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.

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 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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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

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