these officers were free of signs of psychiatric morbidity. Organizational and managerial practices appear to be powerful antidotes to adverse posttraumatic reactions.[22] The officers were able to resist manifestations of the trauma. Resistance can also be achieved by having in place policies that outline steps and methods to deal with critical events before they occur.

It is important that proactive steps be taken to prepare ourselves and our communities for the possibility of unfortunate events. Enhancing resistance and promoting resilience of the target populations may achieve this goal. Historically, this element of disaster mental health response has been conspicuous in its absence. More specifically, disaster mental health services have been almost exclusively reactionary in nature.

Potential Interventions

Resistance and resilience may be facilitated by the following 4 empirically supported strategies. The first is providing realistic preparation. Setting appropriate expectations, developing stress management and coping skills, and providing realistic preincident training may serve to foster stress resistance.[23–27]

The second strategy is fomenting group cohesion and social support. Social support has been shown to be a buffer against stress.[28] The creation of group cohesion, with an underlying infrastructure for social support, may be useful. An essential element of fostering cohesion and support, we believe, will be

effective risk communications. Risk communications should be designed to provide these essential elements: information (and rumor deterrence), reassurance, direction, motivation, and a sense of connectedness.

The third strategy is fostering positive cognitions. Cognitive appraisals appear to be key determinants of stress[29] and trauma.[30] Positive cognitions seem to deter excessive stress and effect resilience.[25,31–33] Positive cognitions may include positive memories of those lost in war/terrorism, and/or identification with a noble motive, such as religion or nationalism.

The fourth strategy is building self-efficacy and hardiness. Self-efficacy is the belief in one's ability to organize and execute the courses of action required to achieve necessary and desired goals.[34] Hardiness is characterized by the belief in one's own agency or self-efficacy (ie, the ability to exert control over relevant life events), the tendency to see stressful events as "challenges" to be overcome and opportunities for growth, and a strong commitment and sense of purpose.[35]

As an example of facilitating resilience, Virginia Tech held a convocation on April 17, 2007 in the college stadium and via simulcast in a nearby stadium. Members of the faculty, religious community, Virginia governor Tim Kaine, and President George W. Bush spoke to the audience. This technique is similar to what was done by the New York Police Department in the wake of the events of September 11, 2001. The Port Authority Police of New York and New Jersey used a much larger and longer (2 days) variation after the terrorist attacks of September 11. These assemblies were held in the hope of helping the community become more resilient in the face of the tragedy.

The technique described above is essentially the 4-phase group crisis intervention termed crisis management briefing (CMB), which is used to create resilience in a community.[36] CMB is designed to be used with "groups" of survivors who may have been directly or indirectly affected by an incident. Such groups may range in size from 10 to more than 300 individuals at a time. The CMB may be thought of as a town meeting. The intervention is designed to be highly efficient, taking between 45 and 75 minutes to implement. CMB may be implemented in schools, corporations, and community settings.[37,38]

The first phase of CMB consists of bringing together a group of individuals who have experienced a common crisis. In response to a school crisis, for example, 1 grade at a time could be addressed by assembling in the auditorium. In response to a workplace crisis, a company meeting room could be used or a room could be rented at a local hotel or commercial meeting facility. This act of assembly is the first step in reestablishing the sense of community that is so imperative to the recovery and rebuilding process.[39]

Once the group has been assembled, the next intervention component is to have the most appropriate and credible authorities explain the facts of the crisis event. In many instances, a highly respected spokesperson lends credibility to the message and the belief that the actions and support will be effective. Objective and credible information should serve to control destructive rumors, reduce anticipatory anxiety, and return a sense of control to victims.

The next step is to have credible health care professionals discuss the most common reactions that are relevant to the particular crisis event. Common signs and symptoms that should be addressed are grief, anger, stress, survivor guilt, and even responsibility guilt among survivors, friends, and others.

The final component of CMB is to address personal coping and self-care strategies that may be of value in mitigating the distressing reactions to the crisis event. Community and organizational resources available to facilitate recovery should also be introduced. Questions should be actively entertained, as appropriate. Each group participant should leave the meeting with a reference sheet that briefly describes common signs and symptoms, common stress management techniques, and local professional resources (with contact names and telephone numbers).

After a massive traumatic event there is an almost inevitable tendency for people to engage in large group processes like the convocation at Virginia Tech. It must be noted, however, that techniques such as CMB have not been tested, nor have most postdisaster interventions. Interventions such as these do not easily lend themselves to control trials.

RECOVERY

Recovery must be considered separate from resilience.[40] Recovery refers to the ability of an individual, a group, an organization, or even an entire population to literally recover their adaptability and function, both psychologically and behaviorally, in the wake of significant clinical distress, impairment, or dysfunction subsequent to critical incidents such terrorism, acts of violence, and even mass disasters. Similar to building resistance and resiliency, the essential building block to recovery is an individual's ability in "regaining control over their emotional responses and place the trauma in the larger perspective of their lives as something that happened but that can be expected to not recur if the individual is able to retake charge of his or her life."[41]

To enhance the recovery process, several techniques have proven beneficial. Cognitive-behavioral therapy, a technique that uses behavioral and verbal techniques to identify and correct problematic thinking patterns that are at the root of dysfunctional behavior, has been shown to aid trauma victims.[42–46] Prolonged exposure training, a set of techniques that help a patient confront his or her feared objects, situation, memories, and images (eg, desensitization, flooding), and stress inoculation therapy, a technique that enhances coping skills, have also been proven beneficial.[47–49] Although all of these are effective, several studies suggest that prolonged exposure therapy is superior.[47,48]

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AN OVERARCHING FRAMEWORK

One model that has been proposed that uses the concepts described above is a proactive outcome-guided approach model of resistance, resilience and recovery developed at Johns Hopkins University. By building resistance in a community you protect and help shield the community from the some of the potential consequences of disasters. Specific proactive policies and procedures can serve to enhance resistance and may even serve to divert potential events. In the unfortunate circumstance an event does occur a resilience model that can be quickly activated helps individuals rebound and begin the process of community healing and return to normality. Finally, CBT, stress inoculation, and prolonged exposure therapy are valuable tools leading to recovery for individuals in need of specific evaluation and treatment. Although there is little empirical evidence to directly support this model, it is based on sound fundamentals and the research described in this article. Given the importance placed on resilience by the field, there is a need to develop and test models to enhance resilience. The triad "resistance, resilience, and recovery" is not only a conceptual framework that may assist in advancing the field beyond a univariate disaster mental health response but it may also lend itself more readily to the type of evidence-based research that is so desperately needed in the field of disaster mental health.

CONCLUSIONS

Given that a majority of individuals will experience a traumatic event in their lifetime, fostering resistance, resilience, and recovery in the community is of vital importance. There is substantial evidence that psychological intervention may reduce the need for more intensive psychological services,[50,51] may mitigate acute distress[52–55] and may reduce alcohol use,[56] although this is still controversial.[57] Developing testable models and strategies to enhance resistance, resilience, and recovery would benefit the community and advance the field of disaster medicine. The application of these models to schools and the workplace seems essential.

Having an established policy before a crisis occurs cannot possibly address all of the unforeseen needs of individuals and of a population in the days, weeks, and months that follow a specific incident, but psychological preparedness needs to have a place alongside all of the other important considerations (eg, legal, security, ethics) discussed in this special issue of *Disaster Medicine and Public Health Preparedness*. Events like the Columbine High School and Virginia Tech shootings accentuate the importance of having in place a model for disaster preparedness. It may also have the indirect effect of making parents, students, and faculty feel safer about attending a university in an open society or help individuals to feel safer at work.

The impact and psychological consequences of school- and work-related violence is far-reaching and affects the whole community. This poses an important opportunity for mental health providers to have an impact on the community at large, help change policy, reduce stigma, and demonstrate the value of a team- and population-based approach to psychological care.

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