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### **Original Research Article**

## Customized protocol for psychological management of a patient with residual maxillofacial defects

### Poonam Prakash<sup>1,\*</sup>, Rahul Bahri<sup>1</sup>, SK Bhandari<sup>1</sup>

<sup>1</sup>Dept. of Dental Surgery & Oral Health Sciences, Armed Forces Medical College, Pune, Maharashtra, India



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### ABSTRACT

**Background**: Maxillofacial surgeons and Prosthodontist deal with rehabilitation of defects of orofacial region but understanding the mental attitude of patients is often ignored or neglected. Success of any prosthesis relies on patient's compliance and motivation to adjust and cope up with irreversible loss. Evaluation of psychological distress and management of the same is of utmost importance. Literature is deficit with an elaborate systematic classification system to evaluate the impact of maxillofacial defect on the psychological status of patients and role of therapy on improvement post-rehabilitation.

**Aims & Objective**: Am of this study is to propose a customized comprehensive protocol for evaluation of psychological status using ICD-11 classification system before and after maxillofacial prosthetic intervention and impact of psychological management tools on the same.

**Materials and Methods:** Ten patients with maxillofacial defects reporting for prosthetic rehabilitation were selected. Psychological evaluation tool, ICD-11 classification system was applied pre and post rehabilitation by two independent observers. Customized psychological management protocol was formulated and implemented to note the impact on overall improvement in psychological status of the patient.

**Results**: Patients with severe personality trait showed varied levels of improvement ranging from no change to mild. Five patients with moderate personality trait showed improvement and change in personality trait to mild on implementation of psychological tools. Statistical evaluation could not be done due to multitude of subjective variables.

**Conclusion**: ICD-11 can be used as a successful tool for psychological evaluation of patients. Necessary intervention at every level in form of family support, support groups, psychological therapeutic modalities and therapies can improve status of the patient. A well-structured management protocol helps in early recognition of psychological distress and systematic management of the same to improve clinical outcome of the rehabilitation procedure.

**Clinical Implications**: Patients with maxillofacial defects experience a progressive cycle of loss and grief. This diminishes their ability to adjust to stress and acceptability towards maxillofacial prosthetic rehabilitation procedure. Assessment of psychological alteration using a standardized classification system and utilization of therapeutic modalities to deal with the same helps in successful rehabilitation and restoration of patient in the society as a whole.

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### 1. Introduction

\* Corresponding author.

E-mail address: pnmprakash@yahoo.co.in (P. Prakash).

The physical structure of human body provides various means for interaction with the surroundings. The information is perceived through specialized sensory

https://doi.org/10.18231/j.aprd.2021.041 2581-4796/© 2021 Innovative Publication, All rights reserved. inputs including sense of sight, sound, touch, taste, proprioception and balance.<sup>1</sup> Mac Gregor emphasized the impact of facial disfigurement on the social interactions of an individual and its impact on individual's response to deal with everyday challenges.<sup>2</sup>

Defects of maxillofacial region may elicit a deep impact on various domains affecting the psychological well-being of an individual [Table 1]. Surgical and Prosthodontic rehabilitation of these defects permits restoration of form and elevates the sense of 'incomplete' to an extent but deep seated insecurities and psychological impact needs consideration. Successful rehabilitation can be achieved if the patient accepts the physical disability and is motivated to cope up with the distress to lead a near normal life. Understanding the psychological makeup of the patient, desires and expectations from the treatment and titrating it with realistic treatment options is the major challenge for a rehabilitation specialist.

### 2. Psychological Effects of Maxillofacial Defects

Maxillofacial defects may be congenital, developmental or acquired and their management poses significant psychological and adaptation challenge for the patient.<sup>3</sup> It may manifest itself in the form of anxiety, depression or post-traumatic stress disorder.<sup>4</sup> Various investigators have reported psychological effects like depression, reduced ability and desire to socialize and decline in social and economic status among these patients.<sup>5</sup> To understand the reasons for distress, Peretz theory of loss and grief, defines loss as 'a state of being deprived of or being without something one has had and valued'.<sup>6</sup> It may be caused by loss of significant person, loss of a part of the self, loss of material object or developmental loss.

The reaction to grief is an adaptive function which may manifest as shock and denial followed eventually by a phase of guilt and anger and eventually acceptance and adjustments to cope up with the situation.

Recognizing, understanding and acknowledging the multitude of emotions at early stage prevents development of deep seated depressive traits and suicidal tendencies.<sup>7</sup>

A cycle of loss, grief and reintegration must be completed by the patient and understood by the Prosthodontist. The role of a specialist is to empathize with the patient and evaluate the need for referral to a psychotherapist.

### 3. Materials and Methods

Ten patients in the age group of 20-50 yrs reporting or referred from allied specialties to department of dental surgery for prosthetic rehabilitation of residual maxillofacial defects were selected based on inclusion and exclusion criteria. Inclusion criteria for the study was ambulatory patient with well orientation to surroundings, acquired defects due to trauma or surgery.

Patients with congenital defects, young dependent children, patients with composite defects, history of psychological distress or on medication for same were excluded from the study.

### 3.1. Methodology

The selected patients were explained the rehabilitation procedure and evaluation protocol. Informed consent was obtained for participation in the proposed study. The study group comprised of patients with residual maxillary defect namely ocular, auricular, cranial, maxillectomy, mandibulectomy and finger.

Psychological assessment tool utilized for pre and post rehabilitation was ICD-11 classification system. For preoperative evaluation detailed patient interview was carried out to classify the patient based on various personality disorder and traits using ICD-11 personality disorder tool. The severity of personality disorder can be categorized into four categories namely, mild, moderate, severe personality disorder or severity unspecified. [Table 1] The second phase of classification system is personality trait qualifiers namely negative affectivity, detachment, dissociality, disinhibition, anankastia. [Table 2]

Based on Classification system, psychological management tools were applied and simultaneously prosthetic rehabilitation was done to provide a well-fitting prosthesis. Post-rehabilitation, the evaluation of psychological status was repeated to note the cumulative impact of prosthetic and psychological therapy on mental status of the patient based on ICD-11 criteria.

### 3.2. Implementation of ICD-11 for Maxillofacial Defects

The ICD-11 is the latest classification system which focuses on the impairment of self and interpersonal personality functioning.<sup>8</sup>

Method to utilize ICD-11 classification in clinical scenario included clinical interviews and observations and review of clinical records of the patient. Based on detailed interview of the patient and family members, specific traits of various domains were recognized. The clinician first categorized the patient as personality disorder severity and then coded one or more trait domain qualifiers. Based on ICD-11 Classification system, a customized management protocol was formulated and implemented utilizing key modalities from other specialties like psychology and psychiatry. [Table 3]

### 4. Results

hows data collected from ten patients, pre-operative classification, intervention and post –operative personality among them. Five patients showed moderate personality disorder pre-treatment, which changed to mild on intervention. Two patients showed severe personality disorder which improved to moderate, one each from sever to mild and severe to no change. One patient showed mild personality trait with no change.

Detailed explanation of the customized protocol in terms of evaluation and management is presented below.



Fig. 1: Pre-treatment residual ocular defect (Rt eye)



Fig. 2: Post-therapy outcome

# 4.1. Application of proposed classification system in a patient with residual ocular defect rehabilitated with custom made ocular prosthesis

A 43 years old male patient reported with a residual ocular defect secondary to enucleation due to an injury at the age of 11 years and was rehabilitated with a modified ocular shell thrice in past (Figure 1). On careful detailed evaluation of history using components of active listening, the psychological status was assessed and following findings were considered significant-



Fig. 3: Pre-treatment residual maxillary defect (Ltmaxilla)



Fig. 4: Post-therapy outcome

Patient was intelligent with ability to form alliance and friends at an early age. However, post rehabilitation, he could not finish schooling due to inability to focus. Family history revealed limited access to resources due to six members in the family and his father being the only earning member. Patient experienced neglect, feeling of unworthiness, embarrassment in front of his siblings and family.

The impact on personality caused due to his disability trickled through adulthood as social withdrawal and introvert behavior to avoid criticism and rejection. He managed to get a job twice but he was unable due to anger issues, avoidance, conflict and lack of interest. He was married and has had few episodes of incoherent behavior. Relations with parents and siblings were also in volatile conflict.

On tabulating the findings, patient was found to have "Moderate' personality disorder" due to alteration in many areas including identity of 'self-worth', problems in interpersonal relations, inability to retain and perform at work. Trait qualifiers were evaluated and patient exhibited features of Detachment (emotional and social), negative

### Table 1: Personality disorder severity

f) Employment g)

Reaction to stress j)

Harm to self/others

i)

h) Interpersonal relationships

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	Mild Personality Disorder	Moderate Personality Disorder	Severe Personality Disorder			
Personality functioning a) Stability and Coherence of identity to self b) Ability to maintain overall sense of 'self-worth' c) Ability to self direct by making plans, implementing them	Alteration in some areas Problems with self direction may or may not appear Stable and coherent with identity of 'self-worth'	Multiple areas Altered identity of self, ability to form intimate relationships, control impulsive behavior (some areas may be less affected)	Severe disturbances Not havingsense to who they are or rigid sense of self Self view maybe highly eccentric, complicated behavior			
Personality dysfunctioning may manifest itself as Emotional manifestations (emotionally over/under reactive, ability to acknowledge unwanted alterations in behavior like anger or sadness, expression of emotional setback); Cognitive manifestations (ability to make decisions under stress, stability and flexibility of belief system, maintenance of situational or interpersonal appraisals); Behavioral manifestations (situational behavior, reaction to intense stress, self-harm or violence)						
Social interactions a) Interpersonal relationship b) Occupational	Problems in all three spheres but some relationships are maintained, some social and	Marked Problem: conflict, avoidance, withdrawal or extreme dependency	Problems in all interpersonal functioning			
Social roles	occupational roles carried out	Compromised occupational and social performance	Willingness absent			
Personality Disturbances	Mild	Moderate	Severe			
a) Individuals sense of self	Contradictory /inconsistent	Incoherent during crises	Unrealistic, highly unstable			
b) Self esteem c)	Difficulties to 'let go'	Difficult to maintain positive self esteem Or unrealistic positive self-view	Difficulty to regulate emotional experience and expressions			
d) Ability to set goals and work towards them e)	Compromised, difficulties to adjust to minor setback	Highly upset, giving up easily Or in pursuit of unrealistic goals	Largely unable to either set goals or pursue realistic goals			

Little interest

Frequent, serious, volatile

Mild dissociative state, or

dominant or highly submissive

conflicts very strongly

psychotic-like beliefs,

paranoid reaction

Sometimes

Lack of interest, conflicts, inappropriate behavior

Significant conflicts unwanted

emotions of anger, sadness,

Extreme paranoid or

psychotic-like reactions

others

Often

### **Table 2:** Trait domain qualifiers that contribute to expression of personality dysfunction

No

minor conflicts or

Conflicts but able to sustain

Estrangement, intermittent or

Dependence, submissive

Manageable behavior

Trait Domain	Core Definition	Specific Features
Negative Affectivity	A tendency to experience negative emotions, frequency and intensity inconsistent with the situation	Anger, anxiety, worry, fear, shame, vulnerability, depression, pessimism, low self-esteem, mistrustfulness, withdrawal from situation
Detachment	A tendency to maintain social and emotional detachment	Social detachment: avoidance of social interactions Emotional detachment: aloofness, inexpressive, reserved
Dissociality	Disregard for rights and feelings of others, encompassing both self-centeredness and lack of empathy	Self-centered, attention seeking attitude, deceptive, manipulating, ruthless, mean, pleasure in suffering of others
Disinhibition	A tendency to act rashly based on stimuli without consideration of potential negative consequences	Impulsivity, distractibility, irresponsibility, lack of planning
Anankastia	A narrow focus on one's rigid standard of perfection, altering situations to ensure conformity to these standards	Hyperscheduling, neatness, rigid control over emotional expression, stubbornness

	Specialist	Therapy
Mild	Prosthodontist	Prosthetic rehabilitation
	Reconstructive surgeon	Reconstruction
	Self	Venting out, stress management
	Family	Understanding, distraction counselling
	Psychologist	Increased frequency of counselling sessions
Moderate	Psychologist	Mindfulness techniques
		Support groups
Severe	Psychologist	Cognitive behavior therapy
		Survivors campaign
		Drug therapy

Table 3: Customized management protocol based on severity of personality disorder

### Table 4: Effect of Therapy of patients

S.No.	Type of Defect	Age	Sex	Marital Status	Pre-op Classification	Intervention	Post-Op Classification
01.	Ocular	34yr	М	Married	Moderate	Venting out, Introduction to rehabilitated cases, Relaxation techniques	Mild
02.	Aramany Class I Maxillary Defect	29yr	F	Married	Severe	AV aids, Cognitive behavior therapy, Family counselling, Support groups	Moderate
03.	Cantor & Curtis class III	36yr	F	Married	Severe	Stress management, Anti-anxiety drugs, support groups, family counselling	Mild
04.	Amputated Finger	43yr	F	Married	Mild	Counselling, prosthetic rehabilitation	Mild
05.	Auricular defect	28yr	F	Unmarried	Moderate	AV Aids, Mindfullness techniques. Support groups	Mild
06.	Phthisis Bulbi	38yr	F	Married	Moderate	Counselling, Family counselling, Av Aids, stress management	Mild
07.	Aramany Class II Maxillary	52yr	F	Married	Severe	Counselling, Cognitive behavior therapy, mindfulness techniques, Drug therapy, referral	Severe
08.	Cranial defect	26yr	М	Unmarried	Moderate	Survivors campaign, interaction with treated patients, counselling, AV Aids, mindfulness techniques	Mild
09.	Ocular Defect	18yr	М	Unmarried	Moderate	Counselling, AV Aids	Mild
10.	Orbital Ocular	36yr	М	Married	Severe	Family counselling, Support groups, AV Aids	Moderate

Table 5: Multidisciplinary approach in management of patients with maxillofacial defects

Before Diagnosis	At Diagnosis	During Treatment	Post Treatment
Awareness Programmes Participation in screening campaign Coping strategies to daily life challenges	Proper communication of disease progression, treatment options and outcome alongwith associated comorbidities and management Empathy Reassurance Coping strategies	Good communication skills Active listening Patient compliance Using psychological diagnostic questionnaire for psychological distress	Introduction to support groups Propose rehabilitation programs and interventions Psychological counselling Drug therapy

Loss and Grief	Phase of treatment	Psychological management
Loss of part of self, Shock & Denial	Breaking the news	Family, self counselling Venting out Stress management
Guilt, anger, emotional pain	Pre-surgery	Treatment protocol & Outcome <b>AV Aids, Group Interaction</b> Cognitive Behavior Therapy <sup>9</sup> Psychodynamics & Mindfulness techniques <sup>10</sup>
Adjustment, acceptance, growth	Immediate Post Surgery	Reassessment <b>Support groups</b> Behavior management Distraction Drug Therapy
	Rehabilitation Phase	Active listening Motivation Multimodal Therapy Survivors campaign Adjunctive therapy

Table 6: Customized protocol for psychological management based on loss and grief concept and phase of treatment

affectivity (low self-esteem), Disinhibition (impulsivity, irresponsibility).

Based on severity of personality disorder, customized patient centered approach towards psychological management was followed using the proposed protocol as mentioned in Table 5. A detailed discussion with the patient about his the physical and psychological status resulted in the treatment plan for rehabilitation of the residual ocular defect with a well fitted custom made ocular prosthesis (Figure 2). Patient and family counseling was planned with a psychologist at biweekly interval. This allowed venting out of distressed feelings and long term insecurities. He was motivated to implement mindfulness techniques and was kept on regular follow-ups. Patient was introduced to a support group consisting of other people with similar physical condition to optimally cope up with existing psychological state.

After 03 months, the status was reassessed. The patient was able to maintain his employment, showed better relation with his spouse and siblings. However his relation with parents showed little improvement. On tabulating the findings, patient was found to have improved to a 'Mild' personality disorder due to alteration in some areas including identity of 'self-worth', problems in interpersonal relations, however, maintenance of some, ability to retain and perform at job, no harm to self or others. The traits were reduced and were also improving.

## 4.2. Application of proposed classification system in a patient with residual maxillary defect rehabilitated with definitive obturator prosthesis

A 48 years old female reported with a residual maxillary defect secondary to segmental maxillary resection due to ameloblastoma 01 year back (Figure 3). Patient and family history revealed relevant points. During crises patient shows signs of emotional instability with frequent bouts of crying, anger and impulsive behavior. Sense of self was tampered and incoherent. Severe conflict in interpersonal relation with spouse inspite of all attempts and adjustments made by the partner. Attempt to suicide and injury to self in past. Patient was not convinced to use a prosthesis post-surgery for last 01 year as she believed that no one could help her in the

situation and it was her deeds to bear the loss for rest of her life. She avoided social interactions and disregarded feelings of others including her spouse and family.

Based on these finding patient was categorized as 'Severe Personality Disorder' due to severe dysfunctioning of self, problems in interpersonal relations, harm to self and others. The traits identified were 'Negative affectivity' due to depression, anger and mistrustfulness, 'Detachment' sue to avoidance of social and emotional association, 'Dissociality' due to disregard towards others.

Based on severity of personality disorder, customized patient centered approach towards psychological management was followed using the proposed protocol.

Before starting with prosthetic rehabilitation, patient was scheduled for a psychological counseling where she was taught cognitive behavior techniques including relaxation, stress management, coping, and assertiveness. She was introduced to a survivor's campaign and support group which consisted of individuals with similar defects who were successfully rehabilitated and were able to return to normal social and personal life with minor adjustments. On repeated frequent sessions for 06 weeks, patient was planned for prosthetic rehabilitation. AV aids were used to demonstrate other cases with maxillary defects which were successfully rehabilitated. A well fitted prosthesis was fabricated. Counseling sessions were continued. Patient was asked to maintain a daily diary to write down her daily feelings. Family members were counseled and told to maintain a progress journal to trace patient's improvement. After 05 months of regular counseling and follow up, patient seemed to be happier with improvement in interpersonal relations, improved value for self-worth, with few episodes of anger issues (figure 4). However mild dissociative state in terms of crises was still persistent. Patient was now classified as 'Moderate personality disorder'. The personality traits were also improving. Counseling and mindfulness therapies were continued.

### 5. Discussion

Personality of an individual is a result of amalgamation of heredity and environment. Any amount of distress pushes an individual to revert to a primitive stage of development to gain security. The abnormality in behavior due to physical disfigurement may present itself as psychoneurotic disorders, psychotic disorders or personality disorders.<sup>11</sup>

Common classification systems including MM House, Gamer et al<sup>12</sup> and others cannot be generalized for maxillofacial defects because of the magnitude of loss and its multitude psychological impact on the patients.

The speciality of psychology utilized various selfadministered and healthcare administered questionnaires which help in quantifying the magnitude of distress and also allows to record the progress during the course of therapy. These include Patients health questionnaire, Becks Depression inventory, Hospital Anxiety and Depression scale, General Health Questionnaire-12/28, ICP, ICF, MMPI and others. The most commonly used questionnaires are GHQ12/28 or HADS scale.<sup>13,14</sup> GHQ-28 has been divided into four subscales namely somatic, anxiety, insomnia, social dysfunction and severe depression.<sup>15</sup>The most commonly used systems include ICD 10, DSM 5 and ICD 11.<sup>16</sup>

### 5.1. Need for standardized classification system

Due to wide variation in the maxillofacial defects, the difference in individual's coping mechanism and multitude of psychological presentation of the patient, a customized system of classification and a patient specific management protocol becomes important.

The classification system devised specially for maxillofacial prosthetic patients helps in clear categorization of patients based on severity, ability of a Prosthodontist to manage by non-pharmacological means or the need for specialist intervention, ease of communication between the healthcare professional, supporting staff and caretakers, comparison at various stages of the management which can serve as a positive reinforcement or can indicate a change or modification of the therapy as per the prognosis.

In 2010, ICD-11 Working Group was set up for the revision of the classification of personality disorders. The reluctance to quantify personality disorder as a diagnosis was related to insight formulated by early versions of ICD, according to which, the condition was immutable, pervasive and untreatable. The determinants of severity were grouped based on the degree of interpersonal dysfunction, impact on occupational roles, cognitive and emotional experiences and risks of harm to self or others. Differences in the expression of dysfunction were ascertained by observing domain traits. This provided a comprehensive single spectrum of classification for easy understanding and simplified clinical use.<sup>17</sup>

### 6. Management

Psychological trauma to patient with maxillofacial defect demands empathy and care at every level. The therapy includes

### 6.1. Patient awareness, early diagnosis & prompt treatment

Education, Awareness, early diagnosis, easy access to diagnostic and treatment modalities and prompt treatment can reduce the extent of damage and limit the degree of dysfunction.

### 6.2. Role of Healthcare specialist

A multidisciplinary approach is required from the very first appointment till the post treatment follow up [Table 5]. Proper communication, active listening and counseling at every stage is of paramount importance.

Techniques recommended by Arthur Griederincludes verbal techniques, structuring and psychotherapeutic techniques.

Role of a Prosthodontist<sup>9</sup> in managing **c**ongenital/ acquired maxillofacial defects is to rehabilitate the defect with a well fitted, comfortable prosthesis to restore form, dunction and esthetics as much as possible. Proper communication, empathic listening assures patient to open up and express fears, expectations and desires from the treatment.

Multimodal therapy including psychological counsellor, Cognitive Behavior Therapy,<sup>10</sup>Psychodynamics & Mindfulness techniques,<sup>18</sup> administration of antidepressants, nutrition counselling and diet modification to combat the side effects or dysfunctioning of certain organs like xerostomia, alternate medicine specialists like naturopathy, yoga, mind body exercises can help patient develop a positive mental attitude and improve prognosis of the treatment.

### 6.3. Role of family

Decision making & emotional support- witnessing patient's experiences, listening to them, giving realistic reassurance and encouragement, and providing companionship.

Cognitive support- bring clear and balanced perspective to decision making and helping in a more practical action like self-care, timely administration of medications and recall appointments.

Spiritual support- leads patient to perceive new possibilities and a better future.

### 6.4. Role of support groups

Support of family and support groups with individuals or their families familiar with similar defects can act as a role model and support for the member experiencing trauma.Many such groups exist like 'about face', ' support for people with oral and head and neck cancer', 'let's face it' and psychological counsellors like' healthemind'.

Different psychological measures can be implemented at various levels of loss and grief and based on different phase of treatment for benefit of patient and addressing the areas of distress specific to each stage as shown in Table 6.

### 7. Conclusions

The concept of patient centered treatment planning and a customized system of evaluation and management goes a long way in the successful rehabilitation of the patient as a whole. Classification systems like ICD-11 allow evaluation of psychological distress and personality disorder. However, they do not provide specific treatment protocol based on severity index of personality disorder for maxillofacial patients. This customized management recommendations can be conveniently adopted in daily clinical scenario with specific rather than generalized patient based therapy.

The pre, intra and post treatment psychological evaluation and counselling along with the functional prosthetic rehabilitation helps to achieve successful results in the management of these patients.

### 8. Conflicts of Interest

The authors declare that there are no conflicts of interest regarding the publication of this paper.

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#### Author biography

Poonam Prakash, Associate Professor

Rahul Bahri, Senior Resident

SK Bhandari, Professor and HOD

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