

PTSD symptoms of survivors of an airline event in Teheran

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Abstract

Introduction: This study investigated the PTSD symptoms of 39 survivors of a 2005 airline crash in Tehran.

Material and methods: The 39 participants ranged in age from 17 to 70 years. The mean age of participants was 33.8 (standard deviation 14.5). The assessment measures used were the Posttraumatic Stress Disorder Symptom Scale (PSS) and clinical interviews based on the DSM-IV-TR.

Results: Twenty-six participants (66.7%) were diagnosed with PTSD using the PSS and 29 (74.4%) were diagnosed with PTSD by psychiatric interview.

Conclusions: There must be more aftermath care, treatment and social support for survivors in Iran and all other countries.

Key words: PTSD, disaster, airline, Posttraumatic Stress Disorder Scale, PSS, structured psychiatric interview, trauma.

Introduction

Acute and chronic psychological stress reactions for survivors of disasters, especially post-traumatic stress disorder (PTSD), are well documented for adults, adolescents and children [1-7]. A stress response for involvement in a disaster is likely based upon the "exposure to an extreme traumatic stressor involving direct personal experience of an event that involves actual or serious injury, threat to one's physical integrity, witnessing an event that involves death or injury, a threat to the physical integrity of another person, or learning about unexpected or violent death or serious harm, threat of death or injury experienced by a family member or other close associate, or learning that one's child has a life-threatening disease" [8].

Acute stress responses following a trauma indicate sensitivity [RA1] to PTSD. Birmes, Ducasse, Warner, Payen & Schmitt monitored and assessed eight injured patients hospitalized after a major air disaster for a month [9]. The symptoms of acute stress response (ASR), PTSD and depression were assessed using DSM-IV criteria immediately following the accident, then 4 weeks thereafter. The Impact of Event Scale (IES) was completed on the 30th day (D30). Results indicated four patients presented with an ASR, and three of them had PTSD at D30.

Investigations of the effect of PTSD on survivors following an airline disaster in Iran have not appeared in the literature. A search of the literature

indicated that this is the first research to investigate the PTSD symptoms of individuals who had been directly involved in a disaster in Iran. The incidence, features and course of PTSD have received considerable research attention in the professional literature of other regions of the world [1-7].

The purpose of the current study was to investigate the PTSD symptoms of survivors who had been directly involved in an airline disaster in Tehran. It was predicted that the disaster would negatively impact the survivors, and cause symptoms of PTSD in many of those survivors.

Material and methods

Subjects

Survivors who experienced the accident in Tehran's airport on April 20th 2005 were traced by an investigator who is a clinical psychologist. Study participants were 39 people who survived that airline disaster. They were part of a group of 157 passengers from a Boeing 707 accident, operated by the Iranian carrier Airline Services.

The 39 participants ranged in age from 17 to 70 years. The mean age of participants was 33.8 (standard deviation 14.5). Thirty-one (79.5%) were female and 8 (20.5%) were male.

Instruments

Two measures were used to assess the presence of PTSD symptoms. The Posttraumatic Stress Disorder Symptom Scale contains 17 items that diagnose post-traumatic stress disorder according to the Diagnostic and Statistical Manual of Mental Disorders-III-Revised (and DSM-IV-TR) criteria. These items also assess the severity of PTSD [10]. The questionnaire has three groups of items: re-experiencing the traumatic event, avoidance of stimuli associated with the precipitating traumatic event, and increased arousal. Total PTSD severity for each symptom group can be calculated by summing the scores in each symptom cluster. Overall severity is the sum of the symptom group scores.

The Posttraumatic Stress Disorder Symptom Scale, Self-Report version (PSS-SR) contains 17 items that diagnose post-traumatic stress disorder according to the Diagnostic and Statistical Manual of Mental Disorders-III-Revised (and DSM-IV-TR) criteria [10]. These items also assess the severity of post-traumatic stress disorder symptoms. Foa, Riggs, Dancu & Rothbaum [10] examined the psychometric properties of the two versions of the Posttraumatic Stress Disorder Symptom Scale: (a) an interview version of the Posttraumatic Stress Disorder Symptom Scale, and (b) a self-report version. These two versions of the Posttraumatic Stress Disorder Symptom Scale were administered to a sample of 118 recent rape and non-sexual assault victims. The

results showed that both versions of the Posttraumatic Stress Disorder Symptom Scale have satisfactory internal consistency, good concurrent validity and high test-retest reliability. The PSS was translated into the Persian language by the first author, who graduated from the Institute of Psychiatry, London, and speaks English as a second language and Persian as his first language. The accuracy of the translation was examined by a colleague and found to be acceptable.

In research by Stieglitz, Frommberger, Foa and Berger [11] the psychometric properties of the PTSD Symptom Scale (PSS) were evaluated in a clinical sample of severely injured in-patients after a traffic accident (n=123) [11]. The results indicated that the PSS has satisfactory reliability and validity (internal and external reliability).

The validity of the Impact of Events Scale (IES) and the Posttraumatic Stress Disorder (PTSD) Symptom Scale, Self-Report Version (PSS-SR) was examined among crime victims [12]. Both instruments performed well as screeners for PTSD. For the IES, sensitivity ranged between 0.93 and 1.00; for the PSS-SR, sensitivity ranged between 0.80 and 0.90. Specificity for the IES ranged between 0.78 and 0.84 and for the PSS-SR ranged between 0.84 and 0.88. The authors concluded that both of these short self-report instruments or their individual items are suitable as screeners for PTSD, specifically in settings where mental health professionals are unavailable.

In a study by Coffey, Dansky, Falsetti, Saladin and Brady [13] the psychometric properties of a modified version of the PTSD Symptom Scale Self-Report (PSS-SR) were examined in a group of treatment-seeking substance use disorder (SUD) patients (N=118). The modified version of the PSS-SR demonstrated good internal reliability and correlated with other self-report measures of trauma-related symptomatology. Comparisons between a structured PTSD diagnostic interview and the modified PSS-SR indicated that 89% of the PTSD positive patients were correctly classified by the modified PSS-SR.

In research by Mirzamani, Mohammadi & Besharat (2006) the psychometric properties of the PTSD Symptom Scale (PSS) were evaluated in a sample of 19 adolescents who had survived a boat sinking in Tehran's city park (14 & 15). The results indicated that the PSS has satisfactory reliability and validity (internal and external).

The second assessment instrument used was a structured psychiatric interview based on DSM-IV-TR criteria for PTSD. This interview was conducted by the second author, a professor of psychiatry.

The accident

An Iranian plane carrying 157 passengers crash-landed and caught fire at Tehran's main airport on Wednesday night, leaving several people injured.

Late on 20 April 2005, a Boeing 707, operated by the Iranian carrier Saha Airline Services, caught fire after making a crash landing at Tehran Mehrabad International Airport. The aircraft's landing gear failed to deploy on arrival from the Persian Gulf tourist island of Kish, forcing the aircraft to make a hard landing. The aircraft then skidded off the runway into a nearby river. Several passengers jumped into the river. The accident caused dozens of injuries and two deaths [16].

Procedure

Survivors who experienced the accident in Tehran's airport on April 20th 2005 were traced by an investigator who is a clinical psychologist. Forty survivors of the airline crash were located. The identified survivors were sent a letter asking them if they were willing to participate in the study. Those 39 individuals who were willing to participate in the study and completed a consent form and were then given a suitable time and place to be administered the two research measures. The interview was conducted one month after the disaster.

Three of the potential participants with whom the proposed research was discussed did not agree to participate in the study (refusal rate was 7%).

Results

The results of the Posttraumatic Stress Disorder Symptom Scale (PSS-SR) and psychiatric interview are shown in Table I using DSM-IV criteria.

Table I shows the frequency of survivors diagnosed with PTSD using PSS and psychiatric interview. Twenty-six of them (66.7%) using PSS-SR and 29 (74.4%) by psychiatric interview were diagnosed with PTSD. Considering the low n and likely non-normality of the sample, chi square was calculated ($p=0.004$).

Discussion

Twenty-six (66.7%) of the survivors were diagnosed with PTSD after the disaster. This indicates that the survivors need help and mental health care. A follow-up study of the participants is warranted.

It seems that the prevalence of PTSD in this group is higher than the other research studies [7]. One possible reason for the high incidence in this group is that they did not receive any care, treatment or social support. Previous research has indicated that aftermath care and social support could be helpful for recovery from PTSD [7]. The effects of the disaster in a different country may be similar, but the severity and quantity of aftermath disorders depends on aftermath care and support, which could be different in different countries. The investigated survivors did not receive any care,

Table I. Diagnoses of PTSD in participants using the PSS-SR and psychiatric interview, N=39

Diagnosis	PSS-SR	Psychiatric Interview
PTSD	26 (66.7%)	29 (74.4%)
Not PTSD	13 (33.3%)	10 (25.6%)

treatment or social support until the time of interview (one month after the disaster), when most of them needed help and treatment.

Conclusions

It seems that the prevalence of PTSD in this group is higher than the other research studies in the world. Previous research has indicated that aftermath care and social support could be helpful for recovery of PTSD [7]. But the investigated survivors did not receive any care, treatment or social support until the time of interview. We can conclude that there must be more aftermath care, treatment and social support for survivors in Iran and all other countries.

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