The Ripple Effect of the Toll of Terror

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The events of September 11, 2001 heralded the beginning of a new era. As a result of terror, the world has had to become acquainted with the onslaught of a new set of conditions in a variety of domains with crucial influences on mindset and way of life. This change extended from the governmental and military arena to fundamental aspects of civilian life, most notably travel but also cultural and economic aspects of everyday life. While international terror always existed, its scope and pervasiveness were now forever changed, with long-lasting repercussions reverberating through many facets of daily existence. Although the first wave of interest, need and immediate care following any traumatic event is channeled into management of the injured and dead, subsequent efforts relate to the management of short-term and long-term psychological effects. This is of special importance in Israel, a country that has experienced many traumatic events (the Holocaust, wars, chronic terror) and thus at increased risk for pathogenicity resulting from further events [1]. It has been suggested that there are three types of major trauma experienced by society that may lead to mental disorder. These may be classified into natural disasters (e.g., floods), technological disasters (chemical accidents), and mass violence (terrorism). It is the latter, which results in widespread property damage, injuries and death, that is particularly associated with the risk of severe, chronic and pervasive psychological consequences [2]. For example, in the aftermath of the World Trade Center terror attack, rates of post-traumatic stress disorder 2 months after the event were quoted as 20% for those in the immediate vicinity of the attack [3] and 17% for those outside New York City [4]. Moreover, North [5] reported that the rate of PTSD 6 months after the Okalahoma City bombing among those directly exposed was 34%.

While investigations into post-trauma effects often concentrate on the construct of PTSD, other disorders – co-morbid or otherwise – are frequently present though often overlooked, and PTSD may constitute only a fraction of post-traumatic psychiatric related sequelae. These may include depression, anxiety, psychosis exacerbation, substance use disorders and psychosocial resource loss [6]. In addition to long-term morbidity experienced by those with psychiatric effects of the trauma, another more recent consideration is the long-term physical effects of the trauma possibly mediated through post-traumatic stress. This may include increased cardiac morbidity [7]. Furthermore, it has been well described that the effects of terror are not necessarily limited to those in close proximity. Rather, effects may be considerably widespread without the necessity of having been present at the site of any major terror event or without any prior familiarity with victims [8,9]. These effects may be particularly important with regard to the young and other personality and temperament-associated vulnerabilities. For example, several studies have reported a greater psychological impact of trauma in children compared to adults [10,11]. Other high risk populations may include the elderly and specific ethnic minorities [12] as well as the psychiatrically ill [13]. Other factors that may moderate manifestation of PTSD symptomatology over time include observations from an interesting report in the current issue of IMAJ. Gidron et al. [14] contend that perceived and attributed control, as well as gender differences, are associated with PTSD-like symptoms and suggest that these findings could have potential implications for prevention of such symptom expression. A further consideration is the potential late development of post-traumatic symptomatology which may not be apparent for months or even years after traumatic events [15,16]. Perhaps most importantly, late or extended effects of terror may be noted in physically injured individuals in whom post-traumatic psychological effects may be overlooked in the attempt to deal with more acute and potentially life-threatening or physically disabling injuries. Delayed consequences of psychological trauma, in addition to social cost and chronic physical rehabilitation needs, may only take effect at a stage when various services are less available. A further consideration is the mental health impact on rescue workers and mental healthcare providers attending to those who were injured – physically during and mentally following traumatic events. While research on the subject is limited [13], it is expected that the passage of time and the development of more sophisticated investigation will shed more light. These, to mention just a few, are the long-term "ripple" effects less considered by the media and general public.

More research is required on the nature of various coping mechanisms considered conducive to healthy adaptation following severe traumatic episodes as well as on how to protect people from

PTSD = post-traumatic stress disorder.

psychological effects after major terror events [1,9]. These efforts may include, but are not necessarily limited to, analysis of resilience, successful early intervention, and exploration of the value of social cohesion, etc. As the world adjusts to a new age in which terror is very much a reality, and which by definition is designed for maximal psychological effect, the medical profession in general, and the mental health field in particular, needs to respond and plan accordingly with regard to both adequate sensitivity and resource allocation. The predicted future of increased terror with all its consequences – from its terrifying aftermath and ripple effect into multiple domains – has arrived. An appropriate response by the medical community to the complex phenomenon of medical and psychological post-traumatic reaction is in order and surely demanded.

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