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Association Between Mental Health and Traffic Accidents Injuries in Iranian Men

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ABSTRACT

Study of psychological consequences in traffic accident injured has received little attention in Iran. This study aimed to examine association between mental health and traffic related injuries in injured patients admitted into Emergency Department of Golestan hospital affiliated to Jundishapur University of Medical Sciences in Ahvaz, Iran. This study was done on a total of 102 injured men involved in traffic accidents as driver. The controls were consisted of 87 men that were selected from general population and had no history of traffic accident. The data was gathered using General Health Questionnaire (GHQ) and analyzed through multiple univariate Analyses of Variance (ANOVAs). There was a significant difference between individuals with traffic accident and control group in mental health, physical symptoms, depression and social functioning all ($p < 0.001$). Difference in anxiety/insomnia was not significant ($p > 0.05$). There were significant differences between two group in education, occupation status and marital status all ($p < 0.001$). Traffic injuries were associated with mental health and physical symptoms, depression and social functioning components of GHQ. These results highlight the individual burden related to traffic accidents in Iran.

Key words: Mental health, traffic accidents injuries, injured, men, Iran

INTRODUCTION

Traffic accidents are the main cause of injuries and loss of life (Arnberg *et al.*, 2011). Existing estimates indicate that up to 50 million people were injured and 1.2 million people die in road traffic accidents in the world annually (Khademvatan *et al.*, 2014).

According to the World Health Organization estimates in 2009, traffic injuries will rank as the 3th leading cause of disability-adjusted life years lost by the year 2020 (Kenardy *et al.*, 2014). Road traffic crash tragedy in Iran is much worse than other regions of the world and traffic-related injuries have been reported to be approximately ten times more than the national figures reported by other existing sources (Saadat and Soori, 2011).

During the past decade, psychological consequences of traffic accidents have received more attention and research shows that prevalence of mental health problems is elevated in traffic accident injuries (Kenardy *et al.*, 2014). While the majority of survivors with injuries are resilient and recover well, mental health problems occur in a remarkable minority of these patients (Mayou and Bryant, 2002). They experience some mental health issues such as Post Traumatic Stress Disorder (PTSD) (Koren *et al.*, 1999; Mayou and Bryant, 2002; Mayou *et al.*, 1993, 2002; Skogstad *et al.*, 2014; Yasan *et al.*, 2009), depression (Ehring *et al.*, 2008; Khademvatan *et al.*, 2014; Mayou *et al.*, 1993), driving phobias (Mayou *et al.*, 1993) and so on. If persistent, these problems can have ongoing impact on well-being (Kassam-Adams, 2014) and victims' health related quality of life affected by the event (Alghnam *et al.*, 2014).

Since long-term health outcomes are under the influence of a combination of physical functioning and mental health (Kenardy *et al.*, 2014). It is important to understand psychological issues following road traffic crashes in injured survivors.

In spite of large number of road traffic accidents in Iran each year and the large proportion of injured people (Ehring *et al.*, 2008). The relationship between traffic related injuries and psychological distress is not fully understood in Iran. The purpose of this study was, therefore, to study mental health in traffic-related injured survivors and to compare it with control group.

MATERIALS AND METHODS

Research was conducted over a period of 12 months from 2012-2013. The samples of study were consisted of a total of 102 men involved in traffic accident as drivers and injured physically and admitted into Emergency Department of Golestan hospital affiliated to Ahvaz Jundishapur University of Medical Sciences, Ahvaz, in the southwest of Iran. Injured patients developed multiple traumas following accident. Drivers who remained alive and was available to interview and those who hadn't consumed any food or drug that will effect on driving at least 24 h before accident (based on history and physical examination) were included. People who had consumed alcohol and drug addiction were excluded.

The controls were consisted of 87 men who were selected from general population and had no history of traffic accidents. Age of participant was ranged between 19-60 years and all of them had driving license from at least 1 year ago. All participants or their parents signed informed consent. Each subject was also asked to complete the Persian form of General Health Questionnaire (GHQ). If someone wasn't able to fill it in because of injury, the researcher assistant helped him. General Health Questionnaire non-psychotic psychological disorders. It consists of 28 items scored by Likert method (from 1-4).

The Questionnaire measures five sub-scales including social functioning, anxiety/insomnia, physical symptoms, depression and a total score of mental health (Noorbala and Mohammad, 2009).

Statistical tests: Data was analyzed using multiple univariate Analyses of Variance (ANOVAs). The probability level of 0.05 was accepted as statistically significant. Statistical analyses were carried out using SPSS version 16.

RESULTS

Frequencies of the participants' demographic features according to the group are listed in Table 1. There was a significant difference between individuals with traffic accident and control

Table 1: Frequencies of the participants' demographic features according to the group

Demographic variables	Frequency N (%)		p-value
	Individuals with traffic accident	Control group	
Marital status			
Single	51 (50%)	70 (80.45%)	<0.001
Married	51 (50%)	17 (19.54%)	
Divorced/widowed	0	0	
Occupation status			
Yes	72 (70.58%)	36 (41.37%)	<0.001
No	29 (28.43%)	51 (58.62%)	
Education			
Diploma and lower	98 (96%)	13 (14.94%)	<0.001
Academic education	4 (3.92%)	74 (85.05%)	
Ethnicity			
Fars	21 (%)	28 (%)	
Arab	58 (%)	20 (%)	
Lor	24 (%)	21 (%)	
Other	0	18 (%)	
		0.06	

Table 2: Comparison of mental health and its components in individuals with traffic accident and control group

	Individuals with traffic accident		Control group		F _{1,187}	p-value
	Mean	SD	Mean	SD		
Mental health	97.03	3.14	91.18	11.10	25.91	<0.001
Physical symptoms	25.76	1.17	23.62	3.10	41.74	<0.001
Anxiety/insomnia	22.31	2.20	22.65	3.88	0.57	0.4
Depression	21.67	1.50	19.88	3.17	25.77	<0.001
Social functioning	30.37	1.34	27.80	4.01	36.89	<0.001

group in mental health ($F = 25.91$, $p < 0.001$), physical symptoms ($F = 41.74$, $p < 0.001$), depression ($F = 25.77$, $p < 0.001$) and social functioning ($F = 36.89$, $p < 0.001$). Difference in anxiety/insomnia was not significant. A comparison of mental health and its component is shown in Table 2.

DISCUSSION

Traffic-related injuries are a serious public health problem in Iran (Saadat and Soori, 2011) and a number of injured people experience psychological problems after traffic accident (Ehring *et al.*, 2008; Khademvatan *et al.*, 2014; Koren *et al.*, 1999; Mayou and Bryant, 2002; Mayou *et al.*, 1993, 2002; Skogstad *et al.*, 2014). The present study aimed to determine the association between mental health and traffic related injuries in injured patients. It is the first to report mental health in traffic-related injured in the Iranian population.

Our findings indicated that there are significant differences between traffic accidents injured patients and control group (healthy individuals with no history of traffic accident) in mental health and some of its components including physical symptoms, depression and social functioning. In line with our results (Van Delft-Schreurs *et al.*, 2014) found that 30.1% of the injured patients had psychological complaints. They didn't find relationship between psychological complaints and somatic severity or type of injury (Van Delft-Schreurs *et al.*, 2014). Mayou and Bryant (2001) reported that 32% of injured patients complain of psychiatric consequences after 1 year following a road traffic accident (Mayou and Bryant, 2001). We didn't have follow up. Mayou *et al.* (1993) reported that these syndromes were not related to a neurotic predisposition and strongly related to unpleasant memories of the accident (Ehring *et al.*, 2008).

Our results also replicate the findings of the study conducted by three previous researchers (Kenardy *et al.*, 2014; Koren *et al.*, 1999; Mayou *et al.*, 1993) that found depression in injured patients.

In a study by Jones *et al.* (2011) patients involved in road traffic accident were at risk for chronic widespread pain onset (Jones *et al.*, 2011). In the current study also we found significantly higher mean score between two groups in physical symptoms. However, this is needed to follow for long term, because the physical symptoms may be due to damaged organs. In contrast to previous studies which found PTSD (Kassam-Adams, 2014; Mayou and Bryant, 2002; Mayou *et al.*, 2002; Van Delft-Schreurs *et al.*, 2014), driving phobia (Ehring *et al.*, 2008), acute stress (Ehring *et al.*, 2008; Ursano *et al.*, 1999) and other anxiety disorders (Mayou and Bryant, 2002). We did not find difference between two groups with respect to anxiety symptoms.

This gap might be somewhat due to features of subjects or methodological differences in assessment of psychological factors. For example in many of investigations that mentioned above, follow-up study was designed to evaluate the long-term psychological consequences, but in our study, participants were assessed during 72 h after the accident, while some symptoms have been delayed onset.

In this study, we found significant difference between two groups in education. Out of 102 injured patients who were victims of road traffic accidents, 98 and 13% were diploma or lower and university educated, respectively. While 4 cases (3.92%) were diploma or lower and 74 cases (85.05%) had academic education in control group. This may reflect the effect of education on reduction of traffic accident rate. Araqi and vahedian also find the similar finding (Araqi and Vahedian, 2007).

Our results also indicated significant difference between two groups in occupation status and marital status. Married individuals and those with job opportunity were at more risk for road traffic accident as drivers, because with less access to jobs, people are less likely to afford a car (Saadat and Soori, 2011) and to marry in Iran. Also, Bener in 2005 reported that marital status and education are some risk factors that play a significant role in traffic accidents (Bener and Crundall, 2005).

CONCLUSION

This study contributes to our understanding of mental health following a road traffic crash, highlight the individual burden related to traffic accidents and support the claim of the need for psychological interventions in the phase of post disaster. Several limitations should, however, be taken into account. All participants were men, which mean the findings should be generalized to women with caution. Hence research on the psychological distress in traffic-related injured women also is recommended. Moreover, this study was a cross-sectional. It was difficult for us to access to precise information e.g. postal address, telephone number etc about patients, so we couldn't follow patients longitudinally. Therefore, longitudinal study is suggested for future studies to increase power in the findings.

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