



Study and Comparison of Post Traumatic Stress Disorder in the Survivors of the Earthquake in the Sarpol-E Zahab City and the Villages of Dasht-E Zahab

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Abstract

The purpose of this study was to investigate and compare the prevalence of post-traumatic stress disorder in the survivors of the Sarpol-e Zahab earthquake and the villages of Dasht-e Zahab. This research was carried out with a quantitative approach and a cross-sectional survey method in 1397 in Sarpol-e Zahab city. 400 survivors of the earthquake in Sarpol-e Zahab city and Dasht-e Zahab villages were selected by a random sampling method to participate in this study. The results of the findings with the spss software showed that there is no significant difference in comparison of the post-traumatic stress disorder spread after the earthquake in the villages of Dasht-e Zahab to the quake-affected population of the city of Sarpol-e Zahab. The results of the study showed that the affected people of the villages of Dasht-e Zahab were more prone to post-traumatic stress disorder than those in the quake-stricken city of Sarpol-e Zahab. Based on the findings of this study, the importance of psychological interventions and providing psychological and social support can be emphasized by considering and comparing the prevalence of post-traumatic stress disorder in earthquake survivors in the city and villages of Sarpol-e Zahab.

Keywords: *Prevalence; Post-Traumatic Stress Disorder; Earthquake*

Introduction

Without a doubt, "earthquake" is one of the natural disasters that has threatened human life throughout history. It is considered one of the most destructive phenomena of nature and sometimes extinguished human civilizations. This phenomenon can occur at any time of the year, day or night. The most important features of this natural phenomenon are its unpredictability, sudden occurrence, and the short time for reaction (Adeli, 2005). Also, Iran is one of the ten major catastrophic countries and one of the five earthquake-prone countries in the world. Of the 40 known natural disasters, 31 occur in Iran. One of the damaging effects of natural disasters is psychological effects (Asli Nejad, Verdi & Ekrami, 2009). In earthquakes and such crises, the crisis is a critical stage or turning point in the life history of a social

system, in which the fate of the system is determined. In other words, the crisis is a rupture point in the life of a social system in which the daily functioning of a system emerges out of its normal and stable state and behaves in a strange way. The main characteristic of this surprising situation is the high threat of core values and the low time for decision making. In these situations, the balance of the social system is disrupted. Also, the relationship between the three factors of time, task, and resources is distorted, and the two or three factors above will have significant deficits (Amiri, 2012). There are also unexpected, sudden and dangerous events that can be a threat to people's lives and affect a large group of residents in an area; These events also impose psychological pressure on members of a community beyond their capacity to adapt (Roberts¹2003). In other words, natural disasters (especially earthquakes) are often silent and yet potentially prone to damage (Shakiba, 2008). In general, natural disasters, especially earthquakes, in addition to causing physical injuries, can cause serious adverse effects on a survivor 's mental health. Due to the magnitude and severity of earthquake damages, the resulting psychological problems are usually sustained. Since Iran is one of the earthquake-prone areas in the world and due to the old structure of most rural areas and cities and high earthquake casualties in the country, earthquakes are always one of the most stressful events in this country. It is essential to pay attention to its psychological effects along with the physical effects (Karami & et al., 2007).

Post-traumatic stress disorder is the most common mental disorder after an earthquake (Cao, McFarlane & Klimidis,² 2003). The main characteristic of post-traumatic stress disorder³ is stress and anxiety, which occurs after a traumatic or stressful event. Stressors in post-traumatic stress disorder are severe enough to affect almost all humans. People re-experience the traumatic event in their dreams and daily thoughts; Their response is to avoid anything that reminds them of the event. They do not react to anything (emotional numbness) while being in a state of over-excitement. Other symptoms include depression, anxiety, cognitive problems, such as lack of focus (Saduk, Saduk, & Ruiz⁴, 2015, translation Ganji, 2015). Post-traumatic stress disorder symptoms also include negative changes in cognition, such as loss of the memory of the event, severe self-blame, distancing from others, and inability to experience positive emotions (Halgin & Whitbourne⁵, 2014, translation Seyyed Mohammadi, 2015).

Post-traumatic stress disorder, like other known disorders in the field of psychopathology, endangers the physical and mental health of the sufferer and disrupts his/her social, family, and occupational functioning. Studies show that people with traumatic stress disorder are more likely to commit suicide (Selaman, & Bolton⁶, 2014). The results of a study showed a relatively high prevalence of mental disorders in earthquake victims from the early days of the event. Among the effective factors examined, only immediate family' injuries were related to psychological disorders (Karami & et al., 2007). Also, another research reveals that subjects with impaired physical and mental health were more likely to develop traumatic stress disorder. Therefore, post-traumatic stress disorder is associated with physical and mental illness and quality of life in vulnerable populations, and having social support is a protective factor against post-traumatic stress disorder (Goldfinger, Edmondson & Kronish⁷, 2014). Studies have shown that severe earthquakes create long-term disabilities (Mahmoodi Qaraee, Mohammadi, Fakour & Mommtaz Bakhsh, 2005). The results of a study also showed that the frequency and severity of traumatic stress disorder symptoms varied in different age groups of children and adolescents. Therefore, it seems that more accurate diagnostic tools should be used to discover this disorder in children and adolescents (Motlagh, Alagheband Rad, Shahrivar, Arabghol & Sahebi, 2005).

¹ Roberts

² Cao, McFarlane & Klimidis

³ Post Traumatic Stress Disorder (PTSD)

⁴ Sadock, Sadock & Ruiz

⁵ Halgin & Whitbourne

⁶ Selaman, Chartrand & Bolton

⁷Goldfinger, Edmondson & Kronish

The study by Parvaresh and Bahram Nejad showed that the severity of traumatic stress disorder in children and adolescents, after a severe earthquake, is significant and planning for diagnosis and therapeutic intervention seems necessary (Parvaresh & Bahram Nejad, 2006).

It is necessary to carry out social, psychosocial interventions, and regular follow-up since the prevalence of traumatic stress disorder among victims of accidents is high. These interventions can increase the ability of people with disabilities to adapt to new conditions and promote their mental health (Asli Nejad, Verdi & Ekrami, 2009). Iran is one of the catastrophic countries, and the occurring disasters like the earthquake in the country in recent years caused many damages and psychological consequences for survivors. Therefore, addressing the issue of surveying and comparing the prevalence of post-traumatic stress disorder in survivors of the Sarpol-e Zahab and the villages of Dasht-e Zahab is of great importance. This would help to conduct psychological interventions after the earthquake. Therefore, this study seeks to determine whether there is a significant difference in the prevalence of post-traumatic stress disorder between survivors of the Sarpol-e Zahab and villages of Dasht-e Zahab.

Methodology

In a cross-sectional survey study, a sample size of 400 people, 200 survivors of the earthquake in Sarpol-e Zahab and 200 survivors of villages of Dasht-e Zahab, were selected by random sampling. Thus, six months after the earthquake in Sarpol-e Zahab, the researchers randomly visited the earthquake survivors and checked if they meet the inclusion criteria. After a complete explanation of the purpose of the survivors of the earthquake, the questionnaire of traumatic stress disorder was completed, and its score was calculated.

Post Traumatic Stress Disorder Questionnaire: This questionnaire consists of 22 questions with a 7-point Likert scale (No - Very Low - Low - Somewhat High - Very High - Very Severe) and a direct score ranging from 0 to 114. The break score between participants with no post-traumatic stress disorder and participants with post-traumatic stress disorder is 38. The last four questions are rated as Question 19 after scoring and earning the highest score. The questionnaire divided the participants into four groups. One group that has normal stress response (score 0 to 38), another group with mild post-traumatic stress disorder (score 39 to 54), the next group with moderate post-traumatic stress disorder (Score 55 to 77) and finally the group with severe post-traumatic stress disorder (score above 78). The internal consistency of the questionnaire was high ($\alpha = 0.92$), and the test-retest method showed very high reliability ($r=0.95$).

The questionnaire was translated by Yasemi et al. (1998) and was administered to a sample of 1360 people in Qayen, Birjand, and Ardabil earthquake zones. The content validity of the questionnaire was confirmed by the psychiatric scholars, and it was concluded that the questionnaire could be used in Iran as well. Also, the diagnostic agreement of the questionnaire was $\text{capa} = 0.85$, which was identified by a psychiatrist. The reliability coefficient of the questionnaire, which obtained through Cronbach's alpha was 0.86.

Results

Table 1. Shapiro–Wilk test results on data distribution

| PTSD | Factor |
|--------|--------|
| | Test |
| 0.0930 | Z |
| 0.070 | Sig |

The results showed that the distribution of data was normal in two factors; therefore, parametric tests were used. Initially, the distribution of the collected data was evaluated using the Shapiro–Wilk test. The results of which are presented in Table 1.

Table 2. Frequency Distribution of Research Subjects based on Grouped Scores of Post Traumatic Stress Disorder

| Group | | | | Class | Variable |
|------------|-----------|------------|-----------|-------------|--------------------------------|
| Rural | | Urban | | | |
| percentage | Frequency | percentage | Frequency | | |
| 0.5 | 1 | 19.5 | 19 | No disorder | Post-traumatic stress disorder |
| 15 | 30 | 17 | 34 | Mild | |
| 19.5 | 39 | 41 | 82 | Moderate | |
| 65 | 130 | 32.5 | 65 | Severe | |

According to the results of the frequency distribution, a comparison of the frequency and percentages of the classes (no disorder, mild, moderate, and severe) has been shown in Table 2. Different classes of Post-Traumatic Stress Disorder in cities and villages have been categorized based on the grouped scores.

Table 3. Independent t-test results (comparing post-traumatic stress disorder in urban and rural groups)

| Sig | Df | T | SD | Mean | n | Group | Factor |
|-------|-----|--------|-------|-------|-----|-------|--------------------------------|
| 0.001 | 298 | -3.860 | 1.406 | 3.701 | 200 | Urban | Post-Traumatic Stress Disorder |
| | 298 | | 1.241 | 4.217 | 200 | Rural | |

Table 3 compares the level of post-traumatic stress disorder in urban and rural groups using the independent t-test. T-test was used to compare the mean scores of post-traumatic stress disorder in urban and rural areas. The results of the independent t-test show that there is a significant difference between the level of traumatic stress disorder in urban and rural people (Sig=0.001, $t = -3.860$). It can be deduced from the observed averages that rural people are more likely to have post-traumatic stress disorder.

Discussion and Conclusion

In this research, 400 earthquake survivors of Sarpol-e Zahab and villages of Dasht-e Zahab were studied. The results showed that the rural survivors had more PTSD than the people affected by the earthquake in Sarpol-e Zahab city. These results include valuable data in comparison with research conducted domestically. Quality of life of patients with post-traumatic stress disorder is lower in terms of vitality, social functioning, mental health, and physical function than other groups. Social functioning, mental health, and physical functioning were lower than in other groups. Post-traumatic stress disorder seems to impair the patient in occupational, family, daily, and social functioning and affect patients' quality of life (Imani, Atef Vahid & Asghar Nejad Farid, 2012). A research with the title of "Post-Traumatic Stress Disorder symptoms and their comorbidity with other disorders in eleven to sixteen years old adolescents in the city of Bam" indicate a high Comorbidity between post-traumatic stress disorder syndrome and other syndromes, and this can lead to a high prevalence of reported Post-Traumatic Stress Disorder. The psychological vulnerability of men was greater than that of women, and expectations regarding gender roles appear to play a role in the expression of emotional responses and how the psychological syndrome is expressed (Mohammadi, Mohammad Khani, Dolatshahi & Golzari, 2010). The research findings also showed that having mental health, along with personality traits, is a solution to the syndrome. In other words, mental health and positive personality traits, such as openness to experience, reduced the likelihood of incidence and severity of symptoms of post-traumatic stress disorder (Golestaneh, Chegini & Mousavinejad, 2016). Nohi et al. (2006) reported that timely treatment of post-traumatic stress disorder and prevention of increase in patients numbers could significantly suppress the development of violence, which is secondary prevention in the form of primary prevention. Also, the psychological effects of earthquakes have become more and more important in recent decades. Studies investigating the consequences of natural disasters show that in many earthquake survivors, certain symptomatic clinical responses to stressful events, such as lack of loved ones, disruption of social structure, and loss of social support, are seen (Livanou, Bassoglu, Ssalcioglu & Kalendar, 2002). A study at the National Center for Post Traumatic Stress Disorder (2000) following the 1999 earthquake in Turkey found that providing psychological and social support to children and adolescents reduces disorder symptoms, and improves the quality of life and adaptability of survivors. The findings indicate that paying attention to survivors' living conditions and providing them basic living needs, as well as educational, cultural, recreational, health and mental health services, and above all, job opportunities are of great importance (Bayan Zadeh, Islami, Samara, Foruzan & Eghlima, 2004). The results showed that training problem-solving skills to survivors can reduce the symptoms of post-traumatic stress disorder (Gemashchi, 2008). Psychological debriefing and cognitive-behavioral group therapy may be effective in reducing symptoms of post-traumatic stress disorder (Mahmoodi Qaraee, Mohammadi, Fakour & Mommtaz Bakhsh, 2005). The findings of research provide evidence regarding the positive effect of cognitive-behavioral therapy on cognitive rehabilitation in patients with post-traumatic stress disorder (Darharj, Moradi, Hasani & Amiri, 2016). Based on these findings and comparing the prevalence of post-traumatic stress disorder in earthquake survivors of Sar-e-Pol Zahab cities and villages, the importance of psychological interventions and providing psychological and social support can be pointed out. However, supportive psychosocial interventions, including cognitive-behavioral group interventions, are effective on some symptoms of post-traumatic stress disorder in natural disasters. However, there is no difference in the effectiveness of these interventions between different age groups (Fakour, Mahmoudi Qaraee, Mohammadi, Karimi, Azar & Mommtaz Bakhsh, 2006). The results of Farhudian et al. (2006) research showed that post-traumatic stress disorder is prevalent in survivors of the Bam earthquake, suggesting the need for community-based interventions for the affected population.

It is necessary to explain that in this study, there was no peaceful and specific place for distribution of questionnaires, and completion of the questionnaire by people in shelters and conexas was one of the limitations of the study. Further research should be carried out in the city and villages of Sarpol-e Zahab about the psychological consequences and associated disorders, such as post-traumatic

stress disorder and other possible post-earthquake disturbances, in order to perform psychological interventions and provide psychological and social support.

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