

Background: Climate change is leading to a wide range of adverse impacts on the environment, which in turn are adversely impacting human health. One of the well-documented impacts is the increased occurrence and severity of natural disaster events, including bio events. In the early stages of bio events, prior to the availability of effective pharmacologic countermeasures, the swift mobilization of the public health and health care sectors is critical to stem the spread of disease. The general public also plays a crucial role – their cooperation is needed with respect to adherence with emergency public health measures that might be recommended or even required. However, in the US, the public is largely unfamiliar with the measures (eg, social distancing, quarantine, etc.) that might be needed during a bio event. Most of our information on this comes from limited public opinion polls and descriptive studies conducted in non-US samples (mainly Asian). Further, our knowledge of the factors that influence adherence in US community members remains largely unknown.

Methods: We recently conducted a literature review of published US studies to assess the role of psychosocial and other factors on adherence to emergency public health measures.

Results: Findings indicate that most studies examined only one (typically vaccination) adherence behavior and few assessed the relationship between adherence behaviors and psychosocial influences. Testing of disaster preparedness and response theory for predicting behavior of the general public was not rigorous and only focused on one or two behavioral constructs, most typically, risk perception.

Conclusion: Theoretically driven studies on adherence in the US would increase our understanding on this issue and improve our ability to implement effective public health and risk communication strategies.

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Patterns of Victimization in the Perception of Threat and Preparedness of the Israeli Public to Armed Conflicts

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Study/Objective: We hypothesized that, concerning the threat of armed conflicts, the Israeli public demonstrate unique patterns of threat perception, characteristic of a victimized population (ie, populations that are chronically exposed to a given threat).

Background: Emergency preparedness is a key factor in generating public resilience. Scholars agree that civilian populations that are more prepared for emergencies also react better in the face of one, and are therefore less vulnerable to their adverse effects. However, according to a nation-wide survey, more than 50% of the Israeli population have complied with one-half or less of the civil defense recommendations for household adjustment to armed conflicts. Almost no correlation was found between preparedness behavior and its reported correlates in the literature, such as perception of likelihood or severity of the threat.

Methods: We analyzed the results of several studies that we performed over the course of 2013–2016 for indications of victimization in the Israeli public's perception of the threat of armed conflicts. The analysis was done in comparison to the literature description of the victimization phenomenon.

Results: The findings suggest that the characteristics of the Israeli preparedness behavior resemble that of a victimized population. The specific characteristics of a victimized population with regards to preparedness to armed conflicts, as manifested in the Israeli population, are: (a) distorted perception of the threat, (b) reduced threat intrusiveness despite (perhaps due to) the chronic exposure to the threat, and (c) prevalence of denial-based coping mechanisms, procrastination in preparedness behavior, and habituation effect to the threat.

Conclusion: The data obtained thus far support our hypothesis of victimization. Under such circumstances, most known behavioral models become null and changing behavior proves difficult. Further studies are needed in order to promote readiness and make resilience plans more effective in achieving their goals.

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Immediate Behavioral Response During an Earthquake and the Risk of Injury and Death: A Simulation Based Study

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Study/Objective: The aim of this study was to acquire insights into the relationship between human behavior and earthquake vulnerability, in terms of the risk of injury and death.

Background: The use of casualty modeling in order to estimate the number of expected casualties in future earthquakes for planning and management purposes is well established. Despite its great importance, casualty modeling is currently based exclusively on damage to the built environment and fails to consider additional factors that may influence the number of casualties in a given event. The immediate behavioral responses of residents during an earthquake, for example, evacuating a collapsing building, may have a crucial role in this regard.

Methods: In an innovative approach, the present study has integrated behavioral traits of residents in a high-risk area in northern Israel into a well-known casualty estimation model. The expected behavioral characteristics of residents during an earthquake (namely fleeing collapsing buildings) in city sectors with different socioeconomic rankings were assessed using a designated survey and were applied into the casualty estimation process. In order to test the sensitivity of the behavioral factor, 12 synthetic earthquake scenarios were designed.

Results: The simulation results demonstrated a clear link between expected behavior and casualty projections. Taking into account behavioral traits of residents altered both the total number of expected casualties and the composition of injuries. Households with low socioeconomic status were found to be more vulnerable, in terms of risk of injury and death, compared with those ranked higher.

Conclusion: The results suggest that loss-estimation models that do not take behavioral factors into account may overestimate projected casualty numbers. The present study shows the importance of raising public awareness regarding proper behavior prior to and during the event, which can help increase resilience of communities, mitigate risks and losses, and ultimately save lives.

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Development of a Disaster Mental Health Service Model and Expert Survey

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Study/Objective: The study objective is to understand the adequate development of a disaster mental health service model, and to find out the adequate relationship between disaster mental health services and disaster medical services.

Background: A disaster mental health service and organization system were activated after Sewol ferry ship sinking disaster in 2014 in Korea, the vision and planning for continuing development of disaster mental health supporting systems are still inadequate and lacking. So it is required to develop the method of connecting disaster mental health services and disaster medical services.

Methods: Researchers made and distributed the questionnaires for experts, including disaster mental health experts and disaster health medical experts. The answers to questionnaires were collected. Additionally, expert interviews were done for searching out the methods of a maturing disaster health medical system, and activating the connection between disaster mental health services and disaster medical services. Delphi analysis and AHP (Analytic Hierarchy Process) were used for questionnaire analysis.

Results: According to the questionnaire answers, developing a DPAT (Disaster Psychiatric Assistant Team), increased the number of existing certificates, and regularly, repeated training programs are necessary. The role should be stabilization and counseling in acute stages. The most important part of a multiple professional network was disaster medical experts.

Conclusion: According to the experts' opinions, DPAT should be prepared, the number of disaster health supporting personnel should be increased, and regular repeated training should be done for them.

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Forced Internal Displacement during Colombia's Five Decades of Armed Conflict: Trauma, Loss, and Psychopathology

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Study/Objective: Examine the high prevalence rates of symptom elevations for common mental disorders, by phase of displacement for Internally Displaced Persons (IDPs) in Colombia.

Background: Colombia is currently transitioning to post-conflict status, following 52 years of continuous armed conflict and widespread population exposure to violence from multiple sources. This insurgency is one of the world's most prolonged humanitarian emergencies. As officially designated "victims of the armed conflict," Colombia's 6.3 million IDPs have been exposed to trauma and loss throughout all phases of forced migration. The Outreach, Screening, and Intervention for Trauma (OSITA) pilot project used a three-tiered, stepped-care mental health intervention model for women IDPs who reside in Bogotá.

Methods: At baseline, the OSITA intervention assessed the study participants for exposures to 12 pre-, 18 peri-, and 13 post-displacement trauma and loss stressors. Using internationally standardized scales, the women were screened for three Common Mental Disorders (CMDs): Major Depressive Disorder (MDD), Generalized Anxiety Disorder (GAD), and Post Traumatic Stress Disorder (PTSD). Participants with symptom elevations were referred to Interpersonal Psychotherapy/Counseling (IPT/IPC).

Results: Data analysis examined baseline CMD symptom elevations in relation to exposures for 279 participants. On average, women IDPs endorsed 24 of 43 trauma and loss exposures. At enrollment, 51% had clinically significant symptom elevations for MDD; 41% for GAD; and 39% for PTSD. Fully 63% had at least one elevated scale including 26% who had elevations on all three clinical measures. Furthermore, 25% expressed thought or intention to self-harm ("suicidal risk"). Preliminary analysis of intervention effectiveness is underway and appear to demonstrate sharp declines in symptom levels.

Conclusion: In this highly-traumatized population, exposures to violence, armed conflict, and forced migration were universally experienced and strongly related to high prevalence rates of psychopathology. IPT/IPC results suggest that this intervention is effective and efficacious for this population.

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Disaster Management and Farm Family Mental Health: The BSE Crisis as a Case Study

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Study/Objective: To examine the evidence of depression among farmers four years after the bovine spongiform encephalopathy (BSE) disaster in Canada and report on implications for future disaster management strategies.

Background: As we approach the 14th anniversary of the 2003 BSE outbreak, evidence regarding its implications on the health of farmers is lacking. With disasters often linked to poor mental health, the BSE outbreak can be conceptualized as a disaster in slow motion. Systemic factors impacting farmer mental health are different from those affecting their non-farming rural neighbors. Therefore, disaster management strategies must