

ORIGINAL RESEARCHES

POSTTRAUMATIC SYMPTOMATOLOGY OF A RURAL FILIPINO POPULATION IN MERIDA, LEYTE IN THE WAKE OF SUPER TYPHOON YOLANDA (HAIYAN)

Rodelen C. Paccial, MD, MPH, Mark Philip R. Rivera, MD, Bernard B. Argamosa, MD



ABSTRACT

OBJECTIVES: The goal of the research was to provide local data on the varieties of posttraumatic symptomatology among survivors of Super typhoon Haiyan in a rural community in Merida, Leyte. **METHODOLOGY:** This is a single point non-invasive study of Filipino survivors of typhoon Yolanda who came from Merida, Leyte, involving administration of a symptom checklist i.e. Post Traumatic Stress Disorder Checklist- Civilian version (PCL-C) to assess the occurrence of posttraumatic symptoms in the selected group of volunteers with no history of psychiatric illness. The PCL-C was given as part of a community screening for symptoms of PTSD conducted three months after the typhoon. There were two ways of scoring the PTSD Checklist- Civilian version (PCL-C) - either by computing for the total severity score or by scoring each response category just like one would in the Diagnostic and Statistical Manual (DSM IV TR) criteria. The sum of all PCL-C item scores indicated the severity of Post Traumatic Stress Disorder (PTSD). A score of 30 and above represented the occurrence of PTSD. T-test was used to determine differences in the severity scores of those who met the criteria for PTSD using the total "severity scoring method" and those who did not. **RESULTS:** A total of 29 respondents took part in the study where the majority were female (28/29 or 96.55%). The results showed that Filipinos suffered more re-experiencing symptoms but less avoidance symptoms compared to the DSM IV-TR criteria. Nine of 29 (31.03%) respondents were assessed as having Post Traumatic Stress Disorder (PTSD) based on the total "severity score method". However, none fulfilled the PTSD DSM IV TR criteria when the response "category scoring method" was used. Those who met the severity criteria had significantly higher scores in items 1 (Repeated, disturbing memories, thoughts, or images of a stressful experience from the past?), 3 (Suddenly acting or feeling as if a stressful experience were happening again?), 5 (Having physical reactions when something reminded you of a stressful experience from the past?), 6 (Avoid thinking about or talking about a stressful experience from the past or avoid having feelings related to it?) and 13 (Trouble falling or staying asleep?). **CONCLUSION:** There seems to be a difference in how the Filipinos experience trauma compared

to Western models such as described in the Diagnostic Symptom Manual (DSM IV TR) criteria though caution is warranted in interpreting the results due to the small sample size and the predominance of female respondents.

KEYWORDS: *post traumatic symptomatology, post traumatic stress disorder, natural disaster, typhoon*

INTRODUCTION

Although trauma is a ubiquitous human experience, the response to such may be mediated by different factors. These may include personal strengths and experiences to the broader scope of social and structural factors, like culture and government efficiency. The type of trauma encountered may also affect the type and intensity of symptoms encountered¹.

Given these possible factors, is it possible then that Filipinos, given their sociocultural context, experiencing a disaster, the type of which they have been accustomed to deal with (but the intensity of this recent one was beyond previous disasters) may show a different symptom cluster to which the DSMIV TR criteria espouses, a criteria developed in the Western context of values.

Typhoon Yolanda (Haiyan) was unprecedented in strength and disaster it left in its wake. The storm surges on the shorelines of Central Philippines left thousands dead and many more missing, properties and economies destroyed not to mention the human suffering due to lack of access to basic needs. The inaccessibility of most areas affected due to the destruction of public transport infrastructure meant that these needs were left unheeded for a long time.

However, posttraumatic symptoms and reactions may vary from culture to culture as well as regards the nature of the trauma or disaster. The trans-cultural application of the PTSD disease category has been widely and extensively criticized in the past¹.

Over the past decade, approaches to the mental health care of refugees and disaster survivors adopted by a range of

international health care organizations have been subject to sustained and growing critique. Much of this criticism has focused on the ways in which Western psychiatric categories have been applied to affected populations, paying insufficient attention to the social, historical, and political factors that play a pivotal role in the populations' experiences².

As of the moment there has been no local study that examines the characteristics of the posttraumatic symptomatology of the Filipino in the wake of a disaster. Therefore there is a need to find out how Filipinos react to trauma, especially in context of disasters.

Objectives

This research hopes to provide local data on the occurrence of Post Traumatic Stress symptomatology among survivors of a natural disaster such as Super typhoon Haiyan. The study could enhance current knowledge of the Filipino population regarding PTSD. Implications of this research may be used towards policy making and treatment planning for future events. The research was conducted during the aftermath of a disaster wherein the need to provide psychosocial service superseded the need to complete data gathering for better research analysis. However, despite this, the authors aimed to publish this paper as a means to indicate the possibility that post traumatic symptomatology may be different for certain populations i.e. Filipinos when compared to the Western model of PTSD as noted by other studies as well.

Review of Literature

Post Traumatic Stress Disorder (PTSD) is a universal phenomenon and as such has been viewed by most Western psychiatrists, the American Psychiatric Association included, as a universal reaction to traumatic experiences. These two assertions however are being challenged by other researchers, especially those who have experience in Asia.

PTSD has been characterized by some critics as a Western culture-bound disorder lacking universal validity. A complex diagnosis, the assessment methods for PTSD have varied across epidemiological studies, especially in terms of the trauma criteria. High rates of PTSD have been observed in survivors from less developed areas of the world. According to an article by Martinez, Gonzalez and Delgado, "the consequences will be different depending on the type of population and its cultural pattern, sex and gender of the affected people and type of disasters"³. An examination of prevalence rates and risk factors for PTSD in a cultural context can deepen the understanding of the phenomenology and determinants of PTSD.

Emerging in the 1980s during the aftermath of the Vietnam War, PTSD as a disease entity binds together elements of what had previously been called shell-shock, combat-stress,

delayed stress syndrome, and traumatic neurosis⁴. Therefore, it has been stated that PTSD is a socio-political and medical response to specific "problems of a particular group at a particular point in time" and far from a universal disease entity¹.

Further, it has been questioned whether the notions of "mental trauma" and PTSD in particular, rooted as they are in individual rather than in social dynamics, and reflective of medical pathology rather than historical, social and experiential determinants, are valid frameworks to capture and address affected persons' responses to extreme events⁵. Indeed, the relevance of these categories in transcultural settings seems highly questionable, given that they medicalize and essentialize distress and are deeply rooted in Euro-American perceptions of the self and its relation to the world⁶.

An example of variation to determine PTSD was a study done by Beals, Manson, Croy, Klein, Whitesell, Mitchell, et al. in 2013⁷. They estimated the lifetime prevalence of PTSD in two culturally distinct American Indian reservation communities where PTSD was prevalent. PTSD estimates were derived based on both the single worst and 3 worst traumas. Use of the 3-worst-event approach increased prevalence by 28.3% over the single-event method. The 3 worse events approach challenged the notion that traumatic events were due to cumulative extreme life events rather than due to a single event. These results underscored the need to better understand the implications for PTSD prevalence with the current focus on a single worst event.

Increasing empirical studies suggested that the tripartite PTSD model described in the DSM-IV TR does not accurately account for the underlying PTSD factor structure, and several alternative models have been proposed⁸. Wang et al investigated a new, five-factor model of PTSD symptoms in a sample of Chinese adolescent survivors of an earthquake. They concluded that the five-factor model comprised of intrusion, avoidance, numbing, dysphoric arousal and anxious arousal was a better fit and implied for further reorganization of PTSD criteria⁸. The five-factor model of PTSD offers an alternative to the dominant tripartite model of PTSD and highlights that other response categories are more important in some contexts.

The impact of natural disasters may vary between races. The social background and temperamental characteristics of a culture may play a role in PTSD. Differences in risk, health perception, symptom profile, and long-term mental health outcome including comorbidity may be due to cultural differences.

To illustrate the point, Hispanics reported greater overall

PTSD symptom severity and higher levels of hypervigilance and flashbacks compared to non-Hispanics. Findings suggested that the pattern of PTSD symptoms experienced most prominently by Hispanics differed in kind and not merely in degree⁹.

African-Americans were more likely than White and Latino Hurricane Ike survivors to endorse post-disaster PTSD and depression. Endorsement of depression was predicted by severity of property damage, while Latinos experience of depression and PTSD was only significant in relation to the extent of personal exposure to the disaster¹⁰.

In another study, Asian American Veterans were significantly less likely to screen positive for PTSD than Native Hawaiian/Pacific Islanders and European Americans¹¹. When comparing survivors of Kosovo and Rwandan conflicts, avoidance and inability to recall was less frequent, while a sense of a foreshortened future and increased startle response were more common in the latter¹². These studies showed that post traumatic symptomatology relied much on sociocultural context.

In Cambodia, somatic symptoms were a core aspect of PTSD. Dizziness, dizziness upon standing, headache, *khyâl* (panic-like attacks), fear of fainting and dying upon standing up and thinking a lot were extremely elevated in those participants with higher levels of PTSD. It is possible that *khyâl* attacks constitute a culturally specific experience of PTSD among Cambodians¹³.

The South Asian culture bound syndrome “*latah*”, experienced in Sri Lanka, India and Indonesia, but mainly in Malaysia share certain features with PTSD. Although analyses of the etiology and symptomology of *latah* emphasize its complexity and multidimensionality, some theories suggest that *latah* results from a ‘traumatizing’ event¹⁴. Following incidents “such as the death of a child”, (mainly) women develop an acute fear or phobia, which manifests itself through involuntary compulsive utterance of obscenities, parodying another’s actions or other socially or morally offensive behavior¹⁴. The emergence of *latah* is explained locally by the Malays through the concept of ‘soul loss.’ To simply equate *latah* with PTSD may lead to losing layers of cultural meaning, which may be beneficial as explanatory models for the survivors of trauma and therefore may help them in “making sense” or deriving “meaning” from the disaster, all of which are elements that are important in resilience and posttraumatic growth¹⁴.

Epidemiologic research has clarified the following risk factors that increase the likelihood of PTSD after exposure to a potentially traumatic event: younger age at the time of the trauma, female gender, lower social economic status,

lack of social support, premorbid personality characteristics, antecedent anxiety or depressive disorders, early life stress, family-related anger, feeling punished by God for one’s sins or lack of spirituality, lower levels of attending church-sponsored social events, and pessimistic explanatory style increase the risk of PTSD¹⁵

Some protective factors against PTSD include: optimism¹⁶, purpose in life, higher perceived social support, cultural specific beliefs, and other significant relationships were associated with lower symptom levels and higher positive emotions and church attendance and attending church social events¹⁵.

Coping strategies and involuntary stress responses may both mediate and moderate the relation between exposure to trauma and psychological well-being. Spirituality may be an important coping mechanism among Filipinos. Cultural value orientation might be viewed as a compensatory strategy after trauma exposure¹⁷.

PTSD is a pathology which interacts with the societal context: on the one hand the trauma is established on the brutal reconsideration of social values which seem immutable and on the other hand, the clinical and nosographical concept of PTSD is changing with the evolution of society¹⁸.

In the context of the Asian experience of the 2005 tsunami- a landmark event that affected several areas- causal interpretations were only important insofar as they were made by people affected by a disaster². In the experience of Non Government Organization’s (NGO) who responded to the tsunami, there was a “high level of acceptance of the event” that they ascribed to “strong religious affiliations and beliefs... accept that the losses they suffered were beyond their control”¹⁹. Members of different religions found different causal explanations for the disaster eg. as punishment for Muslims, an act of nature and beyond human control for Buddhists, making it more acceptable than man-made sources of destruction, such as warfare. Thus the American Refugee Committee (ARC) reported that the tsunami survivors had “low incidence of trauma related symptoms”¹⁹.

There was an unfounded presumption that “emotions were readily comprehensible by virtue of common humanity”²⁰. Diagnosis and treatment of PTSD assumed that humans responded to stressful experiences in more or less the same way, which enabled one to empathically understand the emotions of another as a reflection of one’s own emotion. However, emotions do not only refer to singular inner feelings or ideal concepts, but to culturally and historically-shaped matrices of meaning. Structuring the survivor’s experiences within a single explanatory model, as is the case with PTSD, risks condensing singular experiences into one

model deemed clinically significant, thus homogenizing the survivor's multiple experiences into a single pathological entity.

It is important to understand cultural variations in posttraumatic symptomatology. As Eytan et al have argued, putting PTSD and *latah* (an example of a cultural experience of trauma) in the same box as a stereotypical means of expressing certain emotions, diminishes the fact that they are both highly complex processes, through which individuals grapple with their experiences¹². In this regard, both *latah* and PTSD function as ways of expressing and reflecting popular anxieties and vulnerabilities of the self. They function as acceptable idioms within their cultural contexts, while giving meaning to otherwise meaningless experiences and thus, despite the fact that they might both be caused by "traumatic events" are hardly comparable in terms of actual experience and pathogenesis. Thus, we should not ask whether *latah* and PTSD are similar or identical, but rather we should focus on how the experience and behavior of suffering are shaped by a person's understanding of a specific illness².

WHO suggested assessing "local perceptions of distress and illness, ways of coping, community resources"²² while the Cooperative for Assistance and Relief Everywhere (CARE) advised the need "to learn how communities have coped in the past", and to "involve community in defining their own well being"²³.

METHODOLOGY

The study utilized a cross sectional study design. A screening tool was given to people attending a local mental health and medical mission. After instruction by nurses in their local language, the respondents were guided in answering the tool by clarifying difficult terms that the respondent found unclear.

The participants of this study were the survivors of typhoon Yolanda who came from a rural community - Merida, Leyte. Merida is a fifth class municipality in the province of Leyte, Philippines. With a population of 27,224 people based on 2010 data²⁴.

Informed written consent was collected per respondent.

The PTSD Checklist- Civilian version (PCL-C) is a 17-item self-report checklist of PTSD symptoms based closely on the DSM-IV-TR criteria²⁵. Three versions of the PCL were available, although the differences were slight. The PCL-C was a general civilian version that was not linked to a specific event; the questions referred to "a stressful experience from the past". Scoring was the same for all three versions.

Respondents rated each item from 1 ("not at all") to 5

("extremely") to indicate the degree, to which they have been bothered by that particular symptom over the past month. Thus, total possible scores ranged from 17 to 85. Notwithstanding the fact that self-report scales should not be used to make a formal diagnosis, the PCL -C has shown good diagnostic utility, with Weathers et al recommending a cut-off score of 50 as optimal for indicating a probable diagnosis of combat-related PTSD²⁵. An alternative strategy is to use individual items according to the DSM IV TR criteria i.e., at least one symptom from items 1 - 5, and at least three from items 6 - 12, and at least two from items 13 - 17. They suggested a cut off score of 3 or more for each item as being most appropriate for this approach.

The PCL-C has demonstrated strong psychometric properties. Estimates of internal consistency (Cronbach's alpha) ranged between .94²⁶ to .97²⁵. Test-retest reliability has been reported as .96 at 2-3 days and .88 at 1 week²⁷.

The PCL -C correlated positively with the Mississippi PTSD Scale with convergent validity between $r = .85$ and $.93$ ²⁵. Strong correlations have also been reported with MMPI-2 Keane PTSD Scale (.77), IES (.77-.90) and CAPS .92²⁶.

A cutoff score of 50 for a PTSD diagnosis has demonstrated good sensitivity (.78 to .82) and specificity (.83 to .86). In lowering the cut off score to 44 revealed better sensitivity (.94), specificity (.86) and overall diagnostic efficiency (.90) with motor vehicle accident victims²⁶. However, in this study a cut-off point of 30 was set following the recommendations of the National Center for PTSD for screening of general population samples²⁸.

There are two ways of scoring the PCL-C. First, the sum of all PCL-C item scores indicate the severity of PTSD. A score of 30 and above represents occurrence of PTSD, this is called the "total severity scoring method". Second, the PCL-C may also be used to screen for PTSD based on the DSM IV-TR criteria, called the "category scoring method". Both scoring methods were done in this study.

T-test was used to determine if there were differences in the severity scores of those who met the criteria for PTSD using the total severity scoring and those who did not.

RESULTS

A convenience sample of 29 respondents took part in the study conducted from January to February 2014, three months after super typhoon Yolanda hit the Philippines. The sample size was dependent on the number of questionnaires that were available on hand. The questionnaires were taken from the internet web and only a few copies were printed, which could not be photocopied since there was still no electricity in the area. Since the questionnaire did not include

educational level, the health volunteers did not ask for it. The sample was predominantly female (28/ 29 or 96.55%).

TABLE 1. Average Scores of Respondents per item of the PCL-C

	Average	W/ PTSD (n=9)	W/O PTSD (n=20)	p
1. Repeated, disturbing memories, thoughts, or images of a stressful experience from the past?	2.2	3.2	1.7	0.008
2. Repeated, disturbing dreams of a stressful experience from the past?	1.2	1.6	1.1	0.234
3. Suddenly acting or feeling as if a stressful experience were happening again (as if you were reliving it)?	2.4	3.7	1.9	0.008
4. Feeling very upset when something reminded you of a stressful experience from the past?	1.8	2.1	1.7	0.183
5. Having physical reactions (e.g., heart pounding, trouble breathing, or sweating) when something reminded you of a stressful experience from the past?	1.6	2.4	1.2	0.023
6. Avoid thinking about or talking about a stressful experience from the past or avoid having feelings related to it?	1.8	3.3	1.1	0.001
7. Avoid activities or situations because they remind you of a stressful experience from the past?	1.4	2.1	1.1	0.085
8. Trouble remembering important parts of a stressful experience from the past?	1.2	1.4	1.1	0.472
9. Loss of interest in things that you used to enjoy?	1.1	1.3	1.1	0.472
10. Feeling distant or cut off from other people?	1.0	1.0	1.1	0.835
11. Feeling emotionally numb or being unable to have loving feelings for those close to you?	1.1	1.3	1.0	0.365
12. Feeling as if your future will somehow be cut short?	1.5	1.9	1.4	0.39
13. Trouble falling or staying asleep?	2.0	3.0	1.6	0.013
14. Feeling irritable or having angry outbursts?	1.3	1.6	1.3	0.562
15. Having difficulty concentrating?	1.2	1.4	1.1	0.472
16. Being "super alert" or watchful on guard?	1.6	2.2	1.3	0.127
17. Feeling jumpy or easily startled?	1.7	2.3	1.4	0.095

Nine of 29 (31.03%) respondents reached the cut-off point of 30 and above for severity of PTSD symptoms; thus were considered as having PTSD based on the PCL -C criteria. However, none fulfilled the DSM IV TR criteria when using the response "category scoring" system. For items 1, 3, 5, 6 and 13, the difference of scores between those who met the severity criteria and those who did not were statistically significant at .05 alpha level.

On the average, the three items rated highest by the respondents who met the severity score for PTSD were: item 3 (Suddenly acting or feeling as if a stressful experience were happening again (as if you were reliving it?)); item 6 (Avoid thinking about or talking about a stressful experience from the past or avoid having feelings related to it?); and item 1 (Repeated, disturbing memories, thoughts, or images of a stressful experience from the past?). However, for those that did not meet the severity criteria for PTSD, the highest rated items were: item 3, item 1 and item 4 (Feeling very upset when something reminded you of a stressful experience from the past?). (Table 1)

In the DSM-IV-TR criteria for PTSD, the minimum symptom pattern was to have six symptoms distributed among three domains as follows: 1 item for Re-experiencing (item 1-5), 3 items for Avoidance (item 6-12) and 2 items for Arousal (items 13-17). Getting the top six scores for those who met the severity criteria for PTSD the symptom pattern was 3 Re-experiencing, 1 Avoidance and 2 Arousal. For those who did not meet the severity scores, the same pattern with regards to domains were true except that there were differences in the symptoms reported in the Re-experiencing and Avoidance domains. The items reported highest in the Arousal domain was the same for those who met the severity criteria and those that did not. (Table 2)

DISCUSSION

In post-terrorism and similar man-made disasters, the prevalence rates of PTSD were between 18% to 50% within which our rates also fell³⁰. The mean prevalence of PTSD decreased from 28.8% at 1 month to 17.0% at 12 months³⁰. Our sample was taken three months after the disaster yet they were still higher compared to Santiago's sample.

The results showed that there were Filipino patients suffering post traumatic symptoms to a level of severity of PTSD (30 points and above) according to the PCL-C cut off points using the "total severity scoring method" but whose symptom patterns did not fit the Western patterns of experiencing trauma using the "category scoring method" i.e. a Likert style scoring method where a severity of three was considered to have met the DSM IV TR criteria. Because of such a discrepancy in diagnosing PTSD that is dependent on

the scoring method used, it may be necessary to look at other means of evaluating such patients who have experienced trauma so as to ensure they receive appropriate psychiatric care.

TABLE 2. Top 6 symptoms endorsed by those who met the severity scores for PTSD & those that did not

	W/ PTSD (n=9)	W/O PTSD (n=20)	p
1. Repeated, disturbing memories, thoughts, or images of a stressful experience from the past?	3.2	1.7	0.008
2. Suddenly acting or feeling as if a stressful experience were happening again (as if you were reliving it)?	3.7	1.9	0.008
3. Feeling very upset when something reminded you of a stressful experience from the past?	2.1	1.7	0.183
4. Having physical reactions (e.g., heart pounding, trouble breathing, or sweating) when something reminded you of a stressful experience from the past?	2.4	1.2	0.023
5. Avoid thinking about or talking about a stressful experience from the past or avoid having feelings related to it?	3.3	1.1	0.001
6. Feeling as if your future will somehow be cut short?	1.9	1.4	0.39
7. Trouble falling or staying asleep?	3.0	1.6	0.013
8. Feeling jumpy or easily startled?	2.3	1.4	0.095

The results also showed that Filipinos suffered more Re-experiencing symptoms but less Avoidance symptoms compared to the DSM IV-TR criteria. This may validate the idea that the psychological trauma is experienced differently and tightly related to the sociocultural milieu of people suffering such trauma.

However, caution is warranted in interpreting the results because of the very small sample size and the predominance of female respondents. We also believe that the discussion is as much as we can claim for this study. We also believe that the application is also up to the point of merely opening the idea that Filipinos may have different post traumatic symptomatology compared to the Western counterparts.

It is recommended that more accurate estimates of PTSD rates in the country be accomplished using a bigger population who suffer the onslaught of a natural disaster so as to have more evidence that the sociocultural context has a great influence on the post-traumatic stress symptomatology that may not necessarily fulfil the western DSM criteria.

The study hopes that clinicians may look beyond the PTSD criteria of the DSM in assessing patients with post traumatic symptomatology so as not to be amiss in providing adequate mental health care to victims of natural disaster even if they seemingly do not fulfil the DSM IV TR criteria for PTSD.

REFERENCES

1. Summerfield D. A critique of seven assumptions behind the trauma programs in war-affected areas. *Social Science and Medicine*. 1999 May; 48 (10): 1449-1462.
2. von Peter S. The Experience of 'Mental Trauma' and its Transcultural Application. *Transcultural Psychiatry*. 2008 Dec 1; 45 (4): 639-51.
3. Martínez JAC, González PA, Delgado RC. Impact of disasters on the mental health. *Revista de Enfermería, Barcelona, Spain*. 2013 Dec; 36 (12):50-6.
4. Young A. *Harmony of illusions: Inventing posttraumatic stress disorder*. Princeton, NJ: Princeton University Press; 1996.
5. de Jong JT, Komproe IH, van Ommeren M. Common mental disorders in post-conflict settings. *Lancet*. 2003 Jun; 361(9375): 2128- 2130.
6. Weiss MG, Saraceno B, Saxena S, van Ommeren M. Mental health and the aftermath of disasters: Consensus and controversy. *Journal of Nervous and Mental Disease*. 2003 Sep; 191(9): 611-615.
7. Beals J, Manson SM, Croy C, Klein SA, Whitesell NR, Mitchell CM, et al. Lifetime prevalence of posttraumatic stress disorder in two American Indian reservation populations. *Journal of Traumatic Stress*. 2013 Aug; 26(4):512-20.
8. Wang M, Armour C, Li X, Dai X, Zhu X, Yao S. The factorial invariance across gender of the three well-supported models: Further evidence for a five factor model of posttraumatic stress disorder. *The Journal of nervous and mental disease*. 2013 Feb; 201(2): 145-152.
9. Marshall GN, Schell TL, Miles JN. Ethnic differences in posttraumatic distress: Hispanics' symptoms differ in kind and degree. *Journal of Consulting and Clinical Psychology*. 2009 Dec; 77(6):1169-1178.
10. Davidson TM, Price M, McCauley JL, Ruggiero KJ. Disaster impact across cultural groups: comparison of Whites, African Americans and Latinos. *American Journal of Community Psychology*. 2013 Sep; 52(1-2): 97-105.

11. Whealin JM, Stotzer R, Nelson D, Li F, Liu-Tom HT, Pietrzak RH. Evaluating PTSD prevalence and resilience factors in a predominantly Asian American and Pacific Islander sample of Iraq and Afghanistan Veterans. *Journal of Affective Disorders*. 2013 Sept 25; 50 (3):1062-8.
12. Eytan A, Munyandamutsa N, Nkubamugisha PM, Gex-Fabry M. Long-term mental health outcome in post-conflict settings: Similarities and differences between Kosovo and Rwanda. *The International Journal of Social Psychiatry*. 2015 Jun; 61 (4):363-70. Epub 2014 August 21.
13. Hinton DE, Hinton AL, Eng KT, Choung S. PTSD and key somatic complaints and cultural syndromes among rural Cambodians: the results of a needs assessment survey. *Medical Anthropology Quarterly*. 2012 Sept; 26(3):383-407.
14. Karim W. *Emotions of culture: A Malay perspective*. Singapore: Oxford University Press; 1990.
15. Burnett HJ Jr, Helm HW Jr. Relationship between posttraumatic stress disorder, resilience, and religious orientation and practices among university student earthquake survivors in Haiti. *International Journal of Emergency Mental Health*. 2013; 15 (2):97-104.
16. Ahmad S, Feder A, Lee EJ, Wang Y, Southwick SM, Schlackman E, et al. Earthquake impact in a remote South Asian population: psychosocial factors and posttraumatic symptoms. *Journal of Traumatic Stress*. 2010 June;23 (3):408-12.
17. Burri A, Maercker A. Differences in prevalence rates of PTSD in various European countries explained by war exposure, other trauma and cultural value orientation. *BMC Research Notes*. 2014 Jun 28;7:407.
18. Auxéméry Y. Posttraumatic stress disorder (PTSD) as a consequence of the interaction between an individual genetic susceptibility, a traumatogenic event and a social context. *L'Encephale*. 2012 Oct; 38(5): 373-80.
19. American Refugee Committee International. Post-Tsunami rapid psychosocial needs assessment in Ranong and PhangNga Provinces, Thailand. In: von Peter S. *The Experience of 'Mental Trauma' and its Transcultural Application*. *Transcultural Psychiatry*. 2008 Dec 1; 45 (4): 639-51.
20. Wikan U. *Managing turbulent hearts*. 2nd edition. Chicago: Chicago University Press; 1990.
21. Browne K. (Ng)amuk revisited: Emotional expression and mental illness in Central Java, Indonesia. *Transcultural Psychiatry*. 2001 Jun 1; 38(2): 147-165.
22. World Health Organization. *Mental health in emergencies: Mental and social aspects of health of populations exposed to extreme stressors*. 2003.
23. CARE. *Psychosocial wellbeing in emergencies, Asia crisis update number 8 of 6th of January 2005*. In: von Peter S. *The Experience of 'Mental Trauma' and its Transcultural Application*. *Transcultural Psychiatry*. 2008 Dec 1; 45 (4): 639-51.
24. Philippine Statistics Authority. *The 2010 Census of Population and Housing Reveals the Philippine Population at 92.34 Million*. <http://web0.psa.gov.ph/content/2010-census-population-and-housing-reveals-philippine-population-9234-million>
25. Weathers FW, Litz BT, Herman DS, Huska JA, Keane TM. *The PTSD Checklist (PCL): Reliability, validity, and diagnostic utility*. Paper presented at the 9th Annual Conference of the International Society for Traumatic Stress Studies. San Antonio, TX. 1993.
26. Blanchard EB, Jones-Alexander J, Buckley TC, Forneres CA. Psychometric properties of the PTSD Checklist (PCL). *Behavioral Res Ther*. 1996 Aug; 34(8): 669-73.
27. Ruggiero KJ, Del Ben K, Scotti JR, Rabalais AE. Psychometric Properties of the PTSD Checklist--Civilian Version. *Journal of Traumatic Stress*. 2003 Oct; 16(5): 495-502.
28. National Center for PTSD. PTSD Checklist for DSM 5 (PCL-5). 2012 URL:<http://www.ptsd.va.gov/professional/pages/assessments/ptsd-checklist.asp>
29. Di Grande L, Neria Y, Brackbill RM, Pulliam P, Galea S. Long-term Posttraumatic Stress Symptoms Among 3,271 Civilian Survivors of the September 11, 2001, Terrorist Attacks on the World Trade Center. *Am. J. Epidemiol*. 2011 Feb 1; 173(3):271-81. doi: 10.1093/aje/kwq372. Epub 2010 Dec 29.
30. Santiago PN, Ursano RJ, Gray CL, Pynoos RS, Spiegel D, Lewis-Fernandez R, et al. A systematic review of PTSD prevalence and trajectories in DSM-5 defined trauma exposed populations: intentional and non-intentional traumatic events. *PLoS ONE* 2013 Apr 11;8(4):e59236. doi: 10.1371/journal.pone.0059236. Print 2013. <http://dx.doi.org/10.1371/journal.pone.0059236>.