

Survey Regarding the Awareness Towards a Dental Specialist Prosthodontist and Their Role in Rehabilitation of Missing Teeth and Maxillofacial Structures, in Gujarat Population

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ABSTRACT

Background: There are numerous challenges related to oral health, that can be effectively treated if patients are well aware about the entire possibilities of treatments, which also tends to increase their acceptance respective to any procedures. This study aims to evaluate the knowledge, and awareness, regarding Prosthodontist and their rehabilitative role.

Material and Methods: This study was conducted in Government Dental College and Hospital, Ahmedabad, Gujarat. The target population was divided into four groups based on geography of Gujarat state. Gujarat state is divided into 4 zones, i.e., North Gujarat, South Gujarat East Gujarat, and West Gujarat, in an attempt. Samples were collected by the help of google forms and Physical questionnaire respectively, from each demographic zone. The questionnaire comprised of 12 close ended questions written in English and Gujarati (Regional Language). Data was analysed using the statistical package SPSS 26.0 (SPSS Inc., Chicago, IL).

Results: Total population of 2225 participated. Out of which, 1669 (69.8%) were male and 731 (30.2%) were female. On asking, Majority of the population 1984 (82.7%) was not aware about Prosthodontist as a dental specialty. For the Treatment options considered and number of Treatments known, maximum people i.e., 899 (37.5%) were aware about CD/RPD (Removable Dentures) alone, then CD/RPD, FIXED crown bridge, Dental Implants 784 (32.7%), then Dental Implants alone 326 (13.6%), CD/RPD, FIXED crown bridge, Dental Implants, Maxillofacial Prosthesis 178 (7.4%), then CD/RPD, Fixed Crown /Bridge 117 (4.9%), then CD/RPD, Dental Implants 56 (2.3%), then Fixed Crown/Bridge 23 (1%), and lastly CD/RPD, Dental Implants, Maxillofacial Prosthesis 17 (0.7%).

Conclusion: The Results suggests inadequacy in proper awareness about Prosthodontic, as a specialty and treatment options pertaining to the respective branch. Dental Outreach programs/Awareness camps organized has not yet reached significant portion of Gujarat Population.

Keywords: Awareness, Prosthodontist, Rehabilitation, Gujarat population.

INTRODUCTION

Edentulism refers to the condition of having lost all natural teeth. Complete edentulism signifies an oral cavity devoid of any teeth, which significantly impacts overall well-being and quality of life. Particularly among the elderly, edentulism poses a substantial public health challenge and significantly influences primary care practices. It's considered a profound and irreversible ailment, often viewed as the ultimate indicator of oral health decline. Those affected by edentulism experience a spectrum of physical changes and health issues. Tooth loss not only impairs chewing and speech but also diminishes aesthetics, ultimately diminishing one's quality of life. (1)

According to a Study by Peltzer et al., prevalence of edentulism was 16.3% in India.(2) Patients have access to a range of prosthetic treatments to replace missing teeth, such as removable partial dentures, fixed partial dentures, complete dentures, and implants. Recognizing and addressing the attitudes and awareness of the general population towards tooth replacement is crucial for ensuring acceptance of prosthetic rehabilitation. (3,4,5)

A review of literature indicates a lack of documented evidence concerning the prosthodontic health status and prosthetic rehabilitation requirements of the general population in Gujarat state. Therefore, this survey was conducted to investigate the understanding, awareness, and attitudes towards prosthodontic and maxillofacial rehabilitation among the residents of Gujarat State.

MATERIALS AND METHOD

Sample Size Estimation:

$$SS = [Z^2 p (1 - p)] / C^2$$

- SS = Sample size
- Z = Given Z value
- p = Percentage of population
- C = Confidence level

P=PERCENTAGE VALUE (Expected proportion of samples meeting the criteria)-20%

Z_α at 99 % CI=2.98

C= 0.05 at 95% confidence level

$$\text{Sample size} = \frac{2.98^2 \times 0.2(1-0.2)}{0.05^2} = 2222.4$$

Final Sample = 2225

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A total of 2400 subjects participated in the survey, with their due consent. A self-made questionnaire (Annexure-1) which was written either in English and Gujarati language was given to the participants. The questionnaire contained a total of 16 Questions. Out of which, 4 questions were personal, 5 questions were awareness oriented of participants, and 7 questions were based on individual's knowledge and experience.

Gujarat state is divided into four zones i.e., North zone, South zone, West zone, and East zone, so as to avail uniform samples from all over the state.

Inclusion criteria:

- Subjects belonging to the age group of 35-74 years, both
- males and females
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- males and females
- Subjects belonging to the age group of 18-75 years, both males and females.

Exclusion criteria:

- Participants with psychological disorders were excluded.
- Participants who were unable to comprehend and respond to the questions were excluded.

STATISTICAL ANALYSIS

Data was analyzed using the statistical package SPSS 26.0 (SPSS Inc., Chicago, IL) and level of significance was set at $p < 0.05$. Descriptive statistics was performed to assess the mean and standard deviation of the respective groups. Normality of the data was assessed using Shapiro Wilkison test. Inferential statistics to find out the Association between the groups was done using CHI SQUARE TEST.

RESULTS

Table 1: ARE YOU AWARE OF PROSTHODONTIST, A SPECIALITY IN DENTISTRY?

	Frequency	Percent
NO	1984	82.7
YES	416	17.3
Total	2400	100.0

Total of 2400(100%) people participated in the survey, out of which majority of population i.e., 1984 (82.7 %) were not about of the term or specialty, Prosthodontist.

Table 2: IF YES, WHAT IS YOUR SOURCE OF AWARENESS?

	Frequency	Percent
BY A FRIEND/FAMILY MEMBER	94	3.9
I DON'T KNOW	1984	82.7
INTERNET	36	1.5
SELF	198	8.3
UNDERWENT ANY TREATMENT	88	3.7
Total	2400	100.0

The table summarizes how individuals obtained information or made decisions: 82.7% were unsure ("I DON'T KNOW"), 8.3% relied on themselves ("SELF"), 3.9% consulted friends or family ("BY A FRIEND/FAMILY MEMBER"), and smaller

percentages used the internet (1.5%) or had undergone treatment (3.7%). The data, from a total of 2400 respondents, highlights varied sources influencing decision-making processes.

Table 3: HOW MANY TREATMENT OPTIONS ARE YOU AWARE OF, FROM BELOW MENTIONED LIST?

	Frequency	Percent
Valid CD/RPD, FIXED crown bridge, Dental implants, Maxillofacial Prosthesis	178	7.4
CD/RPD, FIXED crown bridge, Dental implants	784	32.7
CD/RPD, Dental Implants	56	2.3
CD/RPD, Fixed Crown /Bridge	117	4.9
CD/RPD, Dental implants, Maxillofacial Prosthesis	17	.7
Dental Implants	326	13.6
CD/RPD	899	37.5
Fixed Crown/Bridge	23	1.0
Total	2400	100.0

The table details preferences and frequencies of dental treatments and prosthetics among 2400 respondents. The most common choices include combinations like CD/RPD with fixed crown bridges and dental implants, totaling 32.7%, followed by CD/RPD alone at 37.5%. Dental implants were selected independently in 13.6% of cases, while other combinations involving maxillofacial prosthetics and fixed crown/bridge had smaller shares,

highlighting diverse treatment preferences among respondents.

Table 4: HAVE YOU UNDERGONE ANY OF THE ABOVE MENTIONED TREATMENT?

	Frequency	Percent
NO	1686	70.3
YES	714	29.8
Total	2400	100.0

The table shows that 29.8% of respondents has undergone any of the above mentioned

treatments, while 70.3% were not undergone any dental treatment totaling 2400 responses.

TABLE 5- ARE YOU AWARE THAT THERE IS POSSIBLE TREATMENT FOR MISSING TEETH/ ANY MAXILLOFACIAL STRUCTURE

	Frequency	Percent
NO	1272	53.0
YES	1128	47.0
Total	2400	100.0

Table shows that 53.0% of respondents answered "NO" while 47.0% answered "YES" out of 2400 total responses, indicating a fairly balanced distribution between the two options.

TABLE 6- DO YOU KNOW WHETHER IT IS POSSIBLE TO REHABILITATE MISSING TEETH OR ANY HEAD AND NECK STRUCTURE WITH ARTIFICIAL SUBSTITUTE?

	Frequency	Percent
NO	1675	69.8
YES	725	30.2
Total	2400	100.0

TABLE 8- IF YOU ARE ANY HEALTH CARE PROFESSIONAL, HAVE YOU REFERRED ANYONE IN NEED TO A PROSTHODONTIST?

	Frequency	Percent
I AM NOT A HEALTH CARE PROFESSIONAL	1336	55.7
NO	778	32.4
YES	286	11.9
Total	2400	100.0

This Table indicates that among healthcare professionals surveyed, 11.9% have referred someone in need to a prosthodontist, while 32.4% have not, with 55.7% indicating they are not healthcare professionals, from a total of 2400 responses.

TABLE 9- ACCORDING TO YOU IS IT NECESSARY TO REPLACE AND REHABILITATE LOST STRUCTURE OF HEAD AND NECK?

	Frequency	Percent
NO	1087	45.3
YES	1313	54.7
Total	2400	100.0

It reveals that 54.7% of respondents consider it necessary to replace and rehabilitate lost structures of the head and neck, while 45.3% do not, based on 2400 total responses.

In Table 6, 69.8% of respondents were unaware that it is possible to rehabilitate missing teeth or head and neck structures with artificial substitutes, while 30.2% acknowledged the feasibility of such treatments among 2400 total responses.

TABLE 7- ACCORDING TO YOU IS IT IMPORTANT AFTER ANY SURGICAL REMOVAL OF ANY PART OF HEAD AND NECK, TO REFER THE PATIENT TO A PROSTHODONTIST?

	Frequency	Percent
No	1688	70.3
YES	712	29.7
Total	2400	100.0

Table 7 shows that 70.3% of respondents do not consider it important to refer patients to a prosthodontist after surgical removal of any part of the head and neck, while 29.7% believe it is necessary among 2400 total responses.

TABLE 10- DO YOU FEEL, YOU OR ANYONE AROUND YOU NEED TREATMENT FOR MISSING TEETH OR MISSING FACIAL STRUCTURE?

	Frequency	Percent
NO	1483	61.8
YES	917	38.2
Total	2400	100.0

Table 10 shows that 38.2% of respondents feel they or someone around them need treatment for missing teeth or missing facial structure, while 61.8% do not express such a need, based on 2400 total responses.

TABLE 11- IF YES, HAVE YOU GONE/ REFERRED THAT PERSON AROUND YOU TO A PROSTHODONTIST?

	Frequency	Percent
NO	1800	75.0
YES	600	25
Total	2400	100.0

Table 11 indicates that among those who indicated a need for treatment for missing teeth or facial structure (38.2% of respondents), 25% have been referred to or have gone to a prosthodontist, while 75% have not. This suggests a significant gap between recognizing the need for treatment and actually seeking or referring specialized care, highlighting potential areas for improved healthcare navigation and patient education efforts.

TABLE 12- DO YOU WANT TO KNOW MORE ABOUT THIS SPECIALITY?

	Frequency	Percent
I AM NOT INTERESTED	525	21.9
NO	1162	48.4
YES	713	29.7
Total	2400	100.0

Table 12 shows that 29.7% of respondents are interested in knowing more about the specialty of prosthodontics, while 48.4% are not interested and 21.9% explicitly stated they are not interested, from a total of 2400 responses.

TABLE 13- ASSOCIATION BETWEEN EDUCATION & TREATMENT OPTIONS

		HOW MANY TREATMENT OPTIONS ARE YOU AWARE OF, FROM BELOW MENTIONED LIST?									Total
		CD/RPD, FIXED crown bridge, Dental implants, Maxillofacial Prosthesis	CD/RPD, FIXED crown bridge, Dental implants	CD/RPD, Dental Implants	CD/RPD, Fixed Crown/Bridge	CD/RPD, Dental implants, Maxillofacial Prosthesis	Dental Implants	CD/RPD	Fixed Crown/Bridge		
EDUCATION	GRADUATE (ANY FIELD)	26	269	10	37	6	109	247	8	712	
	HEALTH CARE PROFESSIONAL (DENTAL/MEDICAL/ANY OTHER)	140	19	6	10	5	1	8	1	190	
	ILLITERATE	11	496	40	70	6	214	644	14	1495	
	STUDENT	1	0	0	0	0	2	0	0	3	
Total		178	784	56	117	17	326	899	23	2400	

Table 13 illustrates the association between respondents' education levels and their awareness of different dental treatment options. It shows the number of respondents from different educational backgrounds who are aware of various treatment options:

- **Graduate (any field):** Most aware of CD/RPD, fixed crown bridge, dental implants (269), followed by CD/RPD (247) and dental implants (109).

- **Healthcare professionals:** Primarily aware of CD/RPD (140) and dental implants (190).
- **Illiterate:** Predominantly aware of CD/RPD (644) and dental implants (496).
- **Student:** Minimal awareness, with awareness limited to CD/RPD (2).

Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	1388.631 ^a	21	.000
Likelihood Ratio	776.507	21	.000
N of Valid Cases	2400		

a. 11 cells (34.4%) have expected count less than 5. The minimum expected count is .02.

Significant association exist between education & treatment options (P<0.05).

It highlights varying levels of awareness among different educational groups regarding comprehensive dental treatment options, reflecting potential disparities in access to information and healthcare knowledge across educational backgrounds.

DISCUSSION

Table 1 and Table 2 depicts awareness of prosthodontists, A significant majority (82.7%) of respondents were unaware of prosthodontists, a specialized field in dentistry. Among those aware, sources of awareness varied with self-discovery (8.3%) and familial influence (3.9%) being notable factors. This highlights gaps in public knowledge that could impact healthcare decision-making (6,7).

In Table 3 Knowledge of Treatment Options were assessed. Respondents exhibited varied familiarity with dental treatment options, with combinations like CD/RPD with fixed crown bridges and dental implants being the most recognized (32.7%). This indicates a preference for comprehensive dental solutions among respondents, influencing their treatment decisions (8).

Table 4 represents experience with treatments amongst population. A notable 29.8% of respondents reported undergoing dental treatments, reflecting the practical application of treatment knowledge among those surveyed (9).

Perceptions on Rehabilitation is shown in Table 6 and 7. While a substantial portion (69.8%) were unaware of the possibility to rehabilitate missing teeth or head and neck structures, 54.7% recognized the importance of rehabilitation post-surgical removal. This disparity underscores the need for education on prosthodontic interventions post-surgery (10,11).

Referral Practices are shown in Table 8 and 11. Among healthcare professionals, 11.9% reported referring patients to prosthodontists, highlighting potential gaps in referral practices that could impact patient outcomes. Additionally, despite awareness of treatment needs (38.2%), only 25% were referred to

prosthodontists, indicating room for improvement in referral patterns (12, 13). Interest in Individual's Learning and curiosity is shown in Table 12. Nearly 30% expressed interest in learning more about prosthodontics, indicating a potential for increased awareness and education initiatives to bridge existing knowledge gaps (14).

CONCLUSION

The findings emphasize the importance of enhancing awareness, education, and referral practices related to prosthodontics. Addressing these gaps can potentially improve patient outcomes and facilitate informed decision-making in dental care.

Declaration by Authors

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