Depression in Burn Patients at Al-Diwaniya Teaching Hospital

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Abstract

Background

Burn injuries affact on physical and mental status of the victum.
The researchers show different outcome in their articles when they study depression in burned patients.

Aim of the study

The study aims are : 1. identify the prevalence rate of depression in burn patients. 2.measure severity of depression .3. study the socio-demographic variables of those patients.

Methods

A case –control study was condefed on One hunderd patients at the burn unit of AL-Diwaniya Teaching Hospital from a period of April 2nd 2014 to January 2nd 2015.
the presence of depression was diagnosed by using a semi –structured interview schedule based on ICD-10, diagnostic criteria for depression ,and its severity was rated by Beck depression inventory.

Results

The result revealed the depression was found in 40% of burned patients compared with 15% among their matched control group and this result was statistically significant .the rate of depression was higher for females than males,according to the Beck Depression Inventory (BDI), the majority of depression patients (60%) were of moderate severity.

Conclusion

The prevelence of depression was 40(40%) patients . There is a close association between burn related variables and depression
The study show the importance of evaluation and management of depression in burn injured patients

Keywords: depression, burn

Introduction

Depression is a psychiatric disorder, characterized by persistent decreasing of mood, loss of interest in the usual activities and lowering of ability to experience pleasure[1].

While the term "depression" is commonly used to describe a temporary decreased mood when one "feels blue", clinical depression is a serious illness that involves the body, mood, and thoughts that cannot simply be went away. "It is often a disabling disease that affects a person's work, family and his study, sleeping and eating habits, general health and ability to enjoy life". The course of clinical depression varies widely: depression can be a once in a life-time event or have multiple recurrences, it appear either gradually or suddenly, and either last for few months or continue as a life-long disorder. " Having depression is a major risk factor for suicide; in addition, people with depression suffer from higher mortality than other causes[2]".

Depressed mood may be just a normal reaction to certain life events, a symptom of some medical diseases and a side effect of some drugs.[3]

When although the characterization of an episode as mild,moderate,or severe may seem overly broad,it potentially helps inform management by suggesting which episode may require intensive,combined or inpatient treatments. In addittion,more severe depressive episodes have atendency to recure more freguently and may require a longer duration of treatment[4]

Epidemiology

" Depression affects about 7–18% of the population on at least one occasion in their lives, before the age of 40. In some countries, such as Australia, one in four women and one in six men will suffer from depression. In Canada, major depression affects approximately 1.35 million people and in the USA approximately14 million adults per year[4]".

Depression is twice as common in women[5]. This finding emerges only after adolescence ,befor this period ,rates are similar.

Reasons for this gender difference may include hormonal differences , social factors , or an unequal exposure to abuse and stressful events[6].

Depression is more common in the unmarried compared with the married person[7]. Someone who has had one episode of depression may be more than normally likely to has more episodes in the future. Depression is a common cause of disability in United States as well as other countries, and is expected to become the second cause of disability worldwide (after heart disease) by the year 2020, according to the World Health Organization[8].

Early childhood trauma and adverse life events are associated with an increased risk for developing depression ,particularly sever types.other types of trauma,such as loss of a parent,also have been associated with the development of depression[9].

"In adulthood,the presence of a negative life event has been shown consistently to be a risk factor for major depression .the categories of loss and humiliation appear to predict the onset of depression"[10].

The chance of developing major depression is usually higher in patients with family history of depression .further more ,a family history of major depression appears to confer a risk of developing severe,recurrent and possibly early-onset major depression .Rate of depression among people in the community who have experienced a negative life event are significantly higher in those with a family history[11].

"Independent of family history ,the most consistent sociodemographic risk factor for the development of depression is female gender"[12] .

Interactions between genes and the environment are becoming increasingly delineated[13].

No single gene has been identified as a major cause of depression rather,genetic vulnerabilities may be the result of small ,additive,and interactive effects of many genes[14].

Many articles have shown that close relatives of patients who have recurrent depression have an increased risk two to four times that of control subjects for having depression.factors that confer a greater degree of heritability are age at onset before 30 years,recurrence,presence of psychotic symptoms,and presence of certain comorbidities[14].

Amine changes may predispose to depression,or be altered as consequences of it[15] .

Burned patients:

Burn scars after skin injury are asthetically disfiguring and forced the patient to deal with an alteration in appearance of scar. Also pain associated with treatment induce psychopathological responses.Problems in psychological areas are more disabling than physical problems.Social problems include sexual life problems and social interactions. Mediating variables such as low social support,avoiding coping styles and personality traits such as neuroticism and low extroversions negatively affect adjustment after burn injury. "Quality of life is intially lower in burn patients compared to genral population but it improves over a period of many years"[16].

Burn injuries are type of trauma which affect the victim both physically and psychologically[17] .No one is immune from burn though ,studies show four high risk groups that comprise the high percent victims of severe burn trauma, very young ,very old , unlucky and careless[18].

There are several problems to which the recently burned patients are subjected .They are primarily threat to life ,fear of ugly scar ,prolonged physical discomfort ,multiple anasthesia and surgical operations and a long tedious convalescence[19].

After the initial few days the problems of pain and inability to sleep become very important.It is difficult for the patient to adapt to his new surroundings, especially when he is in the intensive car of a specialized unit. His inability to move and to find a comfortable position puts him in almost constant fear[20]. "In last decades, the increase in survival rate following burn injury has prompted an increased focus on problems of rehabilitation, psychosocial adjustment and psychosocial concomitant"[21]. The psychological status of burn injury have been studied in different parts of world producing different results[22,23]. "In the United States, there are almost 50,000 hospitalizations for burn injuries annually "[24]. Whereas the overall incidence of burn injuries has decreased in recent decades [25], the percent of patients who survive large burn injuries has increased because of the development of good burn centers and improvements in management[26,27]. "The psychological and emotional aspects of burns patients are largely ignored, while care is concentrated on physiological recovery process. The different stages of adjustment and psychological challenges,a burn patient experiences are highlighted in various studies". This involves a complex interplay of patient's characteristics before injury, moderating environmental factors and the nature of injury and ensuing medical care.[28].

Psychological stress of being burned and of requiring all the techniques of

resuscitation and care is added to the physiological stress of severe injury .Proper resuscitation will minimize physiological stress .It is the goal to do every thing possible to minimize psychological stress[20].

The physician should be aware of multiple advantages to the patients of a comprehensive and effective rehabilitation team .The general surgeon ,plastic surgeon and psychiatrist should encourge development of their teams to promote this effort[29].

Patients and method

The study was done at the burn unit in Al-Diwaniya Teaching Hospital and Specialized burn center at AL Diwaniya, for a period of 3 years commencing from April 2014 and concluded in Septomper 2017

Data colloction tool composed of questionaire having two section including socio-deomographic information and burn related information

Socio-demographic informations involved the age, gender, education status, marital status and occupation .Burn related informations include the body surface area of burn ,localization and cause of burn.

One hunderd patients agreed to participate in the study, of these 100 participants,60 were female and 40 were male, they were of different age groups(15-65 years) and of different marital ,educational, occupational status (table 1)

The patients were selected randomly from the burn unit taking every 3rd patient.

Inclusion criteria

.1.Patients age from 15 to 65 years

2.Patients should have willingness to participate in the study

.Patients being able to communicate or understand their interviewer.3

.4.Burns of mild to moderate severity ranging where the percent of burn from 10% to 50% of the total body surfcae area.

Exclusion criteria

.1.participants who can not communicate or understand their interviewer.2.participants who are unwilling to participate.

3.Patients who have major psychiatric and mental disorders and past history of epilepsy and mental retardation.

4.Large degrees of burns (more than 50%) and burns with inhalational injury and those patients who were unable to talk .

Apparatus:

Each patient was assessed for the presence of depression by using a semi –structured interview schedule based on the "International Classification of Diseasses tenth revision (ICD-10), diagnostic criteria for depression (the Arabic version which translated and used in previous Iraqi thesis)[3,,0] .

The patients were given a concise version of Beck Depression Inventory (13 items),which is a self report instrument to measure severity of depression in adults.The validity of BDI has been confirmed .According to BDI index, fall in to three categories:

i- Mild = 5-7 , ii-Moderate=8-15, iii-sever ≥ 16 (

In order to achieve comparability with burn group, one hunderd normal controls(60 females and 40 males) were selected and matched for age and sex with the patients group(they were selected mainly from patients relatives)

Statistical analysis:

"Data were subjected to statistical analysis using the Statistical Package for the Social Sciences (SPSS-version 20) program, and chi-square association test was used .P value of ≤ 0.05 was considered statistically significant"

Results

One hunderd burned patients participated in the study. For whole data, percentage were calculated, and inorder to determine whether data are statistically significant (chi-square) was performed whenever applicable.

The socio- demographic characteristic of study sample:

Table 1-Socio_demographic characteristics of patients

Characteristic	Total		Male		Female	
	No.	%	No.	%	No.	%
Sex	100	100.0	40	40.0	60	60.0
Age groups						
15-24	45	45.0	15	37.5	30	50.0
25-34	35	35.0	16	40.0	19	31.6
35-44	13	13.0	7	17.5	6	10.0
45-54	6	6.0	2	5.0	4	6.6
More than 55	1	1.0	0	0	1	1.6
Marital state						
Single	45	45.0	20	50.0	25	41.6
Married	50	50.0	20	50.0	30	50.0
Widows, widowers	2	2.0	0	0	2	3.3
Divorced	3	3.0	0	0	3	5.0
Education						
Illiterate	10	10.0	2	5.0	8	13.3
Primary	33	33.0	13	32.5	20	33.3
Secondary	32	32.0	14	35.0	18	30.0
University	25	25.0	11	27.7	14	23.3
Job						
Unemployed	40	40.0	10	25.0	30	50.0
Private sector	13	13.0	8	20.0	5	8.3
Students	25	25.0	8	20.0	17	28.3
Employed	20	20.0	12	30.0	8	13.3
Retired	2	2.0	2	5.0	0	0

Regarding the burn related variables ,majority of participants which are 60 (60%) had sustained burn injury up to 25% of body surface area of the body while 40 (40%) were injuried from 25–50% of TBSA. Flame injury was the most common cause of burn injuries affecting 65 (65%) patient .

Burn injury on multiple sites was found in 60 (60%) followed by burn injury on head, neck and face in 20(20%) , lower limbs in 10(10%), upper limbs 8 patients(8%) and trunk in 2 (2%).(table2 show the burn related variables) .

Regarding the burn related variables:

Table-2: Burn Related Variables .(n=100)

Factors	Number of patients	percent%
TBSA		
10-25	60	60.0
25-50	40	40.0
Area affected by burn		
Multipe sites	60	60.0
Head and neck	20	20.0
Lower limbs	10	10.0
Upper limbs	8	8.0
Trunk	2	2.0
Reason of burn		
Flame	65	65.0
Scald	30	30.0
Electricity	5	5.0

Table-3, Rate of depression in patients and control groups.

Rate of depression	Patient group		Control group	
	No.	%	No.	%
Depressed	40	40.0	15	15.0
Not depressed	60	60.0	85	85.0
Total	100	100.0	100	100.0

$_x^2$= 15 , df= 1 , p-value = 0.00075(significant)

Table-4, Distribution of depressed patients and control according to age .

Age (years)	Patients group						Control group					
	Depressed		Non depressed		t o t a l		Depressed		Not-depressed		T o t a l	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
15-24	20	50.0	25	41.7	45	45.0	2	13.3	35	41.2	37	37.0
25-34	16	40.0	19	31.6	35	35.0	7	46.6	22	25.7	29	29.0
35-44	4	10.0	9	15.0	13	13.0	3	20.0	21	24.7	24	24.0
45-54	0	0	6	10.0	6	6.0	3	20.0	5	5.9	8	8.0
>55	0	0	1	1.7	1	1.0	0	0	2	2.6	2	2.0
Total	40	40.0	60	60.0	100	100.0	15	15.0	85	85.0	100	100

x2=18.8 , df =12 , p =0.094(not significant). (

Table- 5, sex distribution in patients and control group

Sex	Patients group						Control group					
	Depressed		Not-depressed		T o t a l		Depressed		Nondepressed		T o t a l	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Male	15	37.5	25	41.7	40	40.0	4	26.7	36	42.4	40	40.0
Female	25	62.5	35	58.3	60	60.0	11	73.3	49	57.6	60	60.0
Total	40	40.0	60	60.0	100	100.0	15	15.0	85	85.0	100	100.0

x^2 =1.48 , df = 3, p =0.68(not significant)

Table-6, numbers and percentage of depressed patients and control according to marital status

Marital status	Depressed Patients group						Depressed control group					
	Female		Male		Total		Female		Male		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Single	15	60.0	8	53.3	23	57.5	3	27.3	2	50.0	5	33.3
Married	8	32.0	7	46.7	15	37.5	7	63.6	2	50.0	9	60.0
Divorced	1	4.0	0	0	1	2.5	0	0	0	0	0	0
Widows, widowers	1	4.0	0	0	1	2.5	1	9.1	0	0	1	6.7
Total	25	62.5	15	37.5	40	100.0	11	73.3	4	26.7	15	100.0

x^2=6.28 , df =9 , p= 0.71(not significant)

Table-7, Number and percentage of depressed patients and control according to the educational level.

education	Depressed Patients group						Depressed control group					
	Female		Male		Total		Female		Male		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Illiterate	2	8.0	0	0	2	5	1	9.1	0	0	1	6.7
Primary	4	16.0	6	40.	10	25	2	18.2	0	0	2	13.3
Secondary	4	16.0	4	26.7	8	20	6	54.5	2	50	8	53.3
University	15	60.0	5	33.3	20	50	2	18.2	2	50	4	26.7
Total	25	62.5	15	37.5	40	100	11	73.3	4	26.7	15	100

x^2= 2.4 ,df = 3 , p=0.12(not significant)

Table-8, Number and percentage of depressed patient and control according to occupation

Occupation	Depressed Patients group						Depressed control group					
	Female		Male		Total		Female		Male		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Unemployed	12	48	8	53.3	20	50	5	45.6	2	50	7	46.7
Private sector	2	8	3	20	5	12.5	2	18.1	1	25	3	20
Employee	4	16	1	6.7	5	12.5	3	27.3	1	25	4	26.7
Retired	0	0	0	0	0	0	0	0	0	0	0	0
Students	7	28	3	20	10	25	1	9	0	0	1	6.6
Total	25	62.5	15	37.5	40	100	11	73.3	4	26.7	15	100

x^2=5.64 , df =9 , p = 0.77(not significant)

Table-9, Number and percentage of depressed patients according to burn related variables(n=40) .

Factors	Number of depressed patients	percent%
TBSA		
10-25	10	25
25-50	30	75
Total	40	100
Area affected by burn		
Multipe sites	28	70
Head and neck	8	20
lower limbs	2	5
upper limbs	2	5
Trunk	0	0
Total	40	100
Reason of burn		
Flame	31	77.5
Scald	8	20
Electric	1	2.5
Total	40	100

According to the Beck Depression Inventory (BDI) for measuring the severity of depression ,the majority of our depressive patients (60%)were of moderate severity (i.e.,BDI=8 -15),and this is statistically significant differences in relation to mild and sever type,

While the majority of the depressed control group were of mild depression (66.7%),as shown in this table.

Table-10, Severity of depression among patient group defined by Beck Depression Inventory (BDI).

Severity of depression	Depressed patients		Depressed control	
	No.	%	NO.	%
Mild (5-7)	12	30	10	66.7
Moderate (8-15)	24	60	4	26.7
Sever (≥16)	4	10	1	6.6
Total	40	100	15	100

x^2=6.18 , df =2 , p =0.045(significant)

Discussion

In our study which is a prospective study we have used clinical assessment , semi –structured interview schedule based on ICD-10 for diagnosis of depression and Beck Depression Inventory (13 items) to assess the severity of depression in burn patients. We compare our study with other similar studies in the world.

Our sample is chosen from burn unit in AL-Diwanyia Teaching Hospital

The present study revealed the rate of depression in burned patients was 40% compared with 15% among their matched control and this result was statistically significant. "The reason for this high rate can be the fact that burn injury is often a devastating event with long term physical and psychological effects. In addition to traumatic nature of burn accident the pain during management may also induce psychopathological responses "[31]. This result is concomitant with many other studies throughout the world[31,32,33,34].

A study was done in USA demonstrated that depression were found in 36-58% of patients within the first few weeks after burn injury[48,49].In other reports ,depression was estimate in 19.5%[50] .The difference seen in different studies about prevalence of depression may be caused by various measures evaluating depression and different statistical population.The study revealed that the majority of our depressive patients(60%) were of moderate severity of depression (i. e. ,BDI=8-15) ,and this is statistically

significant differences in relation to mild and sever type

This result is consistente with that of Asghar Arfaie et al,which revealed that among the depressive patients 38%were identified with mild, 13%with moderat,and 5% with severe depression[34].

whereas works which was done by Mohammed Arif 20 has reported that " mild to moderate depression was recorded in 44% of cases and severe symptoms in 14% of cases. "

Thomas B et al [44,45], in their studies have found that mild depression in 22% to 54%, moderate depression in 13% to 26% and 18% of cases with severe depression.

While two other study found that highiest percent of depression among the depressive patients after burn injury were of sever type 24%, the mild 19.3%,and moderat depression occupied 14% of the depressive patients[48,50].

Discussion of some demographical data of the sample:

Age:

Prevalence of depression according to different age groups slightly varied ,and the results were statistically insignificant, because age is not considered as a major contributing factor in the epidemiology of depression[37]. while study was done by Landolt MA etal[38] suggests that age of patient at the time of the burn was related to post-burn psychological status.

Gender:

The percent of depression was higher in females (62.5%) than males (37.%) ,this is because women are more likely than men to 'internalise' stress, thereby putting them at greater risk of developing depression also because of of general tendecies in female to suffer from mental disturbances more than male and females are more concerned about their body image than male which is certainly affected by burn.

In general female suffer from depression twice than male so the pattern may be same to that in general people.

our study is in agreement with that of Andrade et al.(2003)[39] who state that women are at a greater" risk for depression in most epidemiological studies around the world", two other studies also are consistent with our study in the results that depression are more common in females than males[47,50.] There were previous studies exploring the frequency of depression symptoms among burn victims . Our study is inconsistent with that of Wiechman's (2001)[40], A study was the only one to have recorded a significant difference in genders and depression while Ward et al. (1987)[41] found a minor difference in gender.

Marital state:

Single persons constituted a large number of depressive cases 23 of 40(57.5%) which is statically not significant , this may be due to feeling that burn will leave scar which may affect to get marriage in future ,while other study which was done by Tabassum Alvi[33] ,showed that depression is common in married pat

Education state:

The results show that the majority of depressive patients were of high educational level 50% . however one study which is inconsistant with our study , " took into account the demographic variable of participants found no significant association of educational state in relation with depression[4,,2].

Occupation:

The majority of depressed burn patients were unemployed (50%),however the difference was statically not significant ,unemployed people are at high risk of social and

psychological problems,first because of financial problems that they have, and second because job is a good way of communication with others. According to the results of Tabassum Alvi[33], which is consistant with our study , unemployment was related to higher scores of depression in burn patients, while Clarke MA[44,] found that no significant association of employment status.

Discussion of burn related variables

Body surface area(TBSA):

The majority of depressive cases (75%) in patients with more than 25% of TBSA so that from above this result it can be inferred that in this study body surface area was linked with depression.

It might be expected that large TBSA can lead to more psychological trauma in burn patients ,since burn results in physical and emotional problems and increases interpersonal negative attitudes.

Ptacek JT t al[42] ,found that percent of TBSA burned have been associated with high depression scores. Many studies are in agremant with our study [46,52,53]. . One study suggests that patients even with small percent burn injuries can show clinically significant levels of psychological problems after burn[43]

:**Area affected by burn**

We found the majority of depressive cases (70%) in patients with multiple sites affected by burn. Our results were close to the results observed by Tabassum Alvi [33] who found that injury at multiple areas were more likely to develop depression (67.86%) . while Van Loey [31] found facial burns were more likely to develop depression.

"Authors such as Clarke and Martin[44] , found that the location of the burn played a role in psychological adjustment".

Madianos MG[45] study showed that site of burn on head, neck and face areas causing has found to increase the possibility of developing a psychiatric disorder.

Reason of burn:

The cause of burn in 65% of our cases was thermal(flame), explosion of gas cylinder and kerosene oil were most frequently involved in causing flame injuries ,while 30% was scald

We found the majority of depressive cases in patients in whom the cause of burn was a flame (77.5%) this is may be due to fact that thermal burn produce more injury leading to more scar and more stay in hospital

Our study goes with results of Tabassum Alvi[33] who found that thermal burn were more likely to develop depression(78.95%).

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