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Severity of symptoms of depression among burned patients one week after injury, using Beck Depression Inventory-II (BDI-II)

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ABSTRACT

Background: This study was done to determine the severity of symptoms of depression in burned patients and to assess the effect of burn related factors on depression.
Materials and methods: This is a descriptive cross-sectional survey, performed in Burn center, Motahhari hospital, Tehran University of Medical Sciences, Iran. The population of the study included 300 hospitalized patients from April 2010 to May 2011 who were assessed for symptoms of depression one week after burn injury by Beck Depression Inventory-II.
Results: Three hundred subjects (50% female and 50% male) participated in the study. Age ranged from 13 to 75 with the mean of 35.06 ± 12.79 years. 184 (61.3%) had symptoms of depression, 58 (19.3%) of them mild, 52 (17.3%) moderate and 74 (24.7%) severe depression symptoms. There was a significant relationship between symptoms of depression and age, gender, educational level, TBSA%, number of burn sites and amputation (p value < 0.05).
Conclusion: The high prevalence of symptoms of depression in burned patients suggests that depression should be screened in such patients and treat if indicated.

1. Introduction

Burn injuries are of the main causes of mortality and disability all over the world, according to the World Health Organization, 238,000 individuals died of fire-related burns in 2000 and 95% of these deaths occurred in low- and middle-income countries [1]. These injuries are 5–12% of the world accidents which cause damages physically and psychologically [2,3]. Patients suffering from burn injury may also lose their main job, and need to pay for medical surgical, psychological and rehabilitation care. Many may also suffer from delirium, depression, post-traumatic stress disorder (PTSD), and loss of their normal appearance [1]. In recent decades, due to development of burn centers and improvement of treatments, the survival rate of large burn injuries is increasing [4,5].

Nowadays depression is increasing in developing countries [6]. Almost half of these depressed patients do not seek treatment which consequently leads to resistance and relapse of the disease [7]. Among burn survivors, the body image dissatisfaction and functional impairment are important factors that associate with depression [8,9].

The psychological aspect of burn injury have various outcomes in different parts of the world [10–12] and also

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makes hospitalization, longer and sometimes even affects the whole life [13–16]. Stress disorders are reported to occur after burn injuries in 18–33% of cases [1]. Some studies estimated that the rate of depression is 22% in 139 burned patients using Beck depression inventory [9,17] and 39% in 129 burn survivors using BDI [18,19] and also reported that the prevalence of mild to moderate depression is 23–26%[20] and major depression is 4–10%[21]. Differences between standards and criteria used, is the reason for different results.

In Iran there are reports about self-immolation, and some studies like Sadeghi–Bazargani's study [1] talked about PTSD after burn injury, which showed that 20% of patients had positive PTSD screening test in first 2 weeks that increased to 31.5% after 3 months [1], but the rate of depression in burn victims had not been well studied in our country. So we performed this study to survey depression symptoms prevalence, determine demographic distribution of these symptoms after burn and to assess the effect of burn related factors on mental status.

2. Materials and methods

This descriptive cross-sectional survey was performed in Burn Center, Motahhari Hospital, Tehran University of Medical Sciences, Iran, the population of the study included 300 (150 female and 150 male (to compare the effect of sex)), hospitalized patients from April 2010 to May 2011, whom were assessed for severity of symptoms of depression one week after burn. All the participants were selected sequentially and all of them were more than 13 years and willing (and/or their parents) to participate in the study, they were included despite the mode of referral. We evaluated the symptoms one week after burn, after stabilization of the patients and before any psychological medications started to eliminate medication effect over results. The patients receiving psychological medication were excluded from the study. Permission was obtained from all patients or their parents to participate in our study. Patients with previous depression, other known psychiatricor medical disorders (such as drug abuse or medical condition which causes depression) and ones who need ventilator support were excluded from the study. We had no self-immolation or assaults.

Data were collected by observation, history taking and physical examination, interview and filling questionnaire. We had a data collection form, and also Beck Depression Inventory II that has been translated, valid and reliable for Iranian population [22], both filled by the patient or a nurse helped if needed. The BDI-II is a 21 items self-administered questionnaire, one of the most widely used instruments for measuring the severity of symptoms of depression for individuals aged 13 and over. It is not meant to serve as an instrument of diagnosis, but rather to identify the presence and severity of symptoms consistent with the criteria of the DSM-IV [23,24]. The score less than 14 are defined as non-depressed, 14–19 is mild, 20–28 moderate and 29–63 is severe symptoms of depression. Differences between various groups evaluated, using Chi-square test and ANOVA. The level of significance was set at 0.05 and Bonferroni correction was done for multiple comparisons, statistical processes was performed, using SPSS (version 19).

Table 1 – The prevalence of Beck depression subgroups and their relationship with studied variables.

		Non-depressed (%)	Depressed			*p*-Value
			Mild (%)	Moderate (%)	Severe (%)	
Frequency		116 (38.7)	58 (19.3)	52 (17.3)	74 (24.7)	
Age	13–20	17 (56.7)	1 (3.3)	3 (10.0)	9 (30.0)	0.000
	21–30	33 (31.1)	25 (23.6)	15 (14.2)	33 (31.0)	
	31–40	14 (21.9)	12 (18.8)	14 (21.9)	24 (37.5)	
	41–50	30 (64.2)	15 (23.1)	17 (26.2)	3 (15.8)	
	51–60	9 (47.4)	5 (26.3)	2 (10.5)	3 (15.8)	
	61–70	13 (86.7)	0 (0)	0 (0)	2 (13.3)	
	71–75	0 (0)	0 (0)	1 (100)	0 (0)	
Gender	Male	61 (40.7)	35 (23.3)	28 (18.7)	26 (17.3)	0.02
	Female	55 (36.7)	23 (15.3)	24 (16.0)	48 (32.0)	
Marital status	Single	37 (40.7)	17 (18.7)	19 (20.9)	18 (19.8)	0.4
	Married	79 (37.8)	41 (19.6)	33 (15.8)	56 (26.8)	
Level of education	Illiterate	17 (43.6)	2 (5.1)	7 (17.9)	13 (33.3)	0.003
	School	87 (38.8)	41 (18.3)	44 (19.6)	52 (23.2)	
	University	12 (32.4)	15 (40.5)	1 (2.7)	9 (24.3)	
TBSA%	0–25	93 (44.5)	42 (20.1)	35 (16.7)	39 (18.7)	0.001
	26–50	15 (20.8)	13 (18.1)	15 (20.8)	29 (40.3)	
	51–75	8 (50.0)	3 (18.8)	0 (0)	5 (31.3)	
	76–100	0 (0)	0 (0)	2 (66.7)	1 (33.3)	
Burn site	Single	83 (46.6)	33 (18.5)	27 (15.2)	35 (19.7)	0.005
	Multiple	33 (27.0)	25 (20.5)	25 (20.5)	39 (32.0)	
Amputation	Yes	5 (20.8)	7 (29.2)	7 (29.2)	5 (20.8)	0.12
	No	111 (40.2)	51 (18.5)	45 (16.3)	69 (25.0)	