

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.