

Psychological Impact On Maxillofacial Trauma Patients: A Retrospective Study

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Abstract

A retrospective study to investigate the psychological morbidity and the health related quality of life in patients who had suffered maxillofacial trauma was carried on those patients who presented themselves at the oral and maxillofacial department, School of Dental Sciences, Sharda University, Greater Noida. They were investigated for the evaluation of stress and anxiety disorders mainly after trauma. Three different scales were used to check the level of anxiety and depression related symptoms along with Post-traumatic stress disorder (PTSD). Sampled subjects were dominated by males with major portion as students. Road traffic accidents were observed to be major cause of Maxillofacial Trauma. On 0-21 HADS scale 28% patients suffered from severe anxiety, whereas 29% respondents revealed severe depression. On Event Scale Revised 15.78% of patients recorded Quite A Bit level of distress with an event score of 3. The CAPS-5 criteria confirmed that 52.62% patients showed moderate symptoms of PTSD examined 6 months after trauma and also met DSM-IV criteria for the diagnosis of PTSD. Study confirms that it is very important to provide psychiatric support for all the patients with maxillofacial traumas as 52.62% of patients confirmed moderate symptoms even after a period of 24 weeks of trauma. Clinicians should emphasize this important consideration and explain it to the patients' relatives in emergency departments and care units.

Keywords: HADS, IESR, PTSD, Psychological Impact, Maxillofacial Trauma

1. INTRODUCTION

Shepherd identified Maxillofacial trauma, as a decisive field of research due to its potential for both physical as well as psychological disability [14]. Maxillofacial trauma – the trauma to the hard or the soft tissue of the maxillofacial region involves fracture of mandible, maxilla, zygomatic, nasal or frontal bone respectively and the soft tissue trauma involves lacerations, abrasions or contusion of soft tissue. Some of the common sources of maxillofacial trauma are fall, road traffic accidents, violence or abuse, or sport injuries. The treatment of such patients may vary from several single or multiple interventions. From the initial presence of the patient after trauma to treatment followed by recovery and follow up, the already traumatized patient undergoes several other disturbing events which not only include aesthetic but also the functional impairment. Apart from physical stresses the trauma patients have to deal with a number of other factors which directly/indirectly affect their psychological state and hence degrading a good quality of life. Some of the commonly seen psychological issues with such patients are increasing social anxiety, avoidance, and low self-esteem, problems with relationships, adjustment issues, adaptation changes and employment difficulties. Studies have concluded that the severity of anxiety is directly dependent upon the magnitude of trauma and a resulting scar however 20% - 40% of the patients suffering from facial trauma may likely develop symptoms of Post traumatic stress disorder [40]

Till date several prospective studies on the psychological impact in facial trauma patients have been conducted. A study on facial trauma participants shows an increase of nine-fold and two-fold for anxiety and depression respectively [16]. Other studies too have showed increase in anxiety and depression at hospital admission in about one third of their subjects and some of the studies concluded that one third of their subjects have been meeting up the criteria for post traumatic stress disorder(PTSD) over a follow up period of 2-3 months [2]. As most of the times psychological anxiety disorders of maxillofacial trauma patients remain unnoticed and untreated in routine clinical practice, henceforth researchers still consider its management to be a major challenge [9].

Despite numerous researches and information gathered on the physiological disorders in facial trauma cases, there is still a need to study the pattern and severity of such disorders and also to look for variable treatment options. Current investigation is based on screening the level of psychological disorders using authentic and valid scales for the diagnosis of anxiety disorders, depression and looking for the associated symptoms of PTSD, which have been reported by several researchers [14]

Rationale of Study:

The authors of this paper did a retrospective study to investigate the psychological morbidity and the quality of life lived in patients who had suffered maxillofacial trauma. The study was done on those subjects who presented themselves at the oral and maxillofacial department, School of Dental Sciences, Sharda University, Greater Noida. They were investigated for the evaluation of stress and anxiety disorders mainly after trauma.

2. PATIENT AND METHODS:

i. Sample size:

Under this retrospective study done over a time period of 6 months (September, 2019 – March, 2020), a total of 65 patients showed up at the Department of Oral and Maxillofacial surgery within one week of event impact. However only 38 patients (32 males & 4 females) gave the consent to willingly participate in the survey on their first visit to the hospital. The

total no of respondents for the second and the third assessment which was done at the follow up visit (3-4 weeks after initial screening) and at six months remained the same.

ii. Inclusion criteria:

- Patients between age group 10- 50 years.
- Hard tissue facial injuries(mid-face fractures, mandibular fractures, zygomatic fractures or multiple fractures)
- Both male as well the female patients were included.

iii. Exclusion criteria:

- Patients below 10 years of age and above 50 years of age.
- Patients with obvious cerebral impairment.
- Patients who had a peri-traumatic period of unconsciousness exceeding 15 minutes.
- Injuries from self harm.
- Gunshot injuries
- Patients with a history of pre existing mental disorders or those who were on psychiatric medications.

iv. Instruments for data collection:

• *Personal and clinical data collection:*

A thorough patient history was taken from each respondent recording the details such as name, age, sex, employment, cause of trauma, type of injury, location at which the event took place, site of fracture, previous history of facial trauma, history of alcohol consumption on the day of trauma, treatment line, any legal issues involved.

• *Hospital anxiety and depression scale (HADS):*

To study the severity of anxiety disorder and depression in the subjected patients (38), HADS questionnaire [41] was adopted. The HADS questionnaire comprises of a list of 14 questions (seven questions rated each for anxiety and depression). The scores scored for each question range from 0-3 ,with each sub scale having a range of 0-21. The scores ranging in between of 0-7 represent no anxiety/depression whereas scores ranging from 8-10 indicate borderline anxiety/depression. Score of 11 or above 11 represented anxiety/depression.

Impact of event scale-Revised (IES-R):

A 22 item scale/questionnaire was used to measures various factors such as intrusion, avoidance and hyperarousal after the result of event in subjects [20]. Out of 22 items , Intrusion was scored from 8 items (1, 2, 3, 6, 9, 14, 16,20) and avoidance was also scored from 8 items (5,7,8,11,12,13,17, 22) whereas hyperarousal was scored from 6 items (4, 10, 15, 18, 19 , 21). Each of the item of IES-R uses a scoring range of 0-4 (0= not at all; 1= a little bit; 2=moderately; 3= quite a bit; 4= extremely). The total score of this scale can range between 0-88

• *A Clinician Rating Scale for Assessing Current and Lifetime PTSD symptoms (The CAPS-5)*

The five point CAPS-5 symptom severity rating scale was put to use for all symptoms [5]. Rating scale is designated as 0 for absent, 1 for mild / sub-threshold, 2 for moderate/threshold, 3 for severe/markedly elevated and 4 for extreme/ incapacitating. Criterion B (reexperiencing: B1,B2,B3.B4,B5), Criterion C (avoidance:C1 and C2), Criterion D (negative alteration in cognitions and mood: D1,D2,D3,D4,D5,D6,D7 and criterion E (hyperarousal: E1,E2,E3,E4,E5,E6) were used to calculate CAPS-5 total symptoms severity score which was done by summing up the severity scores for item 1-20. PTS diagnosis was calculated by separating out individual symptoms to be present or absent, then followed the DSM-5diagnostic rule. The Severity score rated as 2, only signifies the presence of a symptom. The

DSM-5 diagnostic rule can only be completed under the least presence of any one of the criterion B, one criterion C, any two of criterion D and 2 criterion E symptoms.

v. Statistical Analysis

Data was analyzed with Windowstat software. Results were calculated as frequencies (%), means and standard deviations (SD) for normally distributed variables.

3. RESULTS

Perusal of Table -1 gives a detailed description about the personal and clinical history of the consented patients who visited the Department of Oral and Maxillofacial Surgery related to as name, age, sex, employment, cause of trauma, type of injury, location at which the event took place, site of fracture, previous history of facial trauma, history of alcohol intake on the day of trauma, treatment, any legal issues involved. Among the studied subjects 89% were male patients and 11% were female patients. Majority of the patients (50%) were students followed by employed ones (45%) and only 5% were unemployed. Fall, assault, road accidents, and sports injuries were identified as the etiology of maxillofacial injuries under which road accidents accounted for the highest percentage of 42%, followed by 24% of assault cases, 21% of fall patients and 13% of patients with sports injuries (Figure 1 & 2). Also, 29% cases were alcohol driven and 21% had a legal action involvement. Multiple fractures were identified as the most frequent site and type of fracture accounting for 55% where as midface, mandible and zygoma constituted for about 21%, 16%, and 8% respectively. Majority of the traumatic events had taken place on the road (50%), 21% at home, 16% involving sports fields and 13% at work places for which 100% of the patients had undergone operative treatment.

To study the severity of anxiety and depression in the subjected patients (38), HADS questionnaire based on a list of 14 questions (seven questions rated each for anxiety and depression) is presented in Table -2. The scores scored for each question ranged from 0-3, with each sub scale having a range of 0-21. The score in the range of 0-7 represented no anxiety/depression whereas scores ranging from 8-10 indicated borderline anxiety/depression. Score of 11 or above 11 represented anxiety/depression. As per the results the highest and the lowest mean score of 1.86 ± 0.80 and 1.34 ± 0.89 for the anxiety score code C & A was accounted by 33% and 25% of the subjects, respectively. Cumulatively 28% of the subjects contributed to an overall anxiety score of 11.22 ± 0.16 for the listed score codes (A, C, E, G, I, K, M) and were indicative of abnormal psychological state or presented symptoms of anxiety. Similarly in HADS depression scale the highest and the lowest mean scores of 2.42 ± 0.67 and 1.18 ± 0.60 for score code D and F were accounted by 33.3% each of subjects. Cumulative score (12.22 ± 0.43) contributed by 29% respondents for the score code (B, D, F, H, J, L, N) was indicative of abnormal state of depression (Table 2). On formulating the overall results for anxiety, 16% of the respondents turned out to be normal whereas 56% were borderline abnormal/borderline anxiety and 28% were abnormal/severe anxiety. On the contrary for depression, 53% of the respondents were diagnosed to be normal, 18% as borderline abnormal/borderline depression and 29% as abnormal/depressed (Table 2.1, Figure 3).

Impact of Event Scale-a 22 item scale/questionnaire is presented in Table 3. Under Intrusion subscale, score code 9 recorded the highest average score of 3.04 ± 1.05 which accounted for 25% of the respondents where as the least average score of 2.14 ± 1.19 was recorded for score code 1 corresponding to 24% of the respondents. Under avoidance subscale, score code 17 recorded the highest average score of 3.07 ± 1.13 accounting for 20% of the respondents ,

while as on contrary score code 7 recorded the lowest average score of 1.93 ± 1.25 for 20% of the respondents. Under Hyperarousal subscale, score code 4 and 21 recorded the highest and the lowest average scores of 2.82 ± 1.31 and 0.75 ± 1.24 , respectively, accounting for 20% of the respondents each. The total score of intrusion subscale was calculated and found out to be the highest (20.65 ± 0.29) with an average score of 2.58 which was followed by avoidance subscale with a total and average score of 20.56 ± 0.33 and 2.57, respectively. Hyperarousal sub scale recorded lowest total score of 11.47 ± 0.67 with an average score of 1.91. Total IES-R score was recorded to be 52.68 ± 0.53 with an average score of 2.39 (Table 3). Summary of respondents over impact of event scale is given in Table 3.1 and Figure 4. Results reveal that 28.94% of respondents were moderately distressed with maximum contribution by intrusion subscales, followed by hyperarousal subscale and avoidance subscale. Only 0.87% of the respondents showed extreme symptoms of distress scored on intrusion subscale. 22.79% of respondents showed little bit distress with maximum contribution by hyperarousal scale, followed by avoidance subscale and intrusion subscale. 15.78% of the respondents also revealed quite a bit distress when recorded for intrusion and avoidance subscale. Majority of respondents (31.57%) did not reveal any type of symptom and thus were normal. The study clearly indicates that 67.51% of the respondents exhibited different levels of distress after trauma with scores ranging from 1-3.

The five point CAPS-5 symptom severity rating scale was used for 26 respondents and the results are presented in Table 4. For item code B, the score was represented on basis of re-experiencing severity code, similarly for item code C and D, score was represented on basis of avoidance severity score and negative alterations in cognitions and mood severity, respectively. Item code E and F represented hyperarousal and duration of disturbance. Lastly item code G represented distress or impairment. Results reveal that Item code D recorded highest severity score of 13.79 ± 0.54 (20.70%), followed by item code E with a severity code of 11.06 ± 0.47 (20.83%) and severity score of 10.1 ± 0.32 (21.23%) for item code B. 22.49% respondents recorded for avoidance exhibited the minimal severity score of 4.92 ± 0.23 for item code C. Among item code B, B1 recorded the highest severity score of 2.38 ± 1.11 which is an indicative of unwanted memories of the traumatic event in 21.21% of the respondents. For item code C, C1 recorded the highest severity score of avoidance (2.69 ± 1.20) indicating moderate avoidance in 25% of the respondents. Whereas, in Item code D highest severity score was recorded for D6 (2.48 ± 1.13) indicating that 20% of the respondents were cut off/distant from other people since the traumatic event. Highest hyperarousal severity score of 2.65 ± 1.11 was recorded for item code E3 indicating that 25% of the respondents had become hypervigilant since trauma.

According to the CAPS-5 summary sheet the Sx score of 2 and above for all the severity scores indicated that PTSD symptoms were prevalent. Item code F revealed that the duration of distress among the respondents was for more than a month. For impairment in social functioning i.e. item code G the highest severity score recorded was 2.94 ± 1.67 . Similarly under dissociative symptoms, depersonalization recorded highest severity score of 2.84 ± 1.48 . Since all the criteria (B to G) were met along with the dissociative symptoms PTSD was diagnosed. Summary of the respondents towards overall PTSD symptoms are depicted in Table 4.1 & Figure 5. Results reveal absence of symptoms in 47.36% of respondents. With a severity score of 1-2, 47.36% respondents recorded mild to moderate CAPS-5 symptoms with highest percentage of 36.84% respondents showing moderate/threshold symptoms whereas, 10.52% respondents were showing mild/sub-threshold CAP symptoms. Only 5.26% respondents were found to have severe/Marked elevated CAP symptoms and none of the respondents showed extreme/Incapacitating CAP symptoms (Table 4.1, Figure 5).

Comparative performance of different scales for Psychological impact on maxillofacial trauma patients under study is presented in Table 5. Study revealed that scales used were comparable on the subject under study for assessment of patients towards various anxiety and depression related disorders. On an average 31.31% of patients were categorized as normal, whereas 58.71% patients observed moderate symptoms and 9.62% patients were categorized as abnormal due to presence of extreme case of symptoms. With passage of time interval from 1 week to 24 weeks after trauma about 18 patients (47.36%) recovered fully from the disorders, whereas 20 patients (52.63%) still exhibited moderate disorders and thus warrants follow-up treatments (Figure 6).

Table 1: Personal and clinical details of participants under age group of 10-50 years (n=38)

Variable		Number of respondents
1	Sex	
A	Male	34 (89%)
B	Female	4 (11%)
2	Employment	
A	Employed	17 (45%)
B	Student	19 (50%)
C	At Home	2 (5%)
3	Previous facial injury	7 (18%)
4	Cause of injury	
A	Fall	8 (21%)
B	Assault	9 (24%)
c	Road Accident	16 (42%)
d	Sports	5 (13%)
5	Site of Fracture	
a	Zygoma	3 (8%)
b	Mandible	6 (16%)
c	Mid face	8 (21%)
d	Multiple	21 (55%)
5	Location	
a	Road	19 (50)
b	Home	8 (21%)
c	Work Place	5 (13%)
d	Field	6 (16%)
6	Treatment	
	Operative	38(100%)
	Conservative	0 (0%)
7	Alcohol Involved	11(29%)
8	legal cases	8(21%)

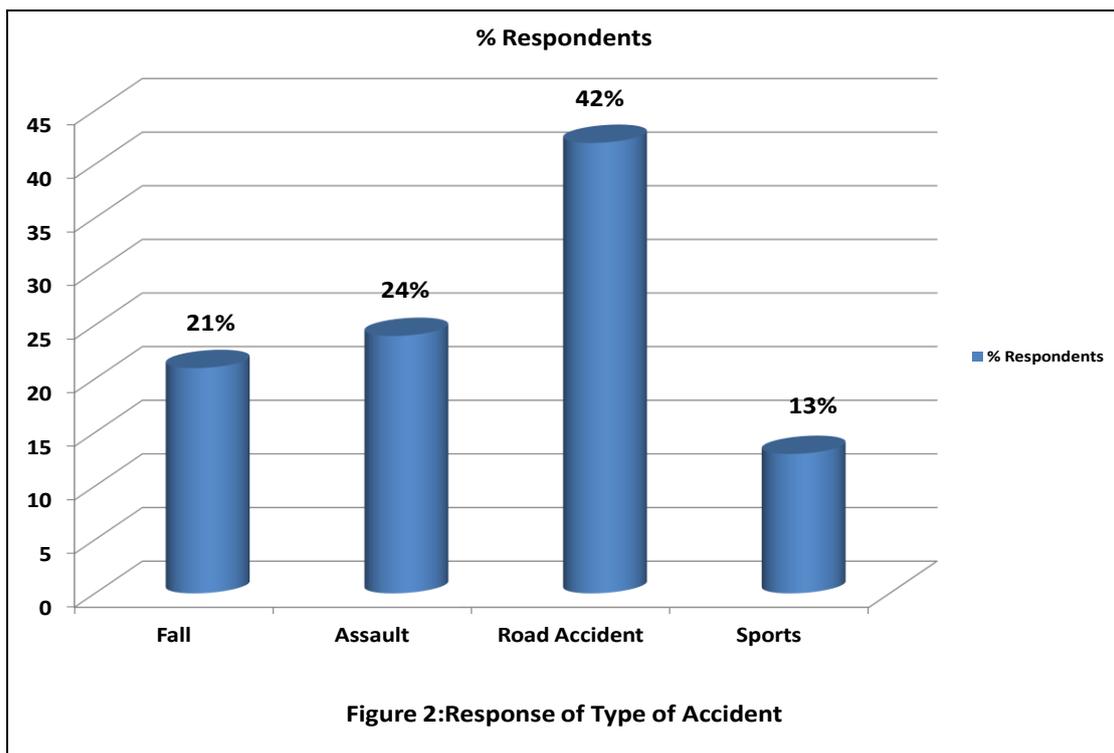
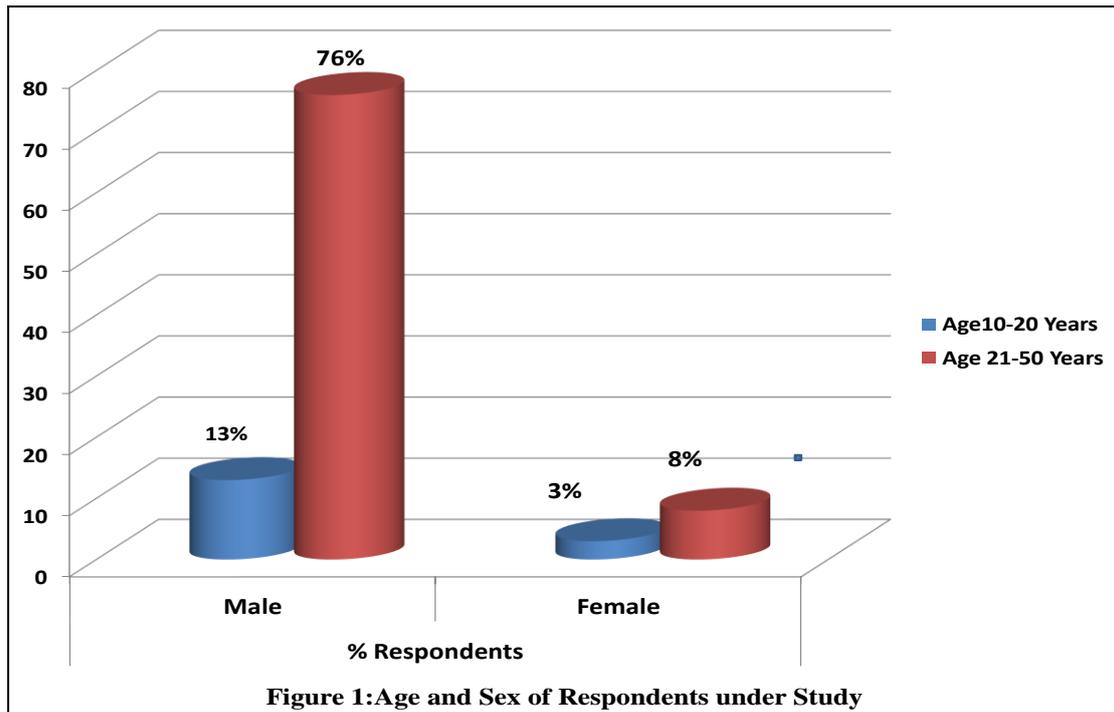


Table 2: Hospital Anxiety and Depression Scale (HADS) of 38 respondents

ANXIETY			DEPRESSION		
Score Code	Anxiety Score	% Respondents	Score Code	Depression Score	% Respondents
A	1.34±0.89	25.0	B	2.21±0.83	30.82

C	1.86±0.80	33.3	D	2.42±0.67	33.3
E	1.5±0.85	25.0	F	1.18±0.60	33.3
G	1.5±0.79	24.97	H	1.26±0.85	25.0
I	1.74±0.85	25.0	J	1.60±1.01	25.0
K	1.60±0.90	24.97	L	1.68±0.91	33.3
M	1.68±0.80	33.3	N	1.87±0.89	25.02
Over All	11.22 ±0.16	28.0	OVER ALL	12.22 ±0.43	29.00

Table 2.1: Summary of HADS Diagnosis of 38 respondents

Score	Number of Respondents	Diagnosis
Anxiety		
0-7	6 (16.0%)	Normal
8-10	21 (56.0%)	Borderline abnormal or borderline cases
11-21	11 (28.0%)	Abnormal
Depression		
0-7	20 (53%)	Normal
8-10	7 (18 %)	Borderline abnormal or borderline cases
11-21	11 (29.0%)	Abnormal

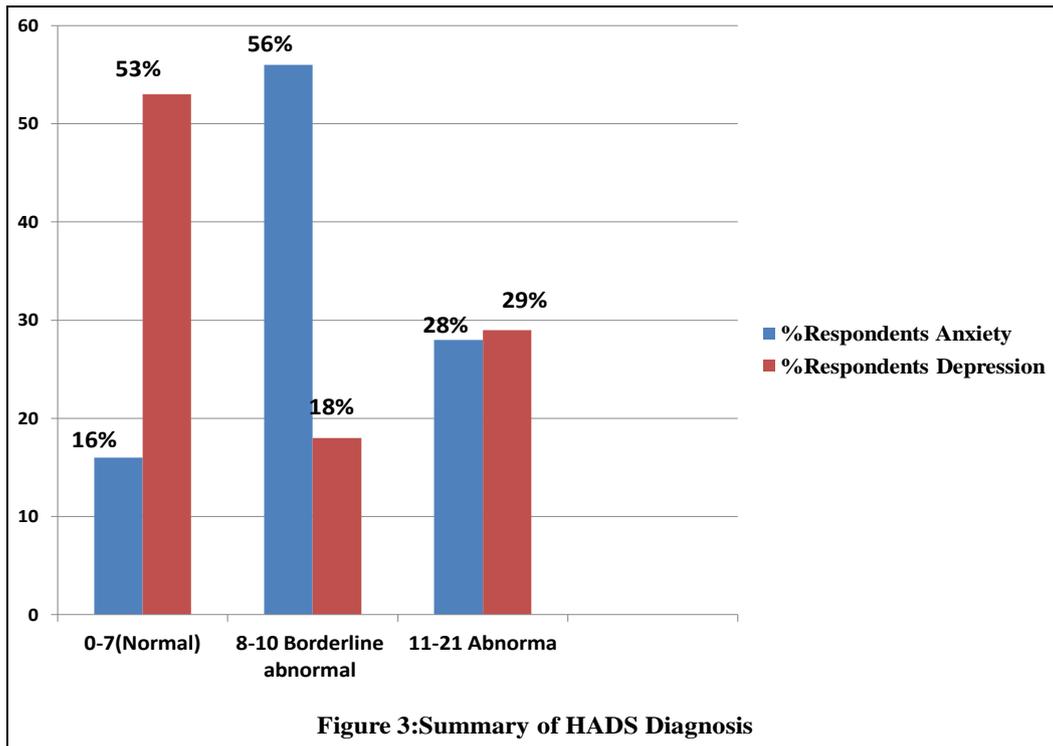


Table 3: Impact of Event Scale Revised of 38 respondents

S No	Score Code	Client Response Score	% Respondents
A)Intrusion subscales			
1	1	2.14±1.19	19.98
2	2	2.75±1.09	24.97
3	3	2.42±0.82	25.0
4	6	2.56±1.12	19.99
5	9	3.04±1.05	24.99
6	14	2.64±1.20	19.99
7	16	2.89±1.20	19.98
8	20	2.21±1.08	19.98
Total Score Intrusion subscales		20.65±0.29	21.86
Average Score Intrusion subscales		2.58	
B)Avoidance subscales.			
9	5	2.42±1.45	20.0
10	7	1.93±1.25	20.02
11	8	2.89±1.23	20.0
12	11	2.43±1.29	20.0
13	12	2.46±1.43	20.0

14	13	2.54±0.90	25.0
15	17	3.07±1.13	19.99
16	22	2.82±1.39	20.0
Total Score Avoidance subscales		20.56±0.33	20.62
Average Score Avoidance subscales		2.57	
C) Hyperarousal Sub scales			
17	4	2.82±1.31	20.0
18	10	2.54±1.35	20.0
19	15	1.68±1.14	20.0
20	18	2.0±1.16	20.0
21	19	1.68±1.33	20.0
22	21	0.75±1.24	19.98
Total Score Hyperarousal Subscale		11.47±0.67	19.99
Average Score Hyperarousal Subscale		1.91	
Total IES-R Score		52.68±0.53	20.85
Average IES-R Score		2.39	

Table 3.1: Summary of respondents over Impact of Events Scale Revised of 38 respondents

Events	Event Score	Number of Respondents			Average Number of respondents over Sub Scale	% Respondents
		Intrusion	Avoidance subscales	Hyperarousal Subscale		
Not At All	0	11	11	14	12.0	31.57
A litte Bit	1	5	9	12	8.66	22.79
Moderately	2	12	10	11	11.0	28.94
Quite A Bit	3	9	8	1	6.0	15.78
Extremely	4	1	0	0	0.33	0.87
Total		38	38	38	38	

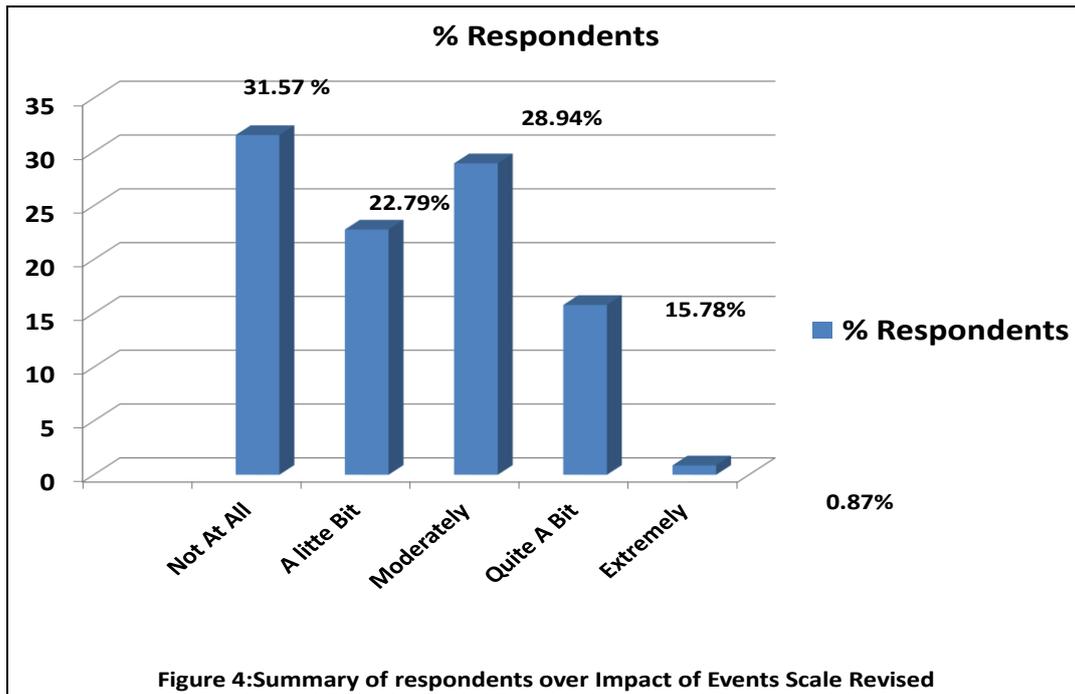


Table 4: A Clinician Rating Scale for Assessing Current and Lifetime PTSD (The CAPS-5) of 38 respondents.

Item Code	Severity Score	% Respondents	CAPS-5 Sheet Past Month	Summary
B:Re-experiencing Severity Score				
B1	2.8±1.11	21.21	1	
B2	1.65±0.87	25.0	0	
B3	2.19±1.24	19.98	1	
B4	2.27±1.53	20.0	1	
B5	1.61±1.21	19.98	0	
B SubTotal	B Sev=10.1±0.32	21.23	B Sx=3	
C:Avoidance Severity Score				
C1	2.69±1.20	25.0	1	
C2	2.23±1.42	19.98	1	
C SubTotal	C Sev= 4.92±0.23	22.49	CSx=2	
D:Negative Alterations in Cognitions and Mood Severity Score				
D1	2.5±1.15	20.0	1	
D2	1.81±1.24	19.98	0	
D3	2.31±1.51	20.0	1	
D4	2.27±1.48	19.98	1	
D5	1.42±1.21	20.0	0	
D6	2.48±1.13	20.0	1	
D7	1.0±1.03	24.97	0	
D SubTotal	D Sev =13.79±0.54	20.70	D Sx= 4	
E:Hyperarousal Severity Score				
E1	2.23±1.45	20.0	1	

E2	1.81±1.07	19.99	0
E3	2.65±1.11	25.0	1
E4	1.67±1.07	19.98	0
E5	1.35±1.21	19.99	0
E6	1.35±1.04	20.0	0
E SubTotal	ESev =11.06±0.47	20.83	E Sx= 2
PTSD Total	Sev=39.87±3.21	21.31	PTSD Total Sx=11
PTSD Average	Sev=2.0		
F: Duration of Disturbance	Duration of Disturbance >1 month	-	1
G: Distress or Impairment			
Subjective distress	2.52±1.09	-	1
Impairment in social functioning	2.94±1.67	-	1
Impairment in occupational functioning	2.48±1.43	-	1
Total	Sev=7.94±0.21		Total G CX=3
Dissociative symptoms			
Depersonalization	2.84±1.48	-	1
Derealization	2.58±1.26	-	1
Total	Sev=5.42±0.13		Total D CX=2
PTSD Diagnosis			
PTSD Present – All Criteria (A-G) Met	1(Yes)		
With dissociative symptoms	1(Yes)		
With delayed onset(>6 months)	0(No)		

Table 4.1: Summary of Respondents towards overall PTSD Symptoms of 38 respondents.

S No	5 point CAPS Symptom severity scale	Severity Score	Number of Respondents	% of Respondents
1	Absent	0	18	47.36
2	Mild/Subthreshold	1	4	10.52
3	Moderate/Threshold	2	14	36.84
4	Severe /Marked Elevated	3	2	5.26
5	Extreme/Incapacitating	4	0	0.0
	Total		38	100.0

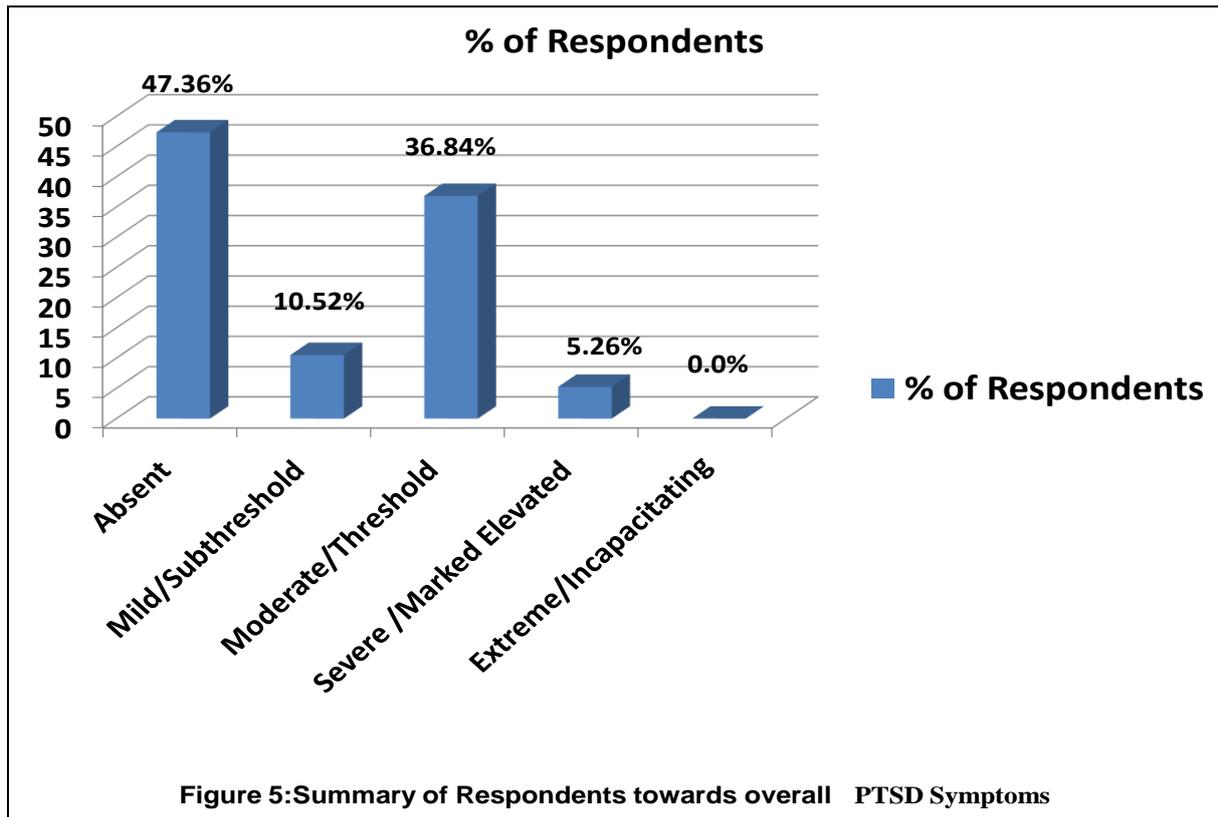
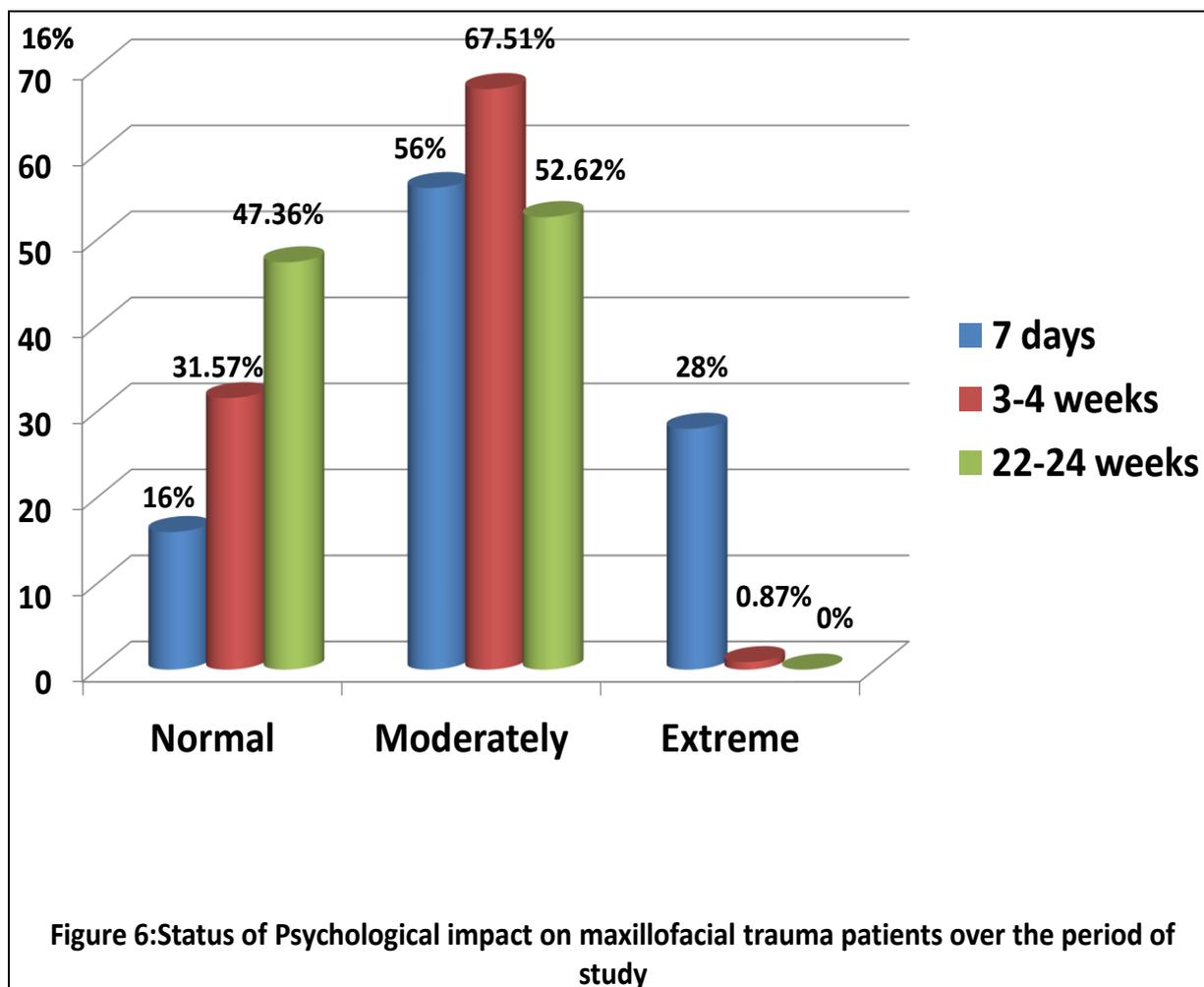


Table 5: Comparative performance of different scales for Psychological impact on maxillofacial trauma patients Under Study

Scale Type	Evaluation Criteria	Level of Disorders		
		Normal	Moderately	Extreme
		% Respondents		
HADS	7 days after Trauma	16.0	56	28
Impact of Events Scale Revised	3-4 weeks after Trauma	31.57	67.51	0.87
The CAPS-5	6 Months after Trauma	47.36	52.62	0
Average		31.64	58.71	9.62



4. DISCUSSION

4.1. Personal and clinical demographics

Maxillofacial injuries followed by psychological sequelae consists of elevated levels of anxiety, depression and Post traumatic stress disorders [19]. Maxillofacial trauma, might even lead to facial defacement. Study reveals that 42% of injuries were caused by road traffic accidents which may be attributed to insufficient vehicular maintenance, lack of traffic laws enforcement, and poor levels of educational status of drivers and is in confirmation of previous reports [7,22, ,28, 37]. Traffic law enforcement , seat belts, crash helmets, vehicle with airbag can reduce the incidence of maxillofacial injuries as also reported [1,31]. As males accounted for 89% of respondents therefore study confirms motorcycle as a major means of road traffic accident as has also been reported [7]. Study observed assault as second highest means of cause of injury depicted by 24% of respondents. [10,14,24] also reported assault-related maxillofacial injuries the main cause of maxillofacial trauma in industrialized nations. Study confirmed that student share in the subjected population was 50% indicating that young adults were involved in the accidents that usually take part in dangerous and risky exercises and sports, drive motorcycles carelessly and are likely to be involved in violence. Multiple fracture was observed to be the most frequently fractured site (55%) followed by Mandible and Mid face fractures (37%). Such injuries will affect functions like speech and feeding, and may develop psychosocial problems [15,29].

4.2 Anxiety and depression

Even though maxillofacial fractures being the most common injuries in various treatment clinic, yet some of the emotional setbacks like depression, antisocial behaviours, unemployment, drug abuse etc remain untreated and increase the risk of getting injured again [26,27,34]. Despite significant advances in medicine and dentistry, treatment and surgery of these injuries remains a hurdle which is difficult to surpass. Maxillofacial traumas causing impairment of normal functioning could be related as being the reason for various psychological disorders. Thereby producing a wide spectrum of ill effects ranging from facial deformities and chronic diseases to psychological disorders, which in turn seem to be dented in their gray cells for a major period in their lifetime [21]. The present study on HADS scale showed that 28% of respondents suffering with maxillofacial traumas exhibited high degree of anxiety and 29% of patients had high degree of Depression during initial study (7 days after trauma), whereas, the level of Quite A Bit depression over IES-R scale recorded after 3-4 weeks of trauma was observed by 15.78% % of subjects. Similar reports of initial development of mild to moderate score depression and anxiety symptoms ranging from 13% to 20% of patients have also been reported [8,12,14,15,16]. The prevalence rate differences for anxiety and depression in a number of studies might not be credited only to the evaluating tools but also to the differences in age, social and cultural factors of specific populations. It has been duely reported in several research works that in the initial stages after maxillofacial trauma, the anxiety rate ranges from 11.5% to 15% [15,16, 38], on the other hand, the rates of depression after facial trauma have been reported 8-13% [15,16]. These present findings contrast those of previous study in south west Nigeria [37], where researchers stated that 11.8% of individuals who underwent maxillofacial injuries faced extreme anxiety levels immediately after injury, 3.0% during 4–8 weeks and 13.0% during the follow up period (10–12 weeks). The results of the present study showed a sharp decline in extreme level of disorders from 28% to 0.87% indicating that majority of the patients suffered from Moderate level of disorders. Though, the anxiety and depression levels were decreasing over the review times, it did not totally cease. This study has featured the importance of psychological support to the individuals who have met with a Maxillofacial trauma and clearly hinted out to the fact that clinicians must emphasize this factor in their treatment protocol by enhancing its importance to the patient's relatives and the personnel in emergency and intensive care units.

4.3. Post-traumatic stress disorder (PTSD)

The principal symptoms of PTSD comprise (i) re-experiencing the incident (having distressing dreams/ images or unpleasant and upsetting thoughts); (ii) avoiding certain thoughts, emotions or situations which are a reminder of the event and (iii) hyperarousal, with involved struggles for sleep, aggravated irritability and nervousness [11]. From the present study, 52.62% % patients showed moderate symptoms of PTSD examined 6 months after trauma and also met DSM-IV criteria for the diagnosis of PTSD. Authenticated signs and symptoms for PTSD in adult patients with maxillofacial trauma have also been reported [3,14]. Pre-trauma- mental peace, elevated levels of stress and lack of social support were also being reported in the patients who were showing signs of PTSD [13]. This shows that in subject population, there is a high risk to develop PTSD in facial injury patients.. A previous preliminary study reported a rate of 17.4% stating that motorcycle accidents were mainly responsible for maxillofacial trauma.[3,37] have previously reported a 27% generality of PTSD and a score 7(HADS) obtained by abundant no of patients , 7 weeks post injury. Whilst PTSD cannot be diagnosed within 4 weeks of the incident or until symptoms have

been present for 4 weeks, we chose to try and identify people with psychological problems within the first week and study them prospectively 24 weeks later. In this study, prevalence of psychological disturbances have been highly persistent throughout the follow up. Post-traumatic psychological disturbance may have an impact on compliance with treatment and recovery from physical injury. Early research programs have associated PTSD with chronic disturbance in homeostasis [23], which might result in failure then expected healing due to prolonged inflammatory response. Additionally it might hinder the healing of patient's physical injury as well. Present findings also vouch for previous reports indicating that it is the personal thinking and views after an injury that are closely related to developing PTSD [17,35]

4.4. Management:

According to our study it was seen that majority of the patients with facial injuries displayed high rates of psychological disorders in both the early as well as the late phases after trauma. Respondents met least one criteria for the diagnosis of any psychological disorders such as anxiety, depression, distress or PTSD. With passage of time interval from 1 week to 24 weeks after trauma about 18 patients (47.36%) recovered fully from the disorders, whereas 20 patients (52.63%) still exhibited moderate disorders and thus warrants follow-up treatments. [6] reported that at the time of research, the maxillofacial clinicians could not provide any psychological help to patients who were suffering from disorders like PTSD as there was no direct access to the psychological services. Such patients were referred then to a general physician and follow up for such conditions was usually discontinued. Thus such patients could not seek help of psychological experts.

The role of maxillofacial surgeons is not only to provide standard surgical or medical care but also to understand the importance of psychological health in trauma patients. The role of psychiatrist/psychologist is no less than that of a surgeon however it cannot replace the part the surgeons and nurses/assistants or others (family and friends) play in the story of such victims [14].

To prevent and treat PTSD several interventions were being studied and grouped by ISTSS guidelines committee [30]. Psychotherapies and pharmacotherapy's are the effective treatment lines for PTSD however for those patients who show resistance to such therapies, combination therapies are required to attain better behavioral responses. Once a patient is diagnosed with PTSD he should be put on a treatment intervention immediately to avoid the chronicity of the disorder [25]. In multiple trials first line intervention by psychotherapy was found to be effective which included exposure therapy, a combination of exposure and cognitive therapy and eye movement desensitization & processing [4]. However for those patients who prefer medication over psychotherapy SRI (serotonergic reuptake inhibitor) is the first drug of choice. Under multiple randomized clinical trials, PTSD symptoms have showed to decrease under the influence of SRI [36]. Some trials even showed trauma focused therapies with exposure and SRI or a combination of the two modalities to be of a great success in treating PTSD [32,42]. Recommendations have been made for using exposure therapy on those patients who have a complaint of extreme fear and avoidance. For guilt and trust issues cognitive therapy can be put to use. Emotional engagement might be an issue with fewer cases for which virtual reality exposure could be used [25]. The patients who have had sleep disturbances and nightmares could be treated by prazosin however the clinical trials for this medicine have showed mixed results [18,33]. Pharmacologically, SRI's are the first drug of choice in treating PTSD patients however if patients shows psychotic symptoms, SRI with antipsychotic medication is suggested. Some of the other non pharmacological interventions

include acupuncture, neurofeedback, yoga, saikokeishikankyoto and transcranial magnetic stimulation[39].

5. CONCLUSION

This study showed that it is very important to provide psychiatric support for all the patients with maxillofacial traumas. Clinicians should emphasize this important consideration and try working under groups or teams which would comprise of all health related professionals like a dental surgeon, psychiatrist/psychologist, oral hygienist etc and also explaining it to the patients' relatives and patient himself in emergency departments and care units is essential.

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