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IMPACT OF POST TRAUMATIC STRESS DISORDER ON QUALITY OF LIFE OF SEVERE BURN VICTIMS

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Abstract:

Post-traumatic stress disorder is a psychiatric disorder following life threatening trauma including symptoms of intrusive thoughts, nightmares, hyperarousal, and negative emotions lasting for more than one month. Burn injury is a traumatic experience that affects the quality of life as a negative impact on physical, emotional and social aspects of quality of life.

Objective: *To assess the impact of Post-Traumatic Stress Disorder on the quality of life of severe burn victims.*

Study Design: *Cross-sectional study.*

Place of Study: *This study was performed in Mayo Hospital Lahore.*

Study Period*: The study was conducted for 3 months period.*

Materials And Methods: *A population based cross-sectional study was conducted in Mayo Hospital Lahore. A total of 81 subjects were recruited by simple random sampling and selection was made on the basis of PTSD evaluated by using the DSM-5 criteria after taking due consent. Interview was conducted through pretested questionnaire (WHOQOL-BREF scoring scale). Data was collected and analyzed through SPSS version 16.0. Frequency, means and standard deviation were used to describe variables.*

Results: *Our study was conducted on 81 severe burn victims (49 males; 32 females) visiting the burn unit and surgical wards of Mayo Hospital Lahore. Age of victims was ranging from 16 to 76 years with majority of population lying within the age group 16-36 years (39 males & 27 females). Of these 35 (12 females & 23 males) were unmarried 46 were married (20 females & 26 males).). Among them 22(8 females & 14 males) out of 81 considered themselves to be currently ill. PTSD symptoms according to criterion DSM-5 including stressor, intrusive symptoms, avoidance, negative alterations in cognition and mood, alterations in arousal and reactivity and persistence of symptoms for more than one month were found in all burn patients in different ratios. Quality of life of these patients was measured by using the WHO_BREF scoring scale. According to it Quality of life was to be assessed under the four domains of Physical, Psychological, Social and Environmental. The mean value calculated from the data for physical health was 55.54±18, for psychological 57.55±13, for social 63.47±20 and for environmental domain was 52.89±19.*

Conclusion: *Quality of life in burn victims is determined through various factors. However, our study showed that PTSD in burn patients effects life of patients hampering their recovery both physically and mentally. Hence, moral support should be provoked in society in order to help burn victims to come out of psychological stress despite their physical disability and to improve their quality of life.*

Key words: *Post-traumatic stress disorder (PTSD), burns, severe burns, Quality of life.*

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INTRODUCTION:

Post-traumatic stress disorder is a psychiatric disorder that arises following exposure to the perceived life-threatening trauma. According to American Psychiatric Association a person's response to an event must involve an intense emotional response that result in social and occupational impairment.[1] Symptoms include; intrusive thoughts, flashbacks, nightmares, hyper arousal, negative emotions and panic attacks, lasting for more than one month.[2] A burn is a traumatic injury to the skin or other organic tissue primarily caused by heat or due to radiation, radioactivity, electricity, friction or contact with chemicals.[3]Classification of burn severity in adults include mild(total body surface area; TBSA<15%), moderate(TBSA=15%-25%) and severe (>25%).[4] Quality of life is defined as "individual's perceptions of their position in life in the context of culture and value system in which they live and in relation to their goals, expectations, standards and concerns."[5]

Psychiatric disturbances in Veterans of war in Vietnam was named Post traumatic stress disorders in Diagnostic and statistical manual i.e. DSM-3 in 1980.[6] Burns are the 4th leading cause of injuries after falls, violence and traffic collisions and in developing countries severe burn may lead to social withdrawal, extreme poverty and child abandonment.[7]Incidence of burn injury is very high in Indo-Pak region where the incidence is 76.3 per 100000 inhabitants visiting emergency.[8]

Different scales had been used to identify the patients of PTSD such as DSM-4, ICD-9, IES-R to measure the magnitude of stress ailment in them.[2] Major risk factor for PTSD is the type of trauma involved, mainly interpersonal violence than the natural disasters or accidents.[9] Burns and site of burn affects severity of PTSD.(10) Gender(specifically women), adolescence, history of psychiatric morbidity, low social support, lack of education and greater TBSA in burns are also risk factors for PTSD.[11-12,2] PTSD is associated with genetics showing more prevalence in monozygotic twins and individuals with genetically small hippocampus.[13-14] While social support reduces risk of developing PTSD.[17]People who are addicted to drugs or alcohol abuse are more prone to develop PTSD. Resolving issues of abuse of drugs help in recovery from PTSD.[15-16]Early detection and management of psychopathology during recovery is important for injured individual and to improve medical care as well.

In our area people with low socio-economic status suffer from burns and this issue needs to be elaborated regarding the aftermaths especially stress ailments (e.g. PTSD). PTSD in burn patients strongly effects life of patients hampering their recovery both physically and mentally. Our study aims to provoke moral support in society in order to help burn victims to come out of psychological stress despite their physical disability. And to promote measures to be taken to prevent PTSD development in burn victims.

MATERIALS AND METHODS:

The study was conducted on sever burn victims (TBSA>25%) being treated in Burn unit and Major surgical wards of Mayo Hospital Lahore. Informed consent was taken. The risk and benefits of the study were explained to the study subjects and were assured of keeping the personal information confidential. The sample size was calculated to be 81 severe burn victims. Sampling was done by Simple Random Sampling (probability method).**Post Traumatic Stress Disorder (PTSD):** Post traumatic stress disorder is defined as a severe and complex mental disorder precipitated by its exposure to extra-ordinary stressful events characterized by marked re-experiencing, avoidance/emotional numbing and hyper arousal symptoms. Post traumatic stress disorder is primarily classified as anxiety disorder involving deficit in cognitive functions in both adults and youth individuals, such as emotions, attention, memory and executive functions.[18] **Burn:** Burn injuries are devastating, sudden and unpredictable form of trauma which affects the victim both physically and psychologically. [19]**Severe Burn:** Burn injuries that encompass >20-30% of the body are classified as severe burn injuries.[20,21]**Quality Of Life:** Quality of life is defined as "individual's perceptions of their position in life in the context of culture and value system in which they live and in relation to their goals, expectations, standards and concerns."[5]**World Health Organization Quality Of Life-BREF:** It is an instrument comprising 26 items, which measures following domains: physical health, psychological health, social relationship, and environment. This scoring scale is a shorter version of the original instrument [22]. **Diagnostic and Statistical Manual of Mental Disorders (DSM-5):** It is a diagnostic criteria for post traumatic stress disorder. Pretested and validated tools (questionnaires i.e. DSM-5 criteria and WHOQOL-BREF scoring scale) were used. All data was collected, entered and analyzed through SPSS version 16.0. Value of $p<0.05$ was found significant.

RESULTS:

Our study was conducted on 81 severe burn victims

(49 males; 32 females) visiting the burn unit and surgical wards of Mayo Hospital Lahore. Age of victims was ranging from 16 to 76 years with majority of population lying within the age group 16-36 years (39 males; 27 females). Of these 35 (12 females; 23 males) were unmarried 46 were married (20 females;26 males). 17 were illeterate (6 females;11 males), 33 went to elementary school(18 females; 15 males), 21 studied in high school(8 females;13 males), 7(males) graduated form college and 3 qualified from university. All the patients being interviewed were found to have symptoms of post-traumatic stress syndrome(categorized by the DSM-5 criteria for PTSD). Among them 22(8 females and 14 males) out of 81 considered themselves to be currently ill. 69 out of 81(i.e. 85.2%) were having recurrent intrusive thoughts, 34 (42.0%) had nightmares, 43 (53.1%) experienced flashbacks, 46(56.8%) had intense prolonged distress after the event, 28 (34.6%) experienced physiological reactivity to trauma related stimuli, 67 (82.7%) experienced trauma related thoughts, 53 (65.4%) avoided trauma related reminders, 64(79.0%) were able to recall key features of the event, 19 (23.5%) of the had persistent negative beliefs, 29 (35.8%) of them blamed themselves(or others) responsible for the event, 64 (79.0%) experienced trauma related negative emotions, 32(39.5%) felt detached from others, 16(19.8%) of them were unable to experience positive emotions, 49 (60.5%) had irritable behavior, 58(71.6%) had sleep disturbances, 23(28.4%) had problem in concentration, 39(48.1%) were hyper vigilant, 40(49.4%) got frightened easily, 68 (84.0%) had these symptoms lasting for more than one month, 58(71.6%) had functional impairment and 30 (37.0%) of them had these disturbances due to other accompanying illness, medication and others.

Quality of life of these patients was measured by using the WHO_BREF scoring scale. Health According to it Quality of life was to be assessed under the four domains of Physical, Psychological, Social and Environmental. The mean value calculated from the data for physical health was 55.54±18, for psychological 57.55±13, for social 63.47±20 and for environmental domain was 52.89±19. For Physical health domain the values ranged from 10.7 to 89. 30 out of 81 (37%) had physical health ≤50 (low), 42 (i.e. 51.8%) had this domain lying between 51 to 75 (moderate) and 9 (i.e. 11.11%)patients had ≥ 75 showing good quality of life. For psychological domain the values ranged from 33 to 92. 29 out of 81(i.e. 35.8%) had psychological score less than 50 (low), 44 (i.e. 54.3%) had score lying b/w 51 to 75 (moderate) while 8 (i.e. 9.88%) had above 75 (high). For social domain score value ranged from 8 to 100. 29 (i.e. 35.8%) had score ≤ 50 (low), 36 (i.e. 44%) had score b/w 51 to 75 (with majority i.e 24 (29.6%) having 75 score) while 16 (i.e. 19.75%) had it above 75 (high). For environmental domain the score ranged from 3 to 100. 31 (i.e. 38.27%) had score ≤50 (low), 52 (i.e. 64.2%) had score between 51 to 75 (moderate) while 8 (i.e. 9.88%) had score >75 (high).

Subjects Included In Study: TBSA (total body surface area) >25%.

AGE	No. of patients (percentage%)	Males	Females
16-36	66 (81.48)	39	27
37--56	14 (17.28)	9	5
57-76	1 (1.23)	1	0
Total	81	49	32
Highest education			
None	17 (20.99)	6	11
Elementary school	33 (40.74)	18	15
High school	21 (25.92)	8	13
College	7 (8.64)	0	7
University	3 (3.70)	0	3
N	81	49	32
Marital Status			
Unmarried	35 (43.21)	12	23
Married	46 (56.79)	20	26

Frequency of PTSD symptoms

SYMPTOMS	Total (N)	Frequency	Percentage
current illness (yes)	81	59	72.80%
intrusive thoughts	81	69	85.20%
nightmares	81	34	42%
flashbacks	81	43	53.10%
distress	81	46	56.80%
physiological reactivity	81	28	34.60%
traumatic thoughts	81	67	82.70%
avoidance	81	53	65.40%
dissociative amnesia	81	64	79.00%
negative beliefs	81	19	23.50%
self-blaming	81	29	35.80%
negative emotions	81	64	79.00%
detachment	81	32	39.50%
unable to experience positive emotions	81	16	19.75%
irritability	81	49	60.50%
Self destruction	81	8	10%
sleep disturbances	81	58	71.60%
concentration problem	81	23	28.40%
Hyper vigilance	81	39	48.10%
startled	81	40	49.40%
duration >1 month	81	64	84.00%
impairment	81	58	71.60%
exclusive of other illnesses	81	51	63.00%

WHOQOL.BREF scoring.

	MEAN	S.D	FREQUENCY (Percentage %)			RANGE
PHYSICAL HEALTH			**≤50**	**51 to 75**	**>75**	
	55.54	17.809	30 (37)	42 (51.8)	9 (11.11)	78
PSYCHOLOGICAL	57.55	12.764	29 (35.8)	44 (54.3)	8 (9.88)	59
SOCIAL	63.47	19.632	29 (35.8)	36 (44)	16 (29.6)	92
ENVIRONMENTAL	52.89	18.955	31 (38.27)	42 (64.2)	8 (9.88)	97

Significant Correlation between some PTSD symptoms and QOL scores

Symptoms	Physical Health		Psychological		Social		Environmental	
	≤50	51-75	≤50	51-75	≤50	51-75	≤50	51-75
Intrusive thoughts	36%	40.7%	33.3%	44.4%	30.86%	34.57%	35.8%	41.97%
Negative emotions	32%	41.9%	29.6%	39.5%	34.5%	29.6%	37%	34.5%
Irritability	25.9%	30.86%	25.9%	30.8%	27%	22.2%	27.16%	29.62%
Flash backs	19.75%	24.69%	23.4%	25.9%	18.52%	22.2%	20.99%	25.9%
Sleep disturbances	25.9%	38.27%	22.22%	41.97%	22.2%	34.5%	23.4%	39.5%
Trauma-related thoughts	32.09%	41.97%	34.5%	41.9%	27.16%	37.04%	32.1%	43.21%
Avoidance	23.46%	37.03%	24.69%	34.57%	30.8%	24.6%	27.16%	33.33%

All the four domains of Quality of Life were found to be significantly correlated with different elements of PTSD ($p<0.05$). 29 (36%) victims with intrusive thoughts had physical health domain score of ≤50, while 33(40.7%) had physical health domain score in between 51-75. 26 (32%) patients with negative emotions had physical health domain score ≤50 while 34 (41.9%) had in between 50-75. 21(25.9%) patients with irritable behavior had psychological domain score ≤50 while 25 (30.8%) had in between 50 to 75. 19 (23.4%) with flashbacks had psychological domain score ≤50 while 21(25.9%) had in between 50-75. 28 (34.5%) with trauma related thoughts had ≤50 while 34 (41.9%) had psychological domain score between 50-75. 22 (27%) patients with irritable behavior ≤50, 18 (22.2%) had in between 50-75, 25(30.8%) with avoidance symptom had ≤50, 20 (24.6%) had in between 50-75, 28 (34.5%) patients with negative emotions had ≤50 while 24 (29.6%) had moderate, 18 (22.2%) patients with sleep disturbances had ≤50 while 25 (34.5%) had moderate score in social domain .30 (37%)patients with negative emotions had ≤50, 28 (34.5%) had moderate score, 19 (23.4%)patients with sleep disturbance had ≤50 while 32 (39.5%) had moderate score for environmental domain.

DISCUSSION:

Different studies have been carried out on burn victims regarding development of post traumatic stress disorder and their quality of life. Our research on severe burn victims in Mayo Hospital Lahore showed that all the victims had symptoms of post traumatic stress disorder. Most of them had symptom of intrusive thoughts followed by trauma related thoughts, stimuli, flashbacks, prolonged distress, nightmares, physiological reactivity related to trauma, negative beliefs, blaming (self-blaming), negative emotions, irritability, hyper vigilance and lack of concentration. Similar studies carried out in Iran and Canada showed that post traumatic stress disorder developed in burn victims during hospital stay.[23] A study in Canada showed PTSD development in patients after burn injury caused by electricity, flame and scald.[24]

Demographic distribution variables and burn related factors were found to be associated with PTSD development.[2,25] In our study majority of patients had moderate quality of life including physical health, psychological, social and environmental domain. Our study showed that physical pain and reduced work capacity affected the patient's quality of life by preventing them to resume their daily activity. Other study elaborated almost same results in terms of post burn employment evaluation. 31% of patients didn't return to their job and they had low quality of life score and suffered more of physical and psychological health imposed by trauma[27].Another similar study showed the association of PTSD with pain, dissatisfaction with hand function, aesthetic senses, palliative coping style and avoidance coping style[29].In our study most of the patients had reduced social support and they were either dissatisfied or minimally satisfied. Deficiency of friends and family support affected their quality of life. Other study showed the positive impact of social support on healthier aspect of life, like positive body images, less depression and greater self-esteem were significant.[28] A study showed significant correlation between re-experiencing symptoms , severity of avoidance/numbness, severity of arousal symptoms with physical functioning, cognitive function, positive emotions and overall health related quality of life. [26] Our study showed significant correlation of intrusive thoughts and negative emotions with physical health and irritability, flashbacks, trauma related thoughts were found to be associated with psychological health. Negative emotions, sleep disturbances and avoidance showed to have significant impact of environmental and social domain of health related quality of life. Previous study conducted in 2010 showed that after severe burn injury the level of health of all survivors was worse than before the injury regarding morbidity, selfcare, usual activities, pain/discomfort, anxiety and depression.[30] Our study also showed negative impact of severe burn on the health related quality of life in terms of physical pain, sleep disturbances, concentration problem and inability to get around. A study done in Washington showed persistence of PTSD symptoms after 1 month and 1 year after injury using DSM-3 criteria[31] and in our study using DSM-5 criteria most of patients showed persistence of PTSD symptoms for 1 month. In our study quality of life was found to be moderately affected by PTSD similar to study done for assessing predictors of outcome and quality of life of severe burn patients, they found that burn survivors had good health related quality of life[32].

Quality of life is based on multiple factors including age, gender, marital status, education and living environment of the person and his personal perception towards life. Our study was limited to see only the impact of post traumatic stress disorder on the health related quality of life. Our results showed that quality of life of most of the population was moderate considering only few aspects. We could not assess completely all the aspects due to smaller sample size, education of the patients as it was difficult to make them completely understand the questions due to limited time and translation problems.

CONCLUSION:

Quality of life in burn victims is determined through various factors. However, our study showed that PTSD in burn patients affects life of patients hampering their recovery both physically and mentally. Hence, moral support should be provoked in society in order to help burn victims to come out of psychological stress despite their physical disability and to improve their quality of life.

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