

Awareness about Prosthodontic Treatment Modalities based on Socioeconomic Status among Patients Visiting Dental Colleges in Jharkhand, India- A Patient Survey

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ABSTRACT

Introduction: The questionnaire-based survey was carried out to evaluate about different types of prosthetic treatment modalities specifically removable prosthesis, fixed teeth supported prosthesis and implants in relation to different socioeconomic factors.

Materials and Methods: A close-ended questionnaire-based study was carried out between January 2021 to February 2022 and a total of 1000 patients between 18 to 80 years were selected who were satisfying the inclusion criteria.

Results: Females were more aware about removable prosthesis (41.86%) and dental implants (11.99%). Patients with primary level of education were more aware about removable prosthesis (41.25 %). Patients with elementary occupation were least aware (46.61%) about different types of treatment modalities. Professionals had more knowledge about FPD (66.66%). Tendency of fixed teeth supported prosthesis and overall awareness were significantly higher among the patients with monthly income more than Rs.6000/-.

Conclusion: Females were more aware about different prosthetic treatment options. Patients with higher education and income were more aware about fixed prosthetic treatment. Patients who were in service and skilled workers were almost equally aware about removable and fixed prosthesis treatment.

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Received: December 23, 2023; **Accepted:** January 02, 2024; **Published:** January 06, 2024

Introduction

Awareness is a condition of being alert of one's surroundings and external phenomena as well as one's personal state. Loss of teeth significantly impairs oral functions and masticatory efficiency. Oral health related quality of life declines with compromised chewing function due to unreplaced missing teeth. Due to lack of awareness about importance of prosthodontic replacement, mostly patients do not seek treatment immediately after tooth loss, even if replacement of missing teeth is strongly indicated. In an Indian study 65.1% of the general population exhibited awareness about prosthodontic treatment that was assessed by asking questions which were related to demographics, tooth replacement knowledge, awareness of different treatment options available and the justification of selecting an option over another. Prosthetic rehabilitation depends on various factors. These are the number of missing teeth and their location in dental arch, current medical and dental status, socio-demographics, age, gender and patient's needs and demands. Undertaking all the strands of prosthetic restoration, the main challenge is to serve the patient's demand by replacement of missing teeth to restore function and aesthetics without harming the remaining soft and hard tissues.

In 2013 Abdur Rahiman et al. in their study founded that usually young age patients have more knowledge as compared to old age

patients and females were more aware as compared to males. The current investigation reveals that the awareness significantly improves with the level of literacy. A closely similar study regarding factors affecting different prosthetic treatment modalities of single-tooth replacement stated that literacy standard greater than high school are well aware of removable partial denture (RPD), fixed partial denture (FPD) and dental implants than the individuals who received education lesser than high school level. Mukatash GN et al. in their studies concluded that the medical and para-medical community were more aware about their needs and demands of prosthetic treatment than the general population [1].

In 2015 Vidhya Jeyapalan et al. studied that the lower income group people could not afford the treatment procedures that would have saved their questionable tooth, so they might have opted for extraction [2]. Less educated people were not much aware about oral health care. People with better employment status were more concerned about their aesthetics and opted for dental treatment. In 2011 Firas A Al Quran studied that the difference between FPD and RPD when compared with control groups regarding monthly income were not significant [3]. Among study population 60% patients with higher income chose the implant treatment option. Persons of low socioeconomic status tend to seek low-cost treatment. In 2009 Prabhu N. et al. studied that the lack

of motivation was the common reason for not seeking dental treatment [4].

Attitude towards replacement of missing teeth also depends on the location of missing teeth in the arch. Studies shows that majority of patients are concerned with the replacement of missing anterior teeth more than posterior teeth. Aesthetics were given much more importance than function. Patients who had one or two posterior teeth missing in single arch only usually do not show any interest to replace the missing teeth because masticatory function is compensated by opposing teeth. Among the prosthodontic replacements, dental implants supported prostheses have the advantages of increased occlusal support, preservation of adjacent teeth and fixed nature of restoration. Therefore, implant supported restoration is the treatment of choice for most patients. However, implants are not economically feasible for many patients, and the associated surgery is a major concern precluding treatment as expressed by the patients.

A significantly higher percentage of subjects in the middle and upper socio-economic categories had opted for implants and fixed partial denture, compared to those in the lower socio-economic categories. The social pressure of maintaining the aesthetics and function may be the driving force that influences the subjects in the upper classes to get their missing teeth replaced. In addition to this, the attitude and awareness towards dental care and the cost of dental treatment might also be the significant factors that determine the prosthetic status in a person. This was evident when the utilization of dental services was assessed, which was also significantly better among the subjects from the more well to do classes.

The study was carried out to assess awareness about different types of treatment modalities regarding replacement of missing teeth. The study gives an overall idea about the attitude towards artificial prosthesis of patients from different socioeconomic background. This would help educate the prosthodontic fraternity and the dental community thereby enabling more informed counselling and promotion of prosthodontic services in order to improve the oral health condition of patients with missing teeth.

Materials and Method

A cross sectional and epidemiological study was carried out with a study population of 1000 patients visiting the Department Prosthodontics and Crown and Bridge of Vananchal Dental College and Hospital, Garhwa. A simple random technique was utilized for sample collection. The inclusion criteria consisted of both genders, age between 18 to 80 years, having partially edentulous areas in either or both arches, having any socioeconomic background. Partial edentulousness due to trauma or surgery was excluded from this study.

The study was performed after approval by the Ethics Committee of Vananchal Dental College and Hospital, Garhwa. Each patient was explained thoroughly about the purpose of the study and after receiving consent they were included in the study population.

A close-ended questionnaire-based study was carried out to evaluate awareness about different types of treatment modalities i.e., removable prosthesis, fixed teeth supported prosthesis and implants in relation to their socioeconomic background. The questionnaire was prepared after studying different types of indexed articles regarding our subject and it was written in two different languages (English and Hindi) for conveniences of the study [5].

Each patient was asked whether they had any knowledge about different types of prosthetic treatment modalities and based on their answers they were classified into these categories

- Aware about removable prosthesis
- Aware about conventional teeth supported prosthesis
- Aware about dental implants
- Unaware about different types of prosthesis

Three parameters were used to evaluate the relation between general awareness of different prosthesis with their socioeconomic condition. These were patient's education, occupation and income of the family. Each patient was asked about their education level, nature of job, monthly income and based on their answers data were recorded by well trained professionals. Data obtained from questionnaire were subjected to statistical analysis with help of Epi Info (TM) 7.2.2.2 EPI INFO, a trademark of the Centres for Disease Control and Prevention (CDC).

The structure of questionnaire is given below

1. Patients Name
2. Gender
3. Age
4. Awareness about different types of prosthesis
 - Removable Prosthesis
 - Conventional Teeth Supported Fixed Prosthesis
 - Implant Supported Prosthesis
 - Unaware about different types of prosthesis
5. Socioeconomic Status
 - Educational Status
 1. Pre-Primary
 2. Primary & Upper Primary
 3. Secondary & Senior Secondary
 4. Higher Education
 - Occupational Status
 1. Professional
 2. Associate Professional
 3. Skilled and Service Workers
 4. Elementary Occupation
 - Economic status (monthly income in Rupees)
 1. Above 6,000
 2. 3000 – 6000
 3. 2000 – 2999
 4. Less than 2000

Results

Among 1000 patients, 50.8 % were males and 49.2 % were females. There was no significant association between gender and level of awareness of the patients ($p=0.51$). However, females had more knowledge about RPD and dental implants. Awareness about removable prosthesis, fixed teeth supported prosthesis and dental implants was 39.40%, 41.40 % and 10.50 % respectively in total study population.

Patients with primary level of education were more aware about removable prosthesis (41.25 %) and they had least knowledge about dental implants (5.30%). Patients with higher education were more aware about dental implants (13.00%) and about fixed teeth supported prosthesis (43.90%).

Skilled and service workers were overall equally aware about removable prosthesis (41.94%) and fixed teeth supported prosthesis (41.01%). Patients with elementary occupation were more aware about removable prosthesis (37.66%) and least aware about dental implants (1.36%). Awareness about dental implants is

36.78 %, 16.36%, 18.66 % and 1.36 % in professionals, associate professionals, skilled & service workers and in elementary occupation groups respectively.

Tendency of Fixed teeth supported prosthesis (68.06%) and overall awareness were significantly higher among the patients with monthly income >Rs.6000/. Patients with monthly income between 3000 – 6000 Rs are more aware about removable prosthesis (73.03%) than other prosthetic treatments. Patients with monthly income below 2000 Rs doesn't have any knowledge about dental implants.

Discussion

Partial edentulousness is a situation in which one or more but not all natural teeth are missing in a dental arch. Generally, it occurs by caries, periodontal problems, traumatic injuries, impactions, supernumerary teeth, neoplastic and cystic lesions. Various studies have reported caries as the main causative agent for tooth loss. An edentulous space in the dental arch has a direct impact on chewing efficiency, swallowing, food selection, nutritional status and physical ability that may lead to adverse impact on quality of life of the subject [6]. The prevalence and extent of tooth loss have decreased significantly in many countries during recent decades due to increased availability and accessibility of prevention and control programs about oral diseases, as well as due to increase in the awareness of the importance in oral health.

The patients visiting to the Department of Prosthodontics and Crown and Bridge for replacement of missing teeth are also aware in varying degree about the types of treatment modalities. Awareness is a condition of being alert of one's surroundings and external phenomena as well as one's personal state [7]. In an Indian study 29, 65.1% of the general population exhibited awareness about prosthodontic treatment which was assessed by asking questions in respect to demographic, knowledge of replacing missing teeth, attitude and awareness of different treatment options available for tooth replacement and the justification of selecting an option over another.

In this study the education level of total population was divided into four groups i.e.,

1. Pre-Primary
2. Primary & Upper Primary
3. Secondary & Senior Secondary
4. Higher Education

This classification was made based on Indian Standard Classification of Education (InSCED) 2014.

The occupational status was divided into four groups i.e.,

1. Professional
2. Associate Professionals
3. Skilled & Service Workers
4. Elementary Occupation

The classification was based on NATIONAL CLASSIFICATION OF OCCUPATIONS-2015(NCO), Vol-I Government of India Ministry of Labour & Employment Directorate General of Employment.

The monthly income level (rupees /month) was divided into four groups i.e.,

1. Above 6000
2. 3000 – 6000
3. 2000-3000

4. Less than 2000.

This classification was made based on BG Prasad's socioeconomic scale: May 2016.

Although there was no statistically significant relation between awareness and gender ($p > 0.05$), females were more aware about removable prosthesis (41.86 %) and dental implants (11.99%) than males 37.00 % and 9.05% respectively. Males were more aware about fixed teeth supported prosthesis (42.91%) than females (39.83%). SV Siva Teja et al. concluded that females had more knowledge about removable prosthesis (75.9%) and about dental implants (25.2%), where awareness level of male patients regarding removable prosthesis and dental implants was 71% & 21% respectively [8]. It was also found that males were more aware about fixed teeth supported prosthesis (53 %) than females (43%). They also showed that 56% of women were aware about to replace for missing teeth, and only 44% of men felt the need to avail treatment.

Tendency of Fixed teeth supported prosthesis and overall awareness significantly increased with increased level of education. Amal Ali Shafaei in his study showed that Patients with higher education were more aware about fixed teeth supported prosthesis (72.3 %) and about implants (18.5%) in compare to patients with education level high school or less i.e., 66.6% & 13 % respectively [5]. Similarly, occupation and monthly income of patients have also significant impact on knowledge of different prosthetic treatment options. Patients with elementary occupation are more aware about removable prosthesis (37.66%) and least aware about dental implants (1.36%). Monika Saini, Yashpal Singh in their study showed that patients with higher income were more aware about fixed prosthesis (52%) than lower income group patients (16%) [9]. Ayesha Aslam (2016) showed in her study that Self-employed professionals were more aware about different treatment modalities (26%) than unemployed group (11 %) [10].

Conclusion

Within the limitation of the study, it can be concluded that Females are more aware about different types of treatment modalities especially about removable prosthesis and dental implants. Males are more aware about fixed teeth supported prosthesis. Patients with primary level of education are more aware about removable prosthesis and they had least knowledge about dental implants. Patients with higher education are more aware about dental implants and about fixed teeth supported prosthesis. Knowledge about Fixed teeth supported prosthesis and overall awareness of patients were significantly higher among the professionals. Skilled and service workers are equally aware about removable prosthesis and fixed teeth supported prosthesis. Patients with elementary occupation are more aware about removable prosthesis and least aware about dental implants & about fixed teeth supported prosthesis. Tendency of Fixed teeth supported prosthesis and overall awareness were significantly higher among the patients with monthly income more than Rs.6000/-. Patients with monthly income between 3000 – 6000 Rs are more aware about removable prosthesis than other prosthetic treatments. Patients with monthly income below 2000 Rs don't have any knowledge about dental implants.

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