•Original research article•

Factors related to acute anxiety and depression in inpatients with accidental orthopedic injuries

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Background: Those injured in accidents commonly have strong emotional reactions to their situation. However, despite the large number of patients who are admitted to general hospitals each year for orthopedic injuries due to an accident, research focusing on psychological disorders due to these injuries is lacking.

Objective: To investigate the presentation and factors related to depression and acute anxiety among inpatients being treated for injury on a Trauma Orthopedics Unit.

Methods: 323 patients with orthopedic trauma were evaluated using the Injury Severity Score (ISS), Hamilton Anxiety Scale (HAMA) and Hamilton Depression Scale (HAMD).

Results: In this study, a total of 323 inpatients (213 males and 110 females) had a mean (sd) age of 44.3 (13.2) years old. Mean (sd) time in the hospital was 11.1 (5.7) days with a range of 2 to 40 days. Among these patients, 299 had mild trauma, 20 had moderate trauma, and 4 had severe trauma. Patients had a mean (sd) score of 8.1 (4.9) with a range of 1 to 38. The top three most reported symptoms from the HAMA were sleep disorder, gastrointestinal symptoms and anxiety. The top three most reported symptoms from the HAMD were sleep disorder, depression and anxiety. Non-conditional logistic regression analysis showed that being female (anxiety: OR=2.738, 95%CI=1.511-4.962; depression: OR=2.622, 95%CI=1.504-4.570) and duration of hospitalization (anxiety: OR=1.091, 95%CI=1.040-1.145; depression: OR=1.093, 95%CI=1.044-1.144) were risk factors for anxiety and depression among these orthopedic trauma patients.

Conclusion: The main acute symptoms of anxiety and depression in these orthopedic trauma inpatients were sleep disorder, gastrointestinal symptoms, anxious mood and depressed mood. Female patients had stronger emotional reactions to injuries than males. Persistent anxiety and depression symptoms were associated with the duration of hospitalization. All these suggest the need for early psychological assessment and intervention for orthopedic trauma inpatients.

Key words: accidental injury, anxiety, depression, inpatient

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1. Introduction

Accidental injury events generally include four key elements: unintentionality, suddenness, external factors, and non-disease causes. Orthopedic wards in a general hospital receive large numbers of patients who have experienced accidental injury events such as traffic accidents and falling from high places. These patients often have strong psychological post-injury

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stress reactions, including nightmares, uneasiness, sleep and eating disorders, and different degrees of fear, anger, anxiety and depression.[1,2] It was found in previous studies[3] that anxiety symptoms were the most common among psychological stress reactions, and that the degree of anxiety was positively correlated with the degree of depression, (i.e. the more severe the anxiety, the more severe the depression).[4] In China, there has recently been increasing awareness about psychological issues surrounding accidental injuries. However, despite this increasing awareness, most of the research published on this topic has been from outside of China. In this study we explored the presentation and factors related with anxiety and depression in inpatients who have undergone orthopedic trauma.

2. Methods

2.1 Participants

Participants in this study were inpatients at the Shanghai General Hospital Orthopedic Unit between August 2015 and August 2016 who had been injured in an accident (e.g. traffic accident, falling from a high place, etc.). Inclusion criteria were the following: injured in an accident, conscious, without traumatic brain injury, 18 to 65 years old, cooperative, provided written informed
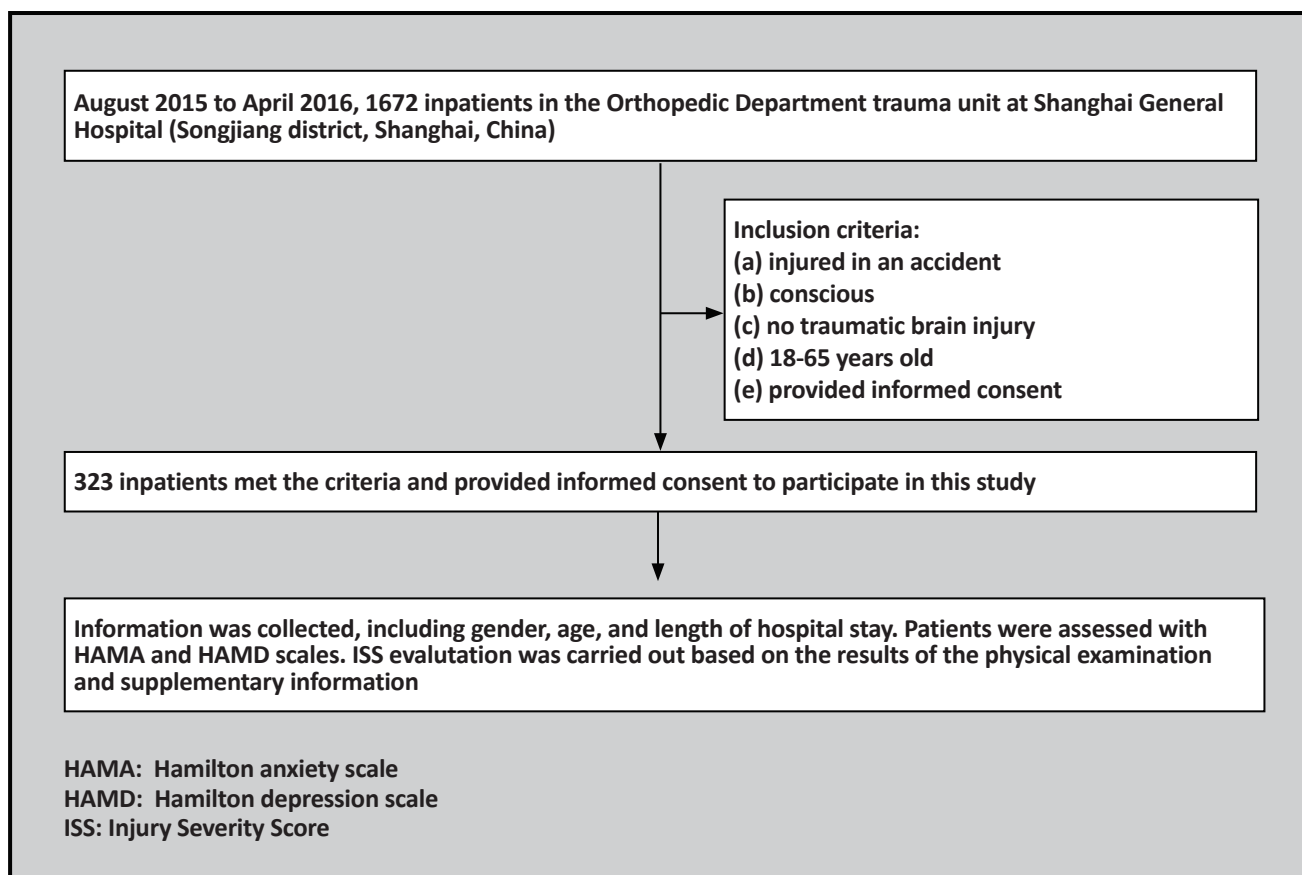
consent to participate in this study. We did not limit according to gender.

2.2 Assessment tools

The Hamilton Anxiety Scale (HAMA), which was compiled in 1959 by Hamilton, was used for the assessment of anxiety symptom severity.[5] In clinical and research psychiatry work in China the HAMA is the most widely used rating scale. It has a reliability coefficient of 0.93 and a validity coefficient of 0.36.[6] The scale consists of 14 items and 2 factors (somatic anxiety and mental anxiety). All items are scored from 0 to 4 points, in which 0 stands for none,1 for mild, 2 for moderate, 3 for severe, and 4 for extremely severe. The higher the total score, the more severe the anxiety symptoms. A total score of 29 points and above indicates severe anxiety. A total score of 21 points and above suggests significant anxiety. A total score of 14 points and above indicates presence of anxiety. A total score of 7 points and below indicates no anxiety. In this paper, a total score of 7 points was set as the positive critical point.

The Hamilton Depression Scale (HAMD), which was compiled in 1960 by Hamilton, was used for the assessment of the severity of depressive symptoms.[7] It is the most widely used scale in psychiatry for the

Figure 1. Flowchart of the study

August 2015 to April 2016, 1672 inpatients in the Orthopedic Department trauma unit at Shanghai General Hospital (Songjiang district, Shanghai, China)

Inclusion criteria:
(a) injured in an accident
(b) conscious
(c) no traumatic brain injury
(d) 18-65 years old
(e) provided informed consent

323 inpatients met the criteria and provided informed consent to participate in this study

Information was collected, including gender, age, and length of hospital stay. Patients were assessed with HAMA and HAMD scales. ISS evalutation was carried out based on the results of the physical examination and supplementary information

HAMA: Hamilton anxiety scale
HAMD: Hamilton depression scale
ISS: Injury Severity Score

evaluation of depression, with the reliability coefficient on the Chinese version of the scale being 0.88-0.99 and a validity coefficient of 0.92.[8] It has three versions, containing 17, 21 and 24 items respectively. In this study, the 17 item version (HAMD-17) was used. Most items on the HAMD are scored from 0 to 4 points, in which 0 stands for none, 1 for mild, 2 for moderate, 3 for severe, and 4 for extremely severe. A small number of items are scored from 0 to 2 points, of which 0 stands for none, 1 for mild to moderate, and 2 for severe. The higher the total score, the more severe the depressive symptoms. A total score of 24 points and above indicates severe depression. A total score of 17 points and above suggests moderate depression. A total score of 7 points and above indicates mild depression. In this paper, a total score of 7 points was set as the positive critical point.

The injury Severity Score (ISS), which was compiled by Baker and colleagues in the 1970s, was used to evaluate the severity of the injury. [9] It has been widely used in other countries, and came into use in China in the 1990s. It quantifies the severity of injury through assessment of medical history, physical examination and auxiliary examination. The higher the score the more severe the persons' condition.[10] A total score of 25 points and above indicates severe injury. A total score between 16 points and 24 points indicates moderate injury. A total score below 16 points indicates mild injury.

2.3 Assessment methods

Every week on two fixed days, two qualified doctors carried out inclusion screening for all patients with accident related injuries hospitalized on these two days. After obtaining informed consent, physical examination and auxiliary examination were conducted, based on the ISS score obtained. At the time, HAMA and HAMD were used for the assessment of emotional symptoms.

The consistency of the scale assessments made by the two doctors was good, with Intraclass Correlation Coefficient (ICC) being 0.92.

2.4 Data entry and statistical analysis

The data were recorded using the Epidata software, and statistically analyzed using SPSS 22.0 software package. Quantitative data were expressed by mean (standard deviation), and qualitative data were described by composition ratio. For quantitative data, rank sum test and χ2 test were used for comparison. Pearson correlation analysis and Logistic regression model analysis were used for the analysis of related factors. Statistical significance level was set at $p<0.05$.

3. Results

A total of 323 patients were included in this study, including 213 males and 110 females, with a mean (sd) age of 44.3 (13.2) years. The length of hospital stay ranged from 2 to 40 days with a mean (sd) stay of 11.1 (5.6) days. Patients ISS scores ranged from 1 to 38 points with a mean (sd) score of 8.1 (4.9). Among them 299 patients had mild injuries, 20 had moderate injuries and 4 had severe injuries. All patients received surgery for their injuries.

3.1 Characteristics of anxiety and depression in patients with accident related injuries

In this study, it was found that, among the 323 included patients, 62 patients had anxiety symptoms, at a rate of 19.20% (95%CI: 14.90% - 23.50%), and 76 patients had depression symptoms, a rate of 23.53% (95%CI: 18.90% - 28.16%). There was a significant positive correlation between anxiety scores and depression scores ($r = 0.87$, $p< 0.001$). Comparing males' and females' HAMA and HAMD scores with the use of the rank sum test, it was found that females' total HAMA scores, somatic anxiety factor scores and mental anxiety factor scores were significantly higher than that of males ($Z = -3.75$, $p< 0.001$; $Z = -2.83$, $p = 0.005$; $Z = -3.35$, $p< 0.001$). Similarly, females' HAMD total scores were also significantly higher than that of males ($Z = -3.21$, $p = 0.001$).

The 3 symptoms most reported by patients from the HAMA scale were insomnia (52.0%), gastrointestinal symptoms (41.8%), and anxious mood (41.2%). Comparing the number of reported symptoms between males and females it was found that female patients reported significantly higher symptoms of anxious mood, fear, memory and attention disorder, as well as gastrointestinal symptoms and conversion symptoms ($χ2 = 5.41$, $p = 0.020$; $χ2 = 4.90$, $p = 0.027$; $χ2 = 4.26$, $p = 0.039$; $χ2 = 4.77$, $p = 0.029$; $χ2 = 4.86$, $p = 0.027$). Details are shown in table 1. Based on the reported number of patients for each item of the HAMD scale, it was found that sleep problems were also prominent. Light sleep (52.3%), early awakening (47.1%), and difficulty in falling asleep (46.8%) were the three most commonly reported, followed by depressive mood (30.0%), mental anxiety (29.7%), and gastrointestinal symptoms (27.6%). Similarly, comparing reported symptoms between males and females, females also reported the following items significantly more: difficulty falling asleep, early waking, loss of interest, agitation, and mental anxiety ($χ2 = 5.44$, $p = 0.020$; $χ2 = 5.13$, $p = 0.023$; $χ2 = 3.96$, $p = 0.047$; $χ2 = 6.34$, $p = 0.012$; $χ2 = 4.02$, $p = 0.045$). Details are shown in table 2.

3.2 Risk factors for anxiety and depression

Pearson correlation analysis showed that the total scores of HAMA, the total score of HAMD, and the somatic anxiety factor scores were positively correlated with the ISS score and the length of hospital stay, and that the mental anxiety factor scores were only positively correlated to the length of hospital stay, as shown in table 3. After further dividing the patients into age groups, it was found that the anxiety and depression scores in the 30 to 44 years age group rose significantly

Table 1. Comparisons of number of male/female patients with anxiety symptoms

Item	Male (n=213)	Female (n=110)	Total (n=323)	χ^2	p
Anxious mood	75	58	133	5.41	**0.020**[*]
Nervousness	37	29	66	2.87	0.090
Fear	35	31	66	4.90	**0.027**[*]
Insomnia	100	68	168	3.08	0.079
Memory or attention disorder	15	16	31	4.26	**0.039**[*]
Depressive mood	58	33	91	0.20	0.657
Muscular symptoms	11	12	23	3.36	0.067
Sensory symptoms	16	12	28	0.97	0.326
Cardiovascular symptoms	21	16	37	1.39	0.238
Respiratory symptoms	15	9	24	0.13	0.722
Gastrointestinal symptoms	77	58	135	4.77	**0.029**[*]
Genito-urinary symptoms	19	15	34	1.53	0.216
Vegetative nerve symptoms	19	14	33	1.03	0.310
Conversion behaviors	25	24	49	4.86	**0.027**[*]

*:Chi-square test was used. The p value of the results obtained were <0.05.

Table 2. Comparisons of number of male/female patients with depression symptoms

Item	Male (n=213)	Female (n=110)	Total (n=323)	χ^2	p
Depressive mood	56	41	97	2.91	0.088
Feelings of guilt	17	16	33	3.06	0.080
Suicide	4	0	4	–	–
Difficulty in falling asleep	86	65	151	5.44	**0.020**[*]
Light sleep	100	69	169	3.45	0.063
Early awakening	87	65	152	5.13	**0.023**[*]
Loss of interest	21	20	41	3.96	**0.047**[*]
Retardation	13	5	18	0.32	0.574
Agitation	28	28	56	6.34	**0.012**[*]
Mental anxiety	54	42	96	4.02	**0.045**[*]
Somatic anxiety	34	24	58	1.39	0.239
Gastrointestinal symptoms	50	39	89	3.78	0.052
Systemic symptoms	10	6	16	0.09	0.771
Sexual symptoms	0	0	0	–	–
Hypochondria	1	0	1	–	–
Weight loss	1	1	2	0.23	0.634
Insight	1	0	1	–	–

*: χ^2 test was used. The p value of the results obtained was <0.05.

as the ISS score increased, and that the increase of somatic anxiety scores in the elderly group (i.e.>60 years old) was related to the increase of ISS scores, as shown in table 4.

Table 3. Correlation analysis of Injury Severity Score, length of hospital stay, and anxiety/depression symptoms

	ISS		Length of hospital stay	
	r	*p*	*r*	*p*
HAMA[a] total score	0.11	0.021*	0.18	**<0.001***
Somatic anxiety	0.18	0.001*	0.18	**0.001***
Mental anxiety	0.07	0.115	0.16	**0.002***
HAMD[b] total score	0.12	0.016*	0.22	**<0.001***

*:Spearman correlation analysis was used. The *p* value of the results obtained was <0.05.
[a]Hamilton Anxiety Scale;   [b]Hamilton Depression Scale

Table 4. Correlation analysis of Injury Severity Score and anxiety/depression symptoms of different age groups

	<29 years (n=58)		30-44 years (n=89)		45-59 years (n=122)		>60 years (n=54)	
	r	*p*	*r*	*p*	*r*	*p*	*r*	*p*
HAMA[a] total score	-0.18	0.085	0.24	**0.013***	0.13	0.077	0.09	0.270
Somatic anxiety	-0.01	0.480	0.19	**0.036***	0.14	0.066	0.30	**0.013***
Mental anxiety	-0.20	0.069	0.23	**0.015***	0.10	0.130	-0.06	0.326
HAMD[b] total score	-0.09	0.263	0.27	**0.006***	0.11	0.125	0.03	0.411

*: Spearman correlation analysis was used. The *p* value of the results obtained was <0.05.
[a]Hamilton Anxiety Scale;   [b]Hamilton Depression Scale

The results of non-conditional logistic regression analysis with gender, age, length of hospital stay, and ISS score as independent variables showed that gender (male 0 and female 1) and length of hospital stay (actual days) fit into the regression equation. It was suggested that being female (anxiety: OR=2.738, 95%CI=1.511-4.962; depression: OR=2.622, 95%CI=1.504-4.570), and length of hospital stay (anxiety: OR=1.091, 95%CI=1.040-1.145; depression: OR=1.093, 95%CI=1.044-1.144) were risk factors for anxiety and depression for inpatients in the Orthopedics unit. See table 5.

4. Discussion

4.1 Main findings

Patients with accident related injuries often present with differing degrees of anxiety and depression, suffering psychologically as well as physically. The results of this study are consistent with previous studies. Compared to males, females are more susceptible to these kinds of sudden stress events,[11, 12, 13] and demonstrate more intense emotional symptoms. Judging by the gender differences in the number of reported symptoms from HAMA and HAMD, females tend to demonstrate overly-activated anxiety symptoms such as nervousness, fear, and agitation. A large epidemiological study in the United States found that the lifetime prevalence of anxiety disorders in females was about two times that of males.[14] Magnetic resonance imaging studies revealed that different genders had different cognitive changes when experiencing negative emotions; compared to males, females had more evident agitation in emotion-related brain regions such as the amygdala and orbitofrontal cortex, hence stronger emotions induced by negative events.[15] In addition, the traditional social culture has different gender expectations; the demand for females is lower than for males. Females in a disadvantaged position are more likely to express their inner feelings. Males are prone to be looked down upon and emotional expression is regarded as a sign of weakness, when expressing emotions such as fear and nervousness. Therefore, males tend to suppress their emotions and calm down.

The results of this study were similar to those of studies conducted outside of China. Prominent symptoms seen in the patients were mostly sleep disorder, gastrointestinal symptoms, anxiety and depression. Injuries stress patients both physically and psychologically and causes the body to produce an adaptive response after the physical trauma. In these cases the sympathetic system is overly activated, resulting in a series of neuroendocrine changes.[16] Although the majority of patients are prone to have poor sleep and loss of appetite due to reasons such as pain, surgical trauma, and surroundings, it is also important in clinical work to consider gastrointestinal symptoms caused by emotional disorder. In a general hospital setting, a large number of patients with anxiety and depression often first visit neurology, gastroenterology or sleep medicine units. A post-earthquake investigation of insomnia patients found that the severity of insomnia had a significant positive

Table 5. Logistic regression analysis of risk factors for anxiety and depression in patients with accidental injuries in the Department of Orthopedics

		B	S.E.	Wald	df	p	Exp(B)	95%CI of Exp (B)	
								Lower limit	Upper limit
Anxiety	Gender	1.007	0.303	11.028	1	**0.001**	2.738	1.511	4.962
	Length of hospital stay	0.087	0.024	12.783	1	**<0.001**	1.091	1.040	1.145
Depression	Gender	0.964	0.284	11.554	1	**0.001**	2.622	1.504	4.570
	Length of hospital stay	0.089	0.023	14.390	1	**<0.001**	1.093	1.044	1.144

*: Nonconditional Logistic regression analysis was used. The p value of the results obtained was <0.05. Assignment for Gender: male=0, female=1, length of hospital stay = actual length of hospital stay in days

correlation with anxiety, depression and posttraumatic stress response.[17] Sleep disorder is one of the earliest symptoms of mood disorder, and can be a good indication of the existence of possible emotional symptoms, excluding effects such as somatic factors and surroundings. Previous studies have shown that psychological stress affects gastrointestinal processes, inhibits gastric draining, increases colonic pressure, and that the greater the stress intensity, the more evident the effect.[18] A large amount of data have shown that anxiety and depression may cause immune system dysfunction, lead to decreased antibody formation, inhibited lymphocyte proliferation, decreased activity of natural killer cells,[16] and hinder recovery from injury.

The more severe the injury, the more complex the injury induced bodily response and more systems affected. In the results of this study, the ISS scores were positively related to somatic anxiety scores, with possible causes including: severe bodily injuries increased the degree of psychological stress and aggravated symptoms of anxiety and depression, thus leading to an increased number of aggravated secondary physical symptoms. In addition, the use of HAMA and HAMD scales in general hospitals had limitations in differentiating primary somatic symptoms from secondary somatic symptoms caused by anxiety and depression. It could be easily affected, leading to an increase of somatic anxiety scores. Across different age groups, it was found that anxiety and depression symptoms of 30-44 year olds increased significantly according to the severity of injury, a finding that is consistent with the results of previous research. It was likely related to the characteristics of this age group that young-to-middle aged patients with injuries were prone to have adverse psychological status.[12, 13] As the main force in the family and at work, young-to-middle aged people are generally quite healthy. They may have had no previous incidence of injury or serious disease and therefore aren't used to be being in poor health like the elderly are. Moreover, hospitalization has a huge impact on their work and financial status. Therefore the burden is heavier on this age group than it would be for the elderly.

In the results of this study, the degree of anxiety and length of hospital stay were positively correlated, which

is similar to the results of previous studies. Patients with a higher degree of anxiety have higher treatment requirements, and are sensitive to physical discomfort. In these patients, there is a tendency towards prolonged hospital stays and over-treatment.[19] Studies showed that the risk of suicide in patients with anxiety and depression who had comorbid physical illness was 8 times higher than that of the general population. [20] The degree of anxiety and the occurrence of Post-Traumatic Stress Disorder (PTSD) also are closely related. [21] As one of the most severe stress disorders, PTSD has delayed symptoms and a large impact on individuals, which may lead to the loss of social functioning to some degree.

4.2 Limitations

In this study, there were only a few severe injury cases. ISS, HAMA, and HAMD scores were concentrated in the low score region, which could lead to low R value in the correlation analysis, and ISS score not being able to enter the Logistic regression analysis. The application of HAMA and HAMD in our unit is quite limited. These scales are unable to distinguish between primary and seconday somatic symptoms. Therefore scales more sensitive in assessing anxiety and depression are needed in future studies.

In the pre-experimental stage, we tried to use self-rating scales for the assessment of anxiety and depression such as GAD-7 and PHQ-9. However due to factors such as severity of injury, low education level, and hospital environment, the completion of these questionnaires was not ideal. Therefore, other-rating scales were used instead during the implementation of this study, in order to improve the questionnaire completion rate. Hence, there was a lack of assessment using self-rating scales from the patient's perspective. The HAMA and HAMD scales used in this study had some limitations in the evaluation of stress symptoms, lacking a systematic measurement of stress responses.

Factors such as economic income, hospitalization expenses, family environment and social support, and past injury experience were also factors influencing the emotions of the patients. In future research work, we plan to collect economic data such as family income and hospitalization expenses, and further assess using

the family environment scale, social support scale, and trauma experience scale.

This study was a cross-sectional study and a relationship between injury severity and emotional disorder was found. However, this kind of research does not indicate cause and effect, only factors related to one another.

4.3 Implications

In this study, it was found that acute anxiety and depression symptoms in participants presented as sleep disorder, gastrointestinal symptoms and anxious or depressed moods. Female patients tended to have a stronger emotional reaction towards their injuries than did male participants. The persistence of anxiety and depression symptoms was related to the length of hospital stay, suggesting that, in addition to the existing measures such as pain management and sleep health education, early psychological assessment and intervention should be carried out as well. This could be helpful to alleviate patient's fearful emotions, improve mood symptoms, increase treatment compliance, and promote the patient's physical rehabilitation, as well as reducing the length of hospital stay.

Conflict of interest statement

The authors declare no conflict of interest related to this study

Ethical approval

Approval was granted by Shanghai General Hospital Human Research Ethics Committee (2015KY147)

Informed consent

Informed consent was obtained from all participating patients.

Authors' contributions

Hui Wu and Fang Zhang were responsible for the implementation of this specific research project.

Hui Wu wrote the manuscript.

Wenhong Cheng and Ying Lin provided guidance to the project design and implementation, and revision of manuscript.

Qian Wang was responsible for the collection of patients' injury data.

意外伤骨科住院患者急性焦虑抑郁影响因素调查

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背景： 意外伤害事件易致受伤者产生强烈的情绪反应。国内对此类心理状况变化越来越重视，但针对该人群情绪反应的调查不足。综合医院骨科病房存在大量意外伤患者，目前缺少针对该人群情绪反应调查。

目的： 探讨意外伤骨科住院患者急性焦虑抑郁表现及影响因素。

方法： 对 323 例意外伤骨科住院患者进行创伤严重度评分（Injury Severity Score，ISS）、汉密尔顿焦虑量表（Hamilton anxiety scale, HAMA）、汉密尔顿抑郁量表（Hamilton depression scale, HAMD）评估。

结果： 本调查共入组患者 323 例，其中男性 213 例，女性 110 例，平均年龄 44.32 (13.17) 岁；住院时间 2-40 天，平均住院时间 11.09 (5.64) 天。轻度创伤 299 人，中度创伤 20 人，重度创伤 4 人。ISS 评分 1-38 分，平均 8.09（4.86）分。HAMA 量表报告人数最多的前 3 位症状分别为睡眠障碍、胃肠道症状和焦虑心境；HAMD 量表报告人数最多的前三位症状为睡眠障碍、抑郁情绪和精神性焦虑。非条件 Logistic 回归分析显示女性（焦虑：OR=2.738, 95%CI=1.511-4.962; 抑郁：OR=2.622, 95%CI=1.504-4.570）、住院时间长（焦虑：OR=1.091, 95%CI=1.040-1.145; 抑郁：OR=1.093, 95%CI=1.044-1.144）为骨科意外伤患者发生焦虑抑郁的危险因素。

结论： 意外伤骨科住院患者急性焦虑抑郁症状集中在睡眠紊乱、胃肠道症状和焦虑抑郁情绪，女性患者对于意外伤的情绪反应较男性更强烈，焦虑抑郁症状持续存在与患者住院时间长相关，提示需要对意外伤骨科住院患者进行早期心理评估及干预。

关键词： 意外伤，焦虑，抑郁，影响因素

References

1. Jiang KD. [*Psychiatry 2nd Edition*].Beijing: People's Medical Publishing House; 2010. p: 186-201. Chinese

2. Liao J, Ren H. Research status of psychological problems in trauma patients. *Zhongguo Xian Dai Hu Li Za Zhi.* 2015; **16**(15): 1858-1860.Chinese. doi: http://dx.chinadoi.cn/10.3760/cma.j.issn.1674-2907.2010.15.049

3.   Yang Y, Su W, Zheng Z. [Psychological reaction of parents on their dead children in the fire of Karamay City]. *Zhongguo Yi Xue Lun Li Xue.* 1999; **6**: 28-29. Chinese

4.   Wang X, Zhao C, Xinfu S, Zhang F, Fan Q, Lv Q. [The incidence and influencing factors of traumatic stress disorder after earthquake]. *Zhongguo Jing Shen Wei Sheng Za Zhi*. 1999; **13**(1): 28-30. Chinese

5.   Hamilton M. The assessment of anxiety state by rating. *Br. J. Med. Psychol*. 1959; **32**: 50-55. doi:http://dx.doi.org/10.1111/j.2044-8341.1959.tb00467.x

6.   Wang X, Wang X, Ma H. Handbook of Mental Health Rating Scale. *Zhongguo Jing Shen Wei Sheng Za Zhi*. 1999; **12**: 253-256. Chinese

7.   Hamilton M. A Rating Scale for Depression. *JNNP.* 1960; **23**: 56-62. doi: http://dx.doi.org/10.1136/jnnp.23.1.56

8.   Wang XD, Wang XL, Ma H. [Handbook of mental health rating scale]. *Zhongguo Xin Li Wei Sheng Za Zhi*. 1999; **12**: 121-126. Chinese

9.   Baker SP, O'Neil B, Haddon W, Long WB. The injury severity score: a method for describing patients with multiple injuries and evaluating emergency care. *J Trauma*. 1974; **14**(3): 187-96. doi: http://dx.doi.org/10.1097/00005373-197403000-00001

10.   Zhu PF. [To further promote the development of scoring trauma in China]. *Zhong Hua Chuang Shang Za Zhi*. 1998; **14**(3): 131-134. Chinese. doi: http://dx.chinadoi.cn/10.3760/j:issn:1001-8050.1998.03.002

11.   McLain SL, Morland LA, Shapiro JA, Foy DW. Etiological factors in posttraumatic stress disorder in children: Comparing child abuse to other trauma types. *Family Violence & Sexual Assault Bulletin*. 1998; **14**: 27-30

12.   He XY, Wang R, Ma LH, Li CC. [Psychological status and it's correlation factors of inpatients with multiple trauma]. *Zhongguo Jian Kang Xin Li Xue Za Zhi*. 2016; **8**: 1141-1144. Chinese

13.   Li Y, Zhao XM, Chen CC. [Current state of psychological resilience and its influencing factors in patients with traumatic fractures]. *Xian Dai Yu Fang Yi Xue*. 2016; **43**(9). Chinese

14.   Elkit A, Petersen T. Exposure to traumatic events among adolescents in four nations. *Torture*. 2008; **18**(1): 2-11

15.   Sun Y, Hou XH. [Psychological stress and disorders of gastrointestinal motility]. *Zhonghua Shi Yong Nei Ke Za Zhi*. 2006; **26**(10): 725-726. Chinese. doi: http://dx.chinadoi.cn/10.3969/j.issn.1005-2194.2006.10.003

16.   Hou J, Yang JP. [Progress in the study of the relationship between psychological stress and the function of the hypothalamic–pituitary–adrenal axis]. *Shi Yong Lin Chuang Yi Xue*. 2006; **7**(11): 202-204. Chinese. doi: http://dx.chinadoi.cn/10.3969/j.issn.1009-8194.2006.11.121

17.   Ge SL. [Emotional observation and psychological care of 20 young patients with trauma]. *Yi Xue Xin Xi*. 2013; **26**(4): 452-453. Chinese. doi: http://dx.chinadoi.cn/10.3969/j.issn.1006-1959.2013.07.487

18.   Shang L, Wang ZQ. [Posttraumatic stress disorder and the predictors]. *Zhongguo Lin Chuang Kang Fu*. 2005; **9**(16): 128. Chinese. doi: http://dx.chinadoi.cn/10.3321/j.issn:1673-8225.2005.16.076

19.   Tseng MC, Cheng IC, Hu FC. Standardized mortality ratio of inpatient suicide in a general hospital. *J Formos Med Assoc*. 2011; **110**(4): 267-269. doi: http://dx.doi.org/10.1016/s0929-6646(11)60040-5

20.   McLean CP, Asnaani A, Litz BT, Hofmann SG. Gender differences in anxiety disorders: prevalence, course of illness, comorbidity and burden of illness. *J Psychiatr Res*. 2011; **45**(8): 1027-1035. doi: http://dx.doi.org/10.1016/j.jpsychires.2011.03.006

21.   Koch K, Pauly K, Kellermann T, Seiferth NY, Reske M, Backes V, et al. Gender differences in the cognitive control of emotion: an fMRI study. *Neuropsychologia*. 2007; **45**(12): 2744-2754. doi: http://dx.doi.org/10.1016/j.neuropsychologia.2007.04.012

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