Resilience and Vulnerability in Coping with Stress and Terrorism

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Israeli civilians have been exposed to intense and ongoing terrorism for many years. Exposure to a potentially traumatic event, like a terror attack, disrupts the homeostatic resting state, triggering a series of responses intended to enable the organism to adjust to the altered condition. These responses are generally adaptive in the short run, but can lead to a state of chronic dysregulation and psycho-physiological imbalance. Studies on the impact of war, political violence and terrorism around the world have revealed a range of detrimental mental consequences, including heightened anxiety, depression, reduced sense of safety, post-traumatic stress symptoms, and increased use of tobacco, alcohol, drugs and psychotropic medications.

Studies of the impact of September 11 (the 2001 terrorist attacks in the United States) found that both the people who experienced the attack directly and those who experienced it indirectly, through the media, showed elevated levels of distress, a lowered sense of security, and subsequent pathological reactions such as PTSD and depression [1]. These stress reactions, in their severe form, can lead to acute stress disorder and chronic PTSD in keeping with the time-span they occupy.

The immediate response to the traumatic event in individuals who may develop ASD or PTSD involves intense fear, helplessness or horror. ASD is experienced during or immediately after the trauma, lasts for at least 2 days, and either resolves within 4 weeks or the diagnosis has to be adjusted. A diagnosis of PTSD may be appropriate provided the full criteria for PTSD are met [2]. Of individuals who respond to the trauma with intense fear or horror 15–35% will eventually develop a significant degree of dysfunction and distress [3], namely PTSD, for a considerable length of time. The PTSD symptoms can be grouped into three main clusters. The first is persistent re-experience of the traumatic event, such as recurrent dreams and flashbacks. The second is persistent avoidance of internal or external cues associated with the trauma, such as avoiding thoughts, avoiding activities, diminished interest, detachment, restricted affect, and sense of foreshortened future. The third is increased arousal, which is manifested as difficulty in concentrating, hypervigilance, and exaggerated startle response [2].

The marked discrepancy between the proportion of the general population exposed to traumatic events and the proportion that ultimately fulfills the criteria for PTSD is a challenging aspect of the study of stress-related disorders. Identification of factors that increase vulnerability of individuals and factors that increase resilience may have important implications in public health.

In this issue of *IMAJ*, Amital and colleagues [4] report on the short-term emotional effects and disturbance in daily life 2 days after a suicide bomber's attack in the southern Israeli city of Dimona. A higher prevalence of stress and fear and a lower prevalence of joy were reported in the population of Dimona compared to the general population in Israel. Subjects who reported having low resilience had a higher prevalence of stress, fear, disturbances in daily life activities, and changes in leisure activities than subjects who reported having high resilience.

Recent studies have addressed the characteristics of resilience, defined by Bonanno [5] as "the ability…to maintain a relatively stable, healthy level of psychological and physical functioning in the face of highly disruptive events." This concept is particularly important in view of the findings that following a range of traumatic events, a large percentage of people (40–78.2%) exposed to these events are either entirely or almost entirely symptom free [1,6,7].

Moscardino et al. [8] investigated the influence of socio-contextual variables on depressive symptoms in 158 adolescent survivors of the 2004 terrorist attack in Balsan, Russia. Over 1300 children and adults were taken hostage by a group of 32 terrorists at the traditional celebration for the opening school day. Hundreds of young children spent 57 hours sitting in an overcrowded gymnasium wired with explosives. They witnessed the beating and murder of family members, friends and teachers. On the third day the hostage crisis ended in extreme violence that caused the death of 329 persons and the injury of many hundreds. The survivors were assessed 18 months after the traumatic event for depressive symptoms,

PTSD = post-traumatic stress disorder

ASD = acute stress disorder

social support, sense of community and collectivism. The findings suggest that social support and community connectedness may serve as protective resources and were associated with lower rates of depressive symptoms.

Kaplan and co-authors [9] investigated stress-related responses after 3 years of exposure to terror (during 2003 and 2004) in three different types of population centers in Israel: a suburb of Tel Aviv, a settlement in the West Bank (Kiryat Arba) and the Gush Katif settlement cluster in the Gaza Strip. Symptoms of acute stress and chronic (post-traumatic) stress as well as symptoms of general psychopathology and distress were assessed. The inhabitants of Gush Katif, despite first-hand daily exposure to violent attacks, reported the fewest and least severe symptoms of stress-related complaints, the least sense of personal threat, and the highest level of functioning of all three samples. The most severely symptomatic and functionally compromised were the inhabitants of the Tel Aviv suburb, who were the least frequently and least directly affected by exposure to violent attacks. Due to the exclusive religiousness of the Gush Katif population, the data were reassessed according to religiousness. The religious inhabitants of Kiryat Arba had almost the same symptom profile as the Gush Katif population, whereas secular inhabitants of Kiryat Arba reported faring worse than any of the other populations. The authors conclude that religiousness combined with common ideological convictions and social cohesion is associated with substantially higher resilience as compared to the secular metropolitan urban populations.

Another recent Israeli study by Dekel and Nuttman-Swartz [10] yielded similar findings. Their study assessed a sample of 134 residents, 67 living in two kibbutzim and the other 67 living in the development town Sderot. Both groups have been the target of Qassam rocket attacks. The development town residents reported more post-traumatic symptoms. It is suggested that the kibbutz ideology and communal lifestyle provide a measure of protection against stress.

Similar findings were shown recently by Gelkopf and colleagues [11] who compared the responses to 7 years of continuous rocket fire of residents from the city Sderot, the rural community Otef Aza, and the non-exposed population of Ofakim. As expected, the residents of Otef Aza evidenced little symptomatology. In contrast, PTS, distress, functional impairment and health care utilization were substantially higher in the highly exposed city of Sderot than in the other three communities.

Taking all these findings together, sense of belonging appears to be an important characteristic of resilience. Sense of belonging refers to people's feeling of being part of a collective, whether the neighborhood, the immediate community, the nation, or any other group or place. It is characterized by mutual concern, connection, community loyalty, and trust that one's personal needs will be fulfilled by means of commitment to the group as a whole. In the Yom Kippur War in 1973, there were lower rates of combat stress in army units that had high levels of solidarity and cohesion than in those in which the soldiers' sense of belonging was lower [12].

Lack of resources was associated with increased vulnerability among city residents. Predictors of increased vulnerability to adverse psychological effects of terror found across studies included being female, older age, Arab ethnicity, immigrant status, having lower education level, direct exposure, prior experience of highly stressful events, suffering economic loss, proximity to the disaster, and lacking social support [11,13,14].

It is of note that two very recent Israeli studies addressed the possible prevention of PTSD by early treatment. Cognitive psychotherapy and prolonged exposure therapy, but not the antidepressant escitalopram, effectively prevented chronic PTSD in recent survivors [15]. A high dose of hydrocortisone (100–140 mg) immediately after trauma may also alter the trajectory of PTSD [16].

In summary, a preventive approach towards terror-exposed communities should focus on helping the vulnerable groups such as disadvantaged city populations who lack economic and social support. Resiliency can be enhanced by strengthening community solidarity and confidence in the army and in the national leadership of the country.

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