Birjand University of Medical Sciences

Journal of Surgery and Trauma

Original Article

Comparison of anger control and its relationship with mental health in trauma patients after incident

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Abstract

Introduction: Anger, as a major factor in traffic accidents and beatings, plays an important role in the mortality of the people. According to the statistics from the World Health Organization, beatings and traffic accidents are predominant causes of trauma incidents. An increase in violence, as a risk factor, is effective in traumatic and mental health injuries and has an important role in creating incidents. This study aimed to compare anger control and its relationship with mental health in trauma patients after incidents.

Method: This cross-sectional study was conducted in Shahid Rajaee Hospital affiliated to Shiraz University of Medical Sciences, Shiraz, Iran, on 214 patients who were selected based on systematic randomization using the available sampling method. Novaco's Anger Control Questionnaire, as a standard questionnaire, and General Mental Health Questionnaire were used for comparing the anger control and assessing the mental health, respectively. The collected data were analyzed in SPSS software (Version. 18) using the independent t-test and Pearson correlation coefficient. A p-value less than 0.05 was considered statistically significant.

Results: According to the results of demographic characteristics, the mean age of the patients was 32.65±8.318 years. Out of 214 patients who participated in this study, 120 and 94 cases were injured by beatings and traffic accidents, respectively. The results of statistical analysis indicated a significant relationship between mental health and anger control in these subjects.

Conclusion: The injury caused by an increase in violence in traffic accidents and beatings is a dangerous risk factor lurking in the population, which leads to irreparable damages to the country's economy. These findings showed a significant relationship between anger control and mental health in the two groups of traffic accidents and beatings. Therefore, the development of anger control training packages can reduce damages caused by anger in people.

Keywords: Anger, Mental Health, Trauma, Traffic Accidents

Citation: Yadollahi M, Pazhuheian F, Rastegar SH. Comparison of anger control and its relationship with mental health in trauma patients after incident. J Surg Trauma. 2021; 9(2):64-71

Received: November 29, 2020 ***Revised: April 14, 2021*** ***Accepted: April 24, 2021***

[DOI: 10.32592/jsurgery.2021.9.2.104]

Introduction

Anger is one of the natural and innate emotions (1) in humans that is characterized by a physiological reaction with a desire to harming a target (2). Violence, by activating the neuroendocrine processes due to the stimulation of the autonomic nervous system, is associated with individual reactions and beatings between individuals (3). Psychological studies showed that increased violence in people had a direct relationship with the poorer mental health status (4). The inability to control anger and its destructive consequences have long been of interest to scientists and experts (5). Where a person's violence is out of control, it can lead to problems at work, interpersonal relations, and the overall quality of life (6). Mental health, as a major factor, is essential for maintaining and sustaining the social, occupational, and academic performance of individuals in the community (7). In the field of mental health, many factors, including lack of social justice, unreasonable discrimination, and mental stress cause impaired mental health and increased violence in some cases (8). Violence, as a major risk factor in beatings and traffic accidents, is the most common cause of trauma, which is the most common cause of health risk in half a million people in the country (5). Various studies have shown that trauma has many casualties worldwide each year, and the treatment of these injuries imposes significant costs on society (9). Several studies have shown that drug abuse, alcohol, male gender, low socioeconomic status, lower literacy, and mental illness are among the risk factors of beating and violence (10). Some studies have confirmed that mental health in people is compromised by lack of anger control, and an increase in violence has been identified as a risk factor for driving and beating (11). By the analysis of driving between rough and ordinary people, it was found that the risk of traffic accidents in angry people was twice that of normal people (12). Surveys in different countries suggested that agitation and aggression were associated with risky driving (13). In general, there were conflicting findings of the role of anger control and mental health in the occurrence of traffic accidents and beatings in traumatic patients (14-15). Up to now, the role of mental health has not been studied in anger control. Anger management in interpersonal behavior and quality of life, assessment of anger control, and determination of a relationship between anger management and mental health are important in trauma patients due to the high rates of trauma incidents. Accordingly, this study aimed to compare anger control and its relationship with mental health in trauma patients after an incident for promoting mental health.

Materials and Methods

This cross-sectional study was conducted in Shahid Rajaee Hospital affiliated to Shiraz University of Medical Sciences, Shiraz, Iran. The statistical population included those referred to Shahid Rajaee Hospital in August, September, and October 2019. All the patients referred to the hospital were selected by the census (n=1712). The patients were selected randomly so that out of every eight cases referred to the hospital, one individual was selected using systematic randomization. Among 214 patients who participated in this study, 120 and 94 cases were injured by beatings and traffic accidents, respectively. It is noteworthy to mention that the total number of trauma patients referred to the hospital in this quarter was 1000. The inclusion criteria were trauma patients hospitalized due to beatings and traffic accidents, as well as willingness to participate in the study. The subjects in the study had Glasgow Coma Scale/Score over 13 and good verbal fluency. Furthermore, they were selected from inpatient wards, and their age was 15 years or higher. The patients were then asked to fill out the Novaco's Anger Management and Mental Health Questionnaires (GHQ) and demographic characteristics form. Novaco's standard questionnaire was employed to evaluate the prevalence and anger control management (16). This 30-item questionnaire measures anger, aggression, and hatred. Moreover, the items are rated based on a four-point Likert scale of never (0), rarely (1), sometimes (2), and always (3).

[DOI: 10.32592/jsurgery.2021.9.2.104]

According to this scale, those with scores higher and lower than the average had higher and lower levels of aggression, respectively (17).

(Table 1) tabulates the questions related to each dimension. The reliability of the questionnaire was approved by Cronbach's alpha score of 0.74. Moreover, its validity was confirmed by some expert professors in this field. The Cronbach's alpha of the anger scale in our study was obtained at 97%, which was acceptable. It should be noted that in the Anger Control Questionnaire, higher total scores indicate more aggression (16-18).

Table 1. Dimensions and Properties of Anger Management Scale

Anger dimensions	Number of questions	Questions
Aggressive behavior	12	30,28,27,26,25,24,23,20,19,17,16,15
Aggressive thinking	7	18,21,22,29,9,8,6
Aggression feeling	11	14,13,12,11,10,7,5,4,3,2,1

A standard 28-item GHQ was utilized to evaluate the mental health of the participants. Additionally, to assess the mental disorders, General Health Questionnaire developed by Goldberg and Hillier (1979) was used in this study. This tool has four main scales, namely physical symptoms, anxiety and insomnia, social functioning, and depressive symptoms, each containing seven questions. The questionnaire consists of 28 items assessing physical symptoms (items 1-7), anxiety symptoms and sleep disturbances (8-14), social functioning (15-21), and depression (22-28).

A four-point Likert scale was used to rate the items (options A, B, C, and D=0, 1, 2, and 3, respectively). Therefore, the maximum score of this questionnaire was estimated at 84 (19). After analyzing the results, according to the Likert scoring system, the validity of this questionnaire was determined at 86.5%, and the cut-off point was obtained at 23 (19-20). The reliability coefficients of this questionnaire were obtained at 70% and 90% using Cronbach's alpha and test methods, respectively. In the present study, the Cronbach's alpha of this scale was determined at 93%, which was acceptable (19). Mental health items based on the General Health Questionnaire were rated based on a Likert scale of 0 to 3. In general, 0 and 3 indicated health and lack of mental health, respectively. After collecting the data of the mental health, the two groups of the beatings and traffic accidents were compared in terms of general health, and a more general health score was defined as lower mental health. According to the General Health Questionnaire, the general health scores were divided into two groups of under and above 23. It is worth mentioning that the scores under and above 23 indicated high and low general health, respectively (19-21). In this study, quantitative and qualitative were described using mean±SD and frequency percentage (n%), respectively. Subsequently, the demographic characteristics of the two groups of accidents and beatings were compared by two independent samples t-tests. Furthermore, the total score of each anger and mental health item was calculated, and the Pearson correlation coefficient was utilized to measure the correlation between each item ($P<0.05$).

The study protocol was approved by the Research Ethics Committee of Shiraz University of Medical Sciences, Shiraz, Iran (IR.SUMS.REC. 1396. S205; project number:95-10-38-13765).

Results

According to the results of demographic characteristics, the mean age of the patients was 32.65±8.318 years. (Table 2) tabulates the demographic characteristics of the participants in terms of frequency percentage (%). Out of 214 patients in this study, 120 and 94 cases were traumatized by beatings and traffic accidents, respectively. Anatomically, 57%, 39.7%, and

[DOI: 10.32592/jsurgery.2021.9.2.104]

60.28% of the participants experienced limb injury, as well as penetrative and non-penetrative trauma patterns, respectively. (Figure 1) illustrates the percentage of general health disorders and the ratio of anger according to injury mechanism in the two groups of beatings and accident. According to (Table 3) the mean of general health disorder and anger rate was significantly higher in the beating group, compared to the accident group. Therefore, there was a significant difference between the two groups in terms of general health disorders (t=-15.22; P<0.05) and anger (t=-15.16; P<0.05). On the other hand, a statistically significant and direct correlation was found between anger and General Health disorders (r=0.779; P<0.05). These results suggest that an increase in violence is associated with lower overall health. (Table 4) summarizes the significant relationship of the components of aggressive feeling, aggressive thinking, and aggressive behavior with aspects, such as depression, anxiety and insomnia, social functioning, and physical symptoms in individuals.

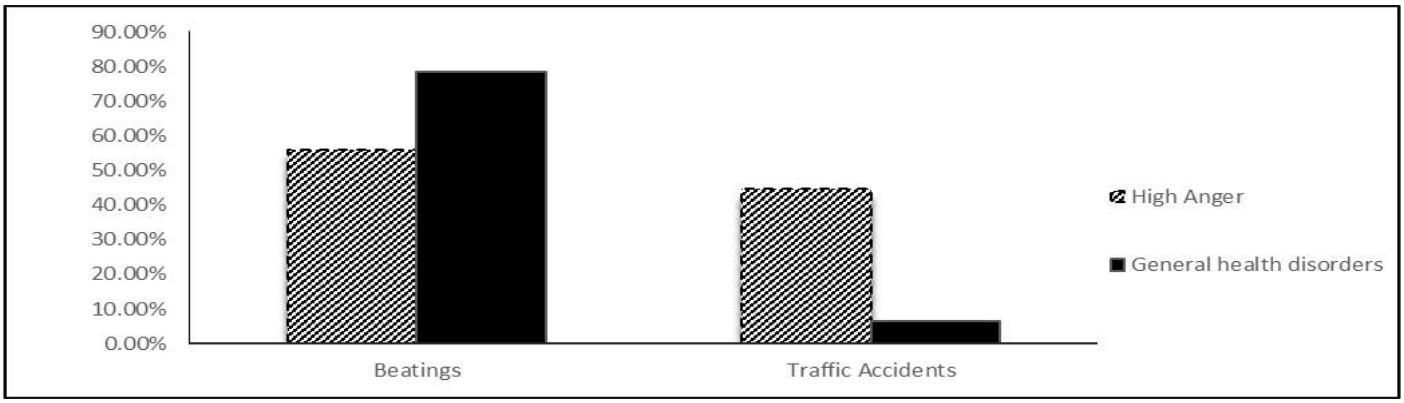

Figure 1: Comparison of the frequency percentage (%) of general health disorders and high levels of anger in the two groups of beatings and traffic accidents.

Table 2. Demographic characteristics of the study sample n (%)

Variables		Beatings n (%)	Traffic Accidents n (%)	Total n (%)
Gender	Male	112 (56.28)	87 (43.72)	199 (100.0)
	Female	8 (53.33)	7 (46.67)	15 (100.0)
Age	Under 29 years	78 (63.9)	44 (36.1)	122 (100.0)
	30-59	38 (47.5)	42 (52.5)	(100.0) 80
	60-above 60	3 (27.3)	8 (72.7)	11 (100.0)
Education level	Illiterate	4 (30.8)	9 (69.2)	13 (100.0)
	Elementary	6 (33.3)	12 (66.7)	18 (100.0)
	Secondary	43 (61.4)	27 (38.6)	70 (100.0)
	Diploma	64 (62.1)	39 (37.9)	103 (100.0)
	Bachelor's degree	3 (33.3)	6 (66.7)	9 (100.0)
Occupational status	Freelancer	9 (52.9)	8 (47.1)	6 (100.0)
	Manual worker	35 (70.0)	15 (30.0)	50 (100.0)
	Unemployed	16 (59.3)	11(40.7)	27 (100.0)
	Employed	2 (25.0)	6 (75.0)	8 (100.0)
	Farmer	4 (80.0)	1 (20.0)	5 (100.0)
	Others	54 (50.5)	53 (49.5)	107 (100.0)
Marital status	Single	64 (64.0)	36 (36.0)	100 (100.0)
	Married	56 (49.1)	58 (50.9)	114 (100.0)

[DOI: 10.32592/jsurgery.2021.9.2.104]

Table 3. Comparison of the mean general health disorders and high levels of anger in the two groups of beatings and traffic accidents

	Injury Mechanism	Mean±SD	P-value
General health disorders	Beatings	32.65±8.318	<0.05
	Accident	18.41±3.95	
High levels of Anger	Beatings	49.45±18.04	
	Accident	18.27±9.18	

Table 4. Correlation coefficient between the components of anger management and mental health (N=214; P<0.05)

	Aggressive feeling	Aggressive thinking	Aggressive behavior	P-value
Physical symptoms	0.721*	0.683*	0.706*	<0.05
Anxiety and insomnia	0.786*	0.759*	0.785*	
Social Performance	- 0.223*	- 0.209 *	-0.245*	
Depression	0.401*	0.480*	0.403*	

*significant level at 0.05

Discussion

Anger, as a major threat to social health, plays an important role in the occurrence of traffic accidents and beatings. An increase in general health, as an effective factor in anger control, plays an important role when encountering difficult conditions (22). The present study included information obtained from psychological components of trauma patients admitted to Shahid Rajaee Hospital, Shiraz, Iran, in August, September, and October 2019. The difference between the means of mental health disorder and anger control was analyzed using the Pearson correlation and t-test. This finding indicated that trauma caused by traffic accidents and beatings was a serious threat for the young and adult population. According to the demographic characteristics, males practice more violence than females, which is justified by the high levels of male sex hormones. The results of this study also indicated the prevalence of violence and mental health disorders in young and single people, compared to married individuals. Moreover, it is worth noting that the beating rate in dealers was more than that in other groups. On the other hand, beating and traffic accidents were lower in farmers. The obtained findings are consistent with the results of other studies in this regard (23-28). In this study, the majority of the patients had diploma education; moreover, most and less than half of them had penetrating and non-penetrating trauma patterns, respectively. This may be justified by the impact of non-penetrating trauma on the severity of damage among them (29-30). These results show that a low number of participants who had accidental injury were unsuccessful in their anger control, which was consistent with the results of other studies (31). In the present study, it was found that the mean general health disorder in people who were hospitalized due to beatings was significantly more than that in the traffic accident group (P<0.05). This finding showed a significant relationship between mental health disorders and an increase in violence. Accordingly, a decrease in mental health disorders can improve anger control in people. Furthermore, all components of anger control showed a statistically significant relationship with those of depression, anxiety and insomnia, as well as physical symptoms. Therefore, an increase in violence can be associated with an increase in physical symptoms, anxiety, insomnia, and depression.

In general, these results showed that an increase in violence could have a strong relationship with the social and physical performance of individuals. As a result, the lack of anger control in people is associated with greater physical and psychological problems and injuries.

[DOI: 10.32592/jsurgery.2021.9.2.104]

The results of this study are in line with the findings of the studies conducted by Lagote (32), Bart (33), Marcus (34), Nova (35), and Trust (36). Studies in this field have shown a significant relationship between an increase in violence and general health disorders in the individual and community (36). Therefore, the main aim of this study was to compare anger control and its relationship with mental health in trauma patients admitted to Shahid Rajaee Hospital after the incident. However, this study was conducted in a level one trauma center in the country to which all mildly and severely injured patients were referred. Additionally, the patients reported here were typical of trauma patients in Shiraz, and the quality of description and severity of injury was high. Few studies have investigated the impact of social and psychological variables on traffic accidents so far, and nonfatal injuries were widely covered in this study. On the other hand, the lack of cooperation of the patients in this study was worth noting; accordingly, it is recommended that the managers help trauma patients by providing them with these educational packages and consultation services for anger control.

Conclusion

Anger, as a major cause of traffic accidents and beatings, annually endangers general health in many people leading to irreparable damages for the country's economy. A low level of education, as well as economic and social poverty, as a cause of anger, can be harmful for the productive population. This finding indicated that the mean of general health disorder and violence in the beating group was significantly more than that in the traffic accident group. Therefore, there was a statistically significant relationship between mental health disorders and violence in both groups. Since violence was a major risk factor in traffic accidents and beating, violence control using the anger control test packages, counseling services and psychotherapy in these patients, as well as a comprehensive review of the causes of anger can play an important role in preventing and reducing such events. Accordingly, the development of training packages tailored to the level of education and the use of various social bases on anger control and emotional management can be effective in preventing and controlling violence damages. Furthermore, these packages can reduce the damages caused by the violence in the community. It is recommended that hospital managers include improving psychiatric and consultation services to control anger in the admitted patients.

Acknowledgments

The authors would like to thank the Shiraz University of Medical Sciences, Shiraz, Iran, the Center for the Development of Clinical Research of Nemazee Hospital, and Dr. Nasrin Shokrpour for editorial assistance.

Funding

This study was funded by Shiraz University of Medical Sciences, Shiraz, Iran.

Conflicts of Interest

There is no conflict of interest.

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[DOI: 10.32592/jsurgery.2021.9.2.104]

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[DOI: 10.32592/jsurgery.2021.9.2.104]