

IAAP Interview- Professor James Michael Shultz

1. As an expert on disaster health, you are the creator of a new methodology related to trauma which is called “trauma signature”. Can you explain how this new approach works and what is it used for?

Trauma signature (TSIG) analysis is an evidence-based method that examines the interrelationship between population exposure to a disaster, extreme event, or complex emergency and the interconnected physical and psychological consequences for the purpose of providing timely, actionable guidance for effective mental health and psychosocial support (MHPSS) that is organically tailored and targeted to the defining features of the event (Shultz & Neria 2013).

Each disaster has distinguishing characteristics, a singular “signature.” This is important to recognize because the particular constellation of psychological risk factors that the disaster-affected community will experience is uniquely defined by the nature of the disaster event. MHPSS response needs to be adapted to the situation and to the stressors.

TSIG was initially developed in the process of conducting a detailed case study of the prominent psychological risk factors during the 2010 Haiti earthquake (Shultz et al. 2011). During that event, there was widespread population exposure to earthquake hazards, losses, and life changes – known risk factors for psychological distress and psychopathology. Also, many international disaster responders experienced potentially traumatizing exposures. However, the MHPSS response was initially non-existent for months and later, psychological support was feeble and inconsistently implemented. As we examined the gaps in MHPSS support, it occurred to us that it would be optimal to be able to conduct a rapid assessment of psychosocial needs in the immediate aftermath of a disaster in a manner that could guide the MHPSS response.

To this point, TSIG has been used to conduct a series of retrospective case studies. In the short-term future, several researchers are interested in mapping TSIG onto to the Inter-Agency Standing Committee guidelines for psychosocial support in emergency settings. Others want to strengthen the focus on resilience. The ultimate goal is to create a real-time TSIG analysis capability that will assess incoming data from an evolving disaster and generate guidance for responder “force protection” and for the initial MHPSS response for disaster survivors. Hopefully this capability can be staffed and coordinated with international disaster response operations, perhaps in conjunction with the World Health Organization.

2. What kind of traumatic events are appropriated for trauma signature?

To date, TSIG case studies have been conducted on large “mega-disaster” events that have significantly impacted large populations and have generated a national or international disaster response. These events frequently are of such scale that they are designated as complex emergencies and/or humanitarian crises. As an important real-time data source, events of this nature are often tracked on ReliefWeb where regular situation reports from multiple sources - including the United Nations Office for the Coordination of Humanitarian Assistance (OCHA) - can be retrieved and used in the analysis.

As part of doing the TSIG analysis, a “trauma signature summary” is developed that ranks the disaster event on an “exposure severity” scale for a range of psychological risk factors. So far the severity ratings are based on absolute numbers of deaths, injuries, affected persons, displaced persons and other measures regarding costs and needs for emergency supplies. These absolute numbers can be compared to data on more than a century of major disaster events compiled by the Centre for Research on the Epidemiology of Disasters (CRED), Brussels, Belgium. We do not yet have the data to examine severity in terms of rates, which would be desirable epidemiologically; hopefully this will be a future enhancement that will allow TSIG analysis of smaller scale disaster events.

3. What kind of traumatic events have you tested with trauma signature methodology?

2010 Haiti Earthquake (Shultz et al. 2011)

2010 *Deepwater Horizon* oil spill (Shultz et al. in review)

2011 regional flooding in the U.S. Midwest (Shultz et al. 2013a)

2011 Great East Japan Disaster (Shultz et al. 2013b)

2012 Superstorm Sandy (Neria & Shultz 2012)

2014/2015 West Africa Ebola outbreak (Shultz, Baingana, & Neria in review)

Decades of conflict in Colombia: Conflict-displaced persons (Shultz et al. 2014)

4. Which are the main results you have obtained with trauma signature?

Each disaster is unique. That is the basis for conducting trauma signature analysis. MHPSS response can be tailored to the situation and better targeted to meet the novel psychosocial needs of the disaster-affected population. When the TSIG summary tables – that enumerate major psychological risk factors that are common to many disasters and rank the “exposure severity” to each of these risks – are compared, it is clear that each disaster has a novel constellation of psychological risks.

5. Is there any variable specially related to a specific type of trauma? Under your point of view, which are the most important variables? Do external variables have more impact in people than internal ones? Or is it just on the contrary?

TSIG analysis is grounded on the Disaster Ecology Model. That model focuses on three types of exposures: to hazards, losses, and life changes. These exposures are psychological stressors known to elevate risks for distress and common mental disorders in persons exposed to disasters. So the ability to 1) define the unique and distinguishing features of the disaster event – the “signature” descriptors, and 2) comprehensively document the exposures to hazards, losses, and life changes by disaster phases serve as the primary variables upon which the TSIG analysis is based. The resulting description can be used to prepare responders for what to expect for the purpose of their own “force protection” and to create a data-based approach to organizing the MHPSS response.

6. How much predictive power do you think this tool of trauma signature is going to have in the future?

Based on the case studies conducted to date, TSIG analysis should have considerable predictive power at the level of the disaster-affected population. There has been recent discussion about whether TSIG can be “beamed down” from a population to an individual level of application; currently it is too early to know this.

7. What type of clinical implications will trauma signature have?

TSIG is currently a tool designed for community-level application. However, if TSIG analyses are conducted during impact or immediately post-disaster, and MHPSS support is timely and focused, there should be detectable improvements in population mental health. By extension, this would be based on having more individuals maintaining or regaining function, exhibiting resilience, and recovering from disaster-related common mental disorders.



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