Awareness & Knowledge of Maxillofacial Prosthodontics as a Dental Specialty amongst Medical Practitioners

Trupti M. Dahane¹, Rupali Mukesh Patel², Surekha Godbole Dubey³, Kashish Mangal⁴

^{1, 2, 3, 4} Department of Prosthodontics, Sharad Pawar Dental College, DMIMS, Sawangi, Maharashtra, India.

ABSTRACT

BACKGROUND

The primary goal of a medical team for managing patients suffering from tertiary disease (cancer) is to eliminate the disease or to remove the underlying pathology. Also, restoration along with rehabilitation of the defect to boost the confidence and self-esteem of the patients must be done. Rehabilitation usually is considered as a part of prosthodontics i.e., maxillofacial prosthodontics. But the scope of maxillofacial prosthodontics as a specialty does not find recognition amongst the multidisciplinary medical team in dealing with maxillofacial defects. The objective of the study was to evaluate the awareness and knowledge of the maxillofacial prosthodontics amongst medical practitioners in and around Wardha city.

METHODS

A descriptive, cross-sectional survey was conducted using a questionnaire. The validated questionnaire contained 14 questions, of which 13 were awareness based, and 1 was attitude based. It included relevant photographs. 219 medical practitioners working either in hospitals attached to educational institutes or private sector participated in the study.

RESULTS

The study reveals the percentage of medical practitioners who are aware about maxillofacial prosthodontics branch. Only 10.9 % were aware about maxillofacial prosthodontics as a branch of dentistry which deals with the restoration of maxillofacial defects.

CONCLUSIONS

The survey points towards a need to conduct awareness activities to make the medical practitioners aware of this fact. This will hopefully increase the patient's referral with such defects to a maxillofacial prosthodontists or can include a maxillofacial prosthodontist as a part of multidisciplinary team that could benefit the patient for complete rehabilitation.

KEY WORDS

Prosthesis, Trauma, Defects, Rehabilitation

Corresponding Author:

*Dr. Trupti M. Dahane,
Associate Professor,
202, Department of Prosthodontics,
Sharad Pawar Dental College, DMIMS,
Sawangi, Maharashtra, India.
E-mail: drtrupti.prostho@gmail.com*

DOI: 10.14260/jemds/2021/131

How to Cite This Article:

*Dahane TM, Patel RM, Dubey SG, et al.
Awareness & knowledge of maxillofacial
prosthodontics as a dental specialty
amongst medical practitioners. J Evolution
Med Dent Sci 2021;10(09):608-612, DOI:
10.14260/jemds/2021/131*

*Submission 24-09-2020,
Peer Review 30-12-2020,
Acceptance 07-01-2021,
Published 01-03-2021.*

*Copyright © 2021 Trupti M. Dahane et al.
This is an open access article distributed
under Creative Commons Attribution
License [Attribution 4.0 International (CC
BY 4.0)]*

BACKGROUND

Face has a unique role in social and emotional expression, communication and most importantly it is the reflection of oneself as expressed by St. Jerome's statement "face is the mirror of mind".¹ Any defects of the face and associated structures therefore have important psychosocial implications on affected patients. Craniofacial / maxillofacial defects lead to severe depression that often require rehabilitation as "to appear human is fundamental right of every individual".² Patients who have been traumatised in an accident and / or have had surgical removal of diseased tissues requires restoration of the function and aesthetics. Restoration in these cases should ideally be carried out as soon as possible to minimise psychological trauma.³ Surgical reconstruction is considered to be the primary treatment of choice in such cases, although, not all the defects are treatable by surgical intervention.⁴ It depends on multiple factors like the size, location of the defect, the loss of vital anatomical structures and general debilitation of the patient.⁵ An available treatment option for such cases is the prosthetic rehabilitation of the defects.

Prostheses are an artificial replacement of part of the human anatomy restoring form, function and esthetic.⁶ Maxillofacial prosthodontics is concerned with the restoration and / or replacement of the stomatognathic and craniofacial structures with prostheses that may or may not be removed on a regular or elective basis. Maxillofacial prosthodontists are individuals who have the knowledge and skill set to provide the service of customising a prosthesis for maxillofacial defects.⁷ They should work as a part of multi-disciplinary team, generally associated with oral and maxillofacial surgeons, plastic surgeons, ear, nose and throat surgeons, ophthalmologists, general surgeons, general physicians, oncologists, orthopaedic surgeons, gynaecologists and paediatricians, speech therapists, occupational therapists, physiotherapists etc.⁴

The primary goal of the medical team to manage patients suffering from tertiary disease is to eliminate the disease or to remove the underlying pathology.⁸ But, the management also encompasses restoring and rehabilitating the lost tissue / defect. Rehabilitation implies to restore to former privilege, which is the essence of service provided by a maxillofacial prosthodontist who is trained to make a prosthesis to restore the functional, aesthetic and psychologic lacunae associated with the defect.

This demands collaborative participation of medical and dental practitioners in order to best address the patient's needs. It has been observed that most of the patient's in India suffering with such defects do not get referred to a maxillofacial prosthodontist and remain untreated. Primary cause for this could be that the medical practitioners like surgeons, ophthalmologists, ENT surgeons, plastic surgeons themselves may not be aware about the speciality responsible to treat such patients for the residual defects after surgery.

Such lack of awareness can deprive the patients of the benefits in spite of the existing facilities and compel him to live the remaining years with poor quality of life.

Therefore, the present study was undertaken to seek information about the awareness and knowledge of the medical practitioners in and around Wardha City towards the

maxillofacial branch of dentistry as a speciality to restore maxillofacial defects.

METHODS

This descriptive cross-sectional study was conducted amongst the institutional and private medical practitioners of Wardha city, Maharashtra after institutional ethical approval by Datta Meghe Institute of Medical Sciences (DMIMS). The study duration was from January 2019 to June 2019.

Since no such type of study was found in literature, we devised a questionnaire (Copyrighted ROC Number L-94055/2020) and got it validated. For validation, face as well as content validation was obtained from the subject experts for the questionnaire. The reliability of questionnaire was found to be Cronbach's Alpha of 0.89.

Inclusion Criteria

1. Medical practitioners associated with hospitals or practicing individually.
2. Post-graduate residents associated with medical hospital.

The purpose and nature of the study was explained to each participant fitting in the inclusion criteria and the willing participants were requested to complete a comprehensive closed ended, self-administered questionnaire. Of 300, 219 medical practitioners willingly participated in the study.

The questionnaire contained a total 14 questions. 13 questions were knowledge based, regarding awareness about maxillofacial prosthodontics as a specialised branch, various types of maxillofacial defects and materials needed for prosthesis fabrication etc. While the last one was attitude-based question. The questions were supported with relevant photographs so that a self-explanatory unique questionnaire is made. Sample size was taken based on the conveniences of the study. Professional details of the subjects such as area of specialisation and years of experience were also recorded in the study. Frequency analysis was done using Statistical Package for the Social Sciences (SPSS) software version 22.0.

RESULTS

Graph 1. Percentage of Medical Practitioners Who Were Aware of Maxillofacial Defects and That They Can Be Restored with Prosthetic (Artificial Substitute) Rehabilitation

		No of Practitioners (N = 219)	Percentage
Do you know the different types of maxillofacial defects that require prosthetic (artificial substitute) rehabilitation?	Patients with congenital defects	15	6.8
	Patients with acquired defects	25	11.4
	Both	114	52.1
	Don't know	65	29.7
	Ear	26	11.87
Which of the following type of prosthesis are you aware of?	Eye	27	12.33
	Nasal & midfacial prosthesis	68	31.05
	Cranial prosthesis	4	1.83
	Prosthesis for maxilla & mandible	93	42.47
	Finger	8	3.65
	None	65	29.68
	Newspaper	0	0
If you have heard of it, where did you hear about it?	Books	69	31.5
	Dentist	65	29.7
	Friend	85	38.8
	Yes	58	26.4
Have you ever come across a patient with any of the above mentioned defect who has been rehabilitated with a prosthesis?	No	161	73.5
	Yes	5	2.3
Have you ever referred a patient with any of the above mentioned defects for rehabilitation?	No	214	97.7
	Yes	1	0.5
Which of the following prosthesis have you referred the patient for?	Eye	2	0.9
	Nasal and midfacial prosthesis	0	0
	Cranial prosthesis	0	0
	Prosthesis for maxilla & mandible	0	0
	Any other [Finger]	2	0.9
	None	214	97.7
	Yes	42	19.2
Are you aware of the fact that such prosthesis can be better supported and retained with the help of implants?	No	177	80.8
	Yes	0	0
Are you aware of the average cost which the patient will have to bear for such kind of prosthesis?	No	219	100
	Yes	0	0
What material as per your knowledge is used for fabrication of such prosthesis?	Acrylic resin	29	13.2
	Silicone	56	25.6
	Both	59	26.9
	I don't know	75	34.2
	Yes	40	18.2
Do you know that a prosthodontist, a dental specialist, deals with maxillofacial prosthesis?	No	179	81.7
	I don't know	0	0
Have you heard of the maxillofacial prosthodontics branch of dentistry which deals with the restoration of maxillofacial defects with an artificial substitute?	Yes	24	10.9
	No	195	89.1
If you have heard of it, where did you hear about it?	Newspaper	0	0
	Friends	0	0
	Books	18	8.2
	Dentist	6	2.7

Table 1. Doctor's Awareness and Knowledge Regarding Maxillofacial Prosthodontics

Amongst the 71 % of practitioners who were aware of maxillofacial prosthesis, the commonest source of information was a dentist acquaintance (39.7 %) followed by friend (38.8 %) and books (31.5 %). 26.4 % of medical practitioners had seen a patient with such defects rehabilitated with a prosthesis whereas 73.5 % of practitioners had denied of the same. Only 2.3 % of participants had referred such cases with maxillofacial defects for rehabilitation and had referred them to plastic surgeons with no follow up. 0.9 % referred it for eye and ear prosthesis each and 0.5 % for ear prosthesis, most of the participants referred the patients to plastic surgeons.

Graph 2. Awareness of Type of Maxillofacial Prostheses among the Medical Practitioners

Graph 3. Type of Prostheses the Medical Practitioners had Referred the Patient for

19.2 % of practitioners had knowledge about implant being used as retentive aid for maxillofacial prosthesis. Whereas 80.8 % were not aware about it, and none of the practitioners knew about the average cost of a maxillofacial prosthesis. None of the practitioners were found of any idea about the cost of a maxillofacial prosthesis.

Graph 4. Awareness about a Prosthodontist Who is a Dental Specialist, is Trained and Treats such Defects with Maxillofacial Prosthesis

Most of the 18.2 % were ophthalmologists having idea only about eye prosthesis. Out of 10.9 %, 8.2 % had read it in medical books sometime and only 2.7 % had known it through dentist acquaintance. Positive response was obtained from about 40 % of participants who wrote that this survey questionnaire itself brought new knowledge and they are keen onto seeking more.

DISCUSSION

Maxillofacial prosthodontics seeks to restore form and function of patients with head and neck defects, also extended appliances like finger prosthesis, vaginal stents and much more using removable prosthesis. Maxillofacial prosthodontists work as part of a multi-disciplinary team. They work closely with oral and maxillofacial surgeons, plastic surgeons, ear, nose and throat surgeons, ophthalmologists, general surgeons, general physicians, oncologists, orthopaedic surgeons, gynaecologists and paediatricians, speech therapists, occupational therapists and physiotherapists.

Ability and the scope of a Maxillofacial prosthodontist amongst the general public and the medical practitioners is scarcely understood. The practitioners are minimally aware of such a treatment modality and that it comes under the curriculum of a prosthodontist. On account of the lack of awareness, the patients with maxillofacial defects are not adequately guided and referred to a maxillofacial prosthodontist for rehabilitation.

Therefore, the present study was conducted as an attempt to collect the data regarding awareness and knowledge of the medical practitioners towards the maxillofacial branch of dentistry as a speciality to restore maxillofacial defects.

The observations of this study were as follows -

Nearly 52.1 % of medical practitioners amongst 219 who were surveyed reported that they were aware of both congenital as well as acquired defects whereas, 29.7 % informed that they did not have any knowledge of defects. (Graph 1)

Further questions addressed the awareness regarding types of prosthesis and their source of information. Various types of prostheses like ear, eye, nasal & mid-facial prosthesis, cranial prosthesis, prosthesis for maxilla & mandible or any other prosthesis like finger were known to the surveyed medical practitioners in various frequencies as shown in the table (Graph 2). Also, friends, their colleagues and textbooks were the common source of information. While 29.68 % did not have any information about maxillofacial prosthesis.

When enquired that if any of the medical practitioners have personally come across a patient with maxillofacial defect ever in their practice, 70.3 % of the practitioners denied for it and remaining 24 % who witnessed such patients, belonged mostly to the department of ophthalmology and ENT

associated with educational institutions. A large number of these practitioners belonged to the ophthalmology department as it is a common practice for them to use prefabricated eye shell which is readily available for immediate restoration of any ocular defect³. These prefabricated eye shells provide immediate restoration of the defect, but it does not restore the aesthetics and functionality in terms of support and movement which is quite possible in case of customised eye prosthesis.

Response to the next question revealed that only 5 [2.3 %] people amongst 219 practitioners have actually referred such patients with maxillofacial defects for rehabilitation (Graph 3). The defects were 2 patients with ocular defect, 1 with auricular defect and 2 for finger prosthesis and the practitioners were a part of departments of educational institutions / hospitals.

Patients with such kind of defects have adverse effects on the quality of life. The World Health Organisation (WHO) has defined quality of life (QoL) as "an individual's perception of his position in life in the context of the culture and value system in which he lives and in relation to his goals, expectations and standards and concerns."⁹ Mc Grouther¹⁰ concludes that even minor facial abnormalities can result in social stigma. Therefore, complete rehabilitation of the patient must be considered while planning treatment.

The recent advancement in the field of maxillofacial prosthodontics is the use of extraoral and intraoral implants for enhanced retention and support such types of prosthesis which is one of the most difficult and crucial factor to achieve during rehabilitation. When questioned about this, only 19.2 % of the practitioners were aware that the implants could be used to improve the prognosis of the prosthesis. Surprisingly, none of the practitioners had any idea regarding the average cost of maxillofacial prosthesis.

As far as the materials used for the fabrication of such prosthesis are concerned, 13.2 % practitioners showed their knowledge regarding acrylic resin material, 25.6 % people knew that it could be fabricated in silicone and 26.9 % had idea of both.

18.2 % of the practitioners recognised prosthodontists to be a dental specialist who deals with maxillofacial prosthesis (Graph 4). These practitioners were the ones attached with the educational institutions associated with dental set-up from Departments of Ophthalmology and ENT. Private practitioners were not much aware. While, only 10.9 % (Graph 5) of them knew that maxillofacial prosthodontics is the speciality dealing with rehabilitation of maxillofacial defects, their source of information being textbooks and dentists 8.2 % and 2.7 % respectively.

The survey reveals the percentage of awareness amongst the medical practitioners regarding various maxillofacial defects but at the same time it recognises the lack of awareness amongst them regarding a person who could be their colleague and be a part of multidisciplinary team which is responsible for addressing the need of patients' suffering with various kinds of maxillofacial defects.

Similar problem was documented by oral surgeons who are qualified in treating pathologies of craniofacial region have much less recognition amongst other medical colleagues. Navin et al. conducted a survey to assess the knowledge, attitude and awareness of the subject of oral and maxillofacial surgery amongst the consultants and practitioners of medicine in district of Vadodara and observed that few cases [like

surgical removal of third molar, oral submucous fibrosis and implants] were the only problems where oral surgeons were preferred. For maxillofacial trauma and pathology, plastic surgeons; orthopaedic and ENT surgeons were preferred.¹¹

In developed countries, the concept of a maxillofacial centre being an integral part of hospitals is a common finding. But this kind of approach towards rehabilitation of maxillofacial defects is very scarcely seen in India. Only in a few metropolitan cities a few health care centres have a maxillofacial unit wherein, a multidisciplinary team of medical and dental practitioners collaborate to deal with the maxillofacial cases.

CONCLUSIONS

Knowledge and awareness about maxillofacial prosthodontics as a specialty is poor. This probably is the reason why a patient in need of maxillofacial prosthesis could not find the correct doctor to treat his / her condition and remains without complete rehabilitation. The survey indicates a need to conduct awareness activities amongst the medical practitioners. An initiative to join hands to form a multidisciplinary team is required to improve the health-related quality of life of individuals with maxillofacial defects.

Limitations

The study is restricted to a small population, which restricted the information obtained about the awareness and knowledge of the maxillofacial branch of prosthodontics among the medical practitioners of Wardha city. The study was designed in a questionnaire format which is an indirect form of collecting information, other effective methods such as personal interactions and / or interviews could be undertaken.

Data sharing statement provided by the authors is available with the full text of this article at jemds.com.

Financial or other competing interests: None.

Disclosure forms provided by the authors are available with the full text of this article at jemds.com.

REFERENCES

- [1] Dings JPI, Merckx MAW, MacLennan-Naphausen MTPDC, et al. Maxillofacial prosthetic rehabilitation: a survey on the quality of life. *J Prosthet Dent* 2018;120(5):780-6.
- [2] Pisulkar S, Pakhan AJ, Godbole SR. Psychological considerations in patients with maxillofacial defects: a literature review. *Journal of School of Advanced Studies* 2018;1(2):57-60.
- [3] Belkhode V, Sathe S, Nimonkar SV, et al. Customized esthetic ocular prosthesis-a case report. *Journal of School of Advanced Studies* 2018;1(1):29-32.
- [4] Beumer J, Curtis TA, Marunick MT. Maxillo facial rehabilitation: prosthodontic and surgical consideration. 2nd edn. 1996.
- [5] Rumsey N, Harcourt D. Body image and disfigurement: issues and interventions. *Body Image* 2004;1(1):83-97.
- [6] Karthikeyan I. A review on prosthetic rehabilitation of maxillofacial region. *Anaplastology* 2014;3(1):1-5.
- [7] Shinde DM, Godbole SR. Prosthetic rehabilitation of neurosurgical cranial defect using polymethyl-methacrylate material-case report. *Sch J Dent Sci* 2019;4.
- [8] Shaheed R, Shukla S, Acharya S, et al. Journey from fighters to survivors: quality of life and mental status in cancer patients in a rural tertiary care hospital. *Journal of Clinical and Diagnostic Research* 2019;13(8):1-4.
- [9] Gondivkar SM, Bhowate RR, Gadgil AR, et al. Quality of life and oral potentially malignant disorders: critical appraisal and prospects. *World J Clin Oncol* 2018;9(4):56-9.
- [10] Newton JT, Fiske J, Foote O, et al. Preliminary study of the impact of loss of part of the face and its prosthetic restoration. *J Prosthet Dent* 1999;82(5):585-90.
- [11] Shah N, Patel N, Mahajan A, et al. Knowledge, attitude and awareness of speciality of oral and maxillofacial surgery amongst medical consultants of vadodara district in Gujarat state. *J Maxillofac Oral Surg* 2015;14(1):51-6.