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RESEARCH ARTICLE
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FREQUENCY OF PARTIAL EDENTULISM AND AWARENESS ABOUT RESTORATION OF LOSS TOOTH AMONG PATIENTS PRESENTING TO A TERTIARY CARE HOSPITAL

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ABSTRACT

The oral cavity's primary structural and functional elements are teeth. In addition to mastication, speaking, and aesthetics, teeth also serve other purposes. Lack of teeth in the oral cavity causes problems with communication, bad aesthetics, and trouble chewing food, all of which have a significant impact on quality of life.

Objectives: The main objective of the study was to find out the frequency of partial edentulism and their awareness about replacement options among patients visiting the tertiary hospital in Abbottabad.

Methodology:

The current study was descriptive cross-sectional study conducted at the department of Prosthodontics, AIDC, Abbottabad. Two hundred and ninety-three patients of both genders aged 16-60 years and residents of Abbottabad assessed on basis of NIC were included while completely edentulous patients i.e. patients who have lost all their teeth, handicapped patients, patients with limited mouth opening, patients currently undergoing orthodontic treatment and patients with a maxillary obturator for a cleft palate were excluded.

Results: The mean age of study was 39.70±14.876 with range from 18 to 75 years. There were 239 (81.6%) missing teeth to some extents i.e. partially dentate and 54 (18.4%) did not exhibit any missing teeth, completely dentate while 151 (51.5%) males and 142 (48.5%) females.

Conclusion: The prevalence of partial edentulism was to be 81.6%. Correlation of partial edentulism with gender demonstrated that prevalence of partial edentulism was slightly higher in females.

Key Words: Fixed Denture, Complete Denture, Partial edentulism, Dental Implants, Number of missing teeth, Oral hygiene

INTRODUCTION

The oral cavity's primary structural and functional elements are teeth. In addition to mastication, speaking, and aesthetics, teeth also serve other purposes. Lack of teeth in the oral cavity causes problems with communication, bad aesthetics, and trouble chewing food, all of which have a significant impact on quality of life.[1] One of the most significant issues affecting the global population is edentulism. Its irreversibility can result in functional impairment, physical disability, mental disability, and social disability.[2]

Due to their great frequency, dental illnesses (particularly dental caries and periodontal diseases) play a significant influence in tooth loss in the adult population around the world. Edentulism affects 30% of the world's population between the ages of 65 and 74. However, the prevalence of partial edentulism varies greatly from one area of the world to the next. Iosif et al[3] looked at adult UK citizens' oral health results. Only 5.6% of their test respondents were completely toothless, while most of them (94.4%) had some missing teeth.[3] In contrast, Wu et al[4] discovered that just a fraction of Americans (25.6%) was somewhat edentulous in the USA. Additionally, Aslam et al[5] reported in their study that the prevalence of partial edentulism overall was 50.39%, with the 65-74 age group in both the upper and lower classes having the highest prevalence of tooth loss (96.18%).

There are several demographics, behavioural, or medical factors that have been linked to tooth loss. A dental arch is referred to as partially edentulous if one or more natural teeth, but not all of them, are absent. Caries, periodontal disease, severe traumas, impactions, extra teeth, neoplastic and cystic lesions are the most common causes. According to certain research, periodontal disease and dental caries are the main factors contributing to tooth loss.[3] Age and partial edentulism have been shown to positively correlate in several studies. The effects of partial edentulism on the participants include clinical difficulties and lifestyle constraints.[6]

Clinically, partial edentulism causes TMJ issues, impaired speech, facial alterations, and lateral eruption of opposing teeth in addition to drifting and tilting of adjacent teeth.[7] Additionally, the patient's ability to receive an effective restoration will be impacted by the loss and ongoing deterioration of the alveolar bone, the neighbouring teeth, and the supporting structures.[8] Partial edentulism is one lifestyle compromise that limits dietary alternatives and causes weight loss. Additionally, it causes a lack of self-assurance and restricted social interactions, which can negatively impact one's quality of life and result in psychological discontent. The percentage of persons who are partially dentate is rising, in part because of longer life expectancies, an increase in the population's senior members, and a transition from total tooth loss/total edentulism to partial edentulism.[9] People are losing fewer teeth because of better oral health maintenance, which has increased the demand for partial rather than complete edentulism treatment.

METHODOLOGY

This was a descriptive cross-sectional study carried out at Abbottatabad International Dental College, Abbottabad after approval from IRB of the institution vide # 101/AIDC dated 4th March 2023. Sample Size was 293 as calculated by OpenEpi. Both genders aged 16-60 years residents of Abbottabad assessed on basis of NIC were included while completely edentulous patients, i.e. patients who have lost all of their teeth, handicapped patients, patients with limited mouth opening, patients undergoing orthodontic treatment and patients with a maxillary obturator for a cleft palate were excluded. The purpose, procedures, risk and benefits of the study as explained to each participant before seating them in the dental chair. A detailed history was taken from each participant. Clinical examination was carried out by one examiner on the dental unit with sterilized instruments (mouth mirror, dental probe, tweezers, cotton pellets, compressed air) in an orderly manner from the right maxillary quadrant to the left maxillary quadrant and then to the left mandibular quadrant followed by the right mandibular quadrant. Every tenth patient was examined twice to reduce the inter examiner variability. The number of missing teeth was noted, if any, and the patient was marked down as partially dentate or completely dentate. Teeth previously restored using removable or fixed partial dentures were not included as missing teeth. The information recorded was transferred to the pre-structured data collection form

along with other parameters like age, gender, occupation, address, education level, reason for visit and socioeconomic status.

Data was analysed using SPSS-24. Partial edentulism was stratified among age, gender, history of smoking, level of education, socioeconomic status, oral hygiene status and types of partial dentures currently in use through chi-square test and keeping p value ≤ 0.05 as significant level.

RESULTS

The mean age was 39.70±14.87 years. There were 239 (81.6%) missing teeth to some extents i.e. partially dentate and 54 (18.4%) did not exhibit any missing teeth, completely dentate while 151 (51.5%) males and 142 (48.5%) females. Out of 151 male patients, 116 were partially dentate and 35 were completely dentate. Out of 142 female patients, 123 were partially dentate and 19 were completely dentate (Table 1).

Table 1: Demographic characteristics and frequency of partial edentulism (n=293)

Variable	**No.**	**%**
Partial Edentulism		
Yes	239	81.6
No	54	18.4
Gender		
Male	151	51.5
Female	142	48.5
Partial edentulism according to gender		
Male		
Partially dentate	116	76.8
Completely dentate	35	23.2
Female		
Partially dentate	123	86.6
Completely dentate	19	13.4

The number of partially dentate patients in 18–30-year age group was 102, in 31-40-year age group was 80, 41-50-year age group was 44, 51-60-year age group was 47, 61-70-year age group was 8 and 71 or above age group were 12 (Table 2).

Table 2: Frequency of different age groups

Age	**Frequency**	Partial edentulism
18-30	102 (34.8%)	65 (63.7%)
31-40	80 (27.4%)	65 (81.3%)
41-50	44 (15%)	42 (93.3%)
51-60	47 (16%)	47 (100%)
61-70	8 (2.7%)	8 (100%)
71 or above	12 (4.1%)	12 (100%)
Total	293 (100%)	239 (81.6%)

The primary reasons for tooth loss were caries (58%), periodontal disease (7.5%) and combination of caries & periodontal disease (7.5%) (Table 3).

Table 3: Frequency of reasons for tooth loss

Variable	No.	%
Periodontal	22	7.5
Caries	172	58
Trauma	13	4.4
Periodontal + Caries	22 (7.5)	7.5
Caries + Trauma	2 (0.7)	0.7
Others	10 (3.4)	3.4
Not Applicable	54 (18.4)	18.4

When they were asked about restoration of missed tooth options only 106 (36.2%) were aware of partial dentures followed by 91 (31.04%) Complete dentures and 58 (19.8%) about Fixed denture and 38 (12.96%) were aware of Dental implants. (Table 4)

Table 4: Awareness of patients regarding replacement options for loss tooth

Variable	No.	%
Tooth replacement options		
Dental Implant	38	(12.96)
Fixed dentures	58	(19.8)
Partial Dentures	106	(36.2)
Complete Dentures	91	(31.04)

DISCUSSION

In many nations, tooth loss is a serious public health issue. The effects of edentulism on health and general quality of life are profound. Peoples how to see they have revealed that losing teeth can have an aesthetic, functional, psychological, and social influence on people. The prevalence rate in the current study was 81.6% with 239 partially edentulous individuals and 18.4% with 54 totally dentulous patients. The prevalence of tooth loss has been the subject of numerous studies across the globe to examine the influence of sociodemographic factors and lifestyle. However, in a developing nation like Pakistan, the increasing population and insufficient resources have hindered the viability of such investigations. The 18–30-year-olds and the 31–40-year-olds were found to have the highest prevalence of partial edentulism. This proved that younger and middle-aged age groups had higher rates of partial edentulism than older age groups did. According to the findings, there is a little gender difference in the prevalence of partial edentulism between males and girls, with 116 males and 123 females being partially edentulous. This is consistent with previous studies on prosthodontic needs as perceived by the individual, which show that gender is a significant factor. Higher social class individuals in this study had a lower prevalence of tooth loss, which was also documented in earlier investigations. Low social class individuals frequently have very little regard for their general health, and their dental health. They place little to no value on keeping their teeth healthy for the rest of their lives and would rather have them extracted than restored.[10-13]

Although similar studies have shown that lower socioeconomic levels do not necessarily correlate with an increasing number of missing teeth, this study has demonstrated that partial edentulism is more prevalent in the lower socioeconomic groups likely due to lower level of awareness, lack of access to dental facilities and financial constraints. Therefore, it was found that socioeconomic position relates to edentulism adversely, with individuals in lower In line with earlier studies[11-14], this study discovered that having less education was linked to edentulism. This finding may be explained by increased awareness, which may result in greater dental health knowledge and behaviour. The study identified dental caries (58%) and periodontal disease (7.5%), as well as a combination of caries and periodontal disease (7.5%), as major contributors to tooth loss. This finding is consistent with a large body of earlier research that has consistently highlighted the importance of specific diseases like dental caries and periodontal disease as major contributors to tooth loss.[12-16]

The study provides insight into the awareness levels of different tooth replacement options among patients visiting a tertiary care hospital. The findings suggest that awareness is highest for removable partial dentures (36.2%), followed by complete dentures (31.04%), fixed dentures (19.8%), and dental implants (12.96%). These results highlight significant disparities in knowledge regarding modern prosthetic solutions, which can influence treatment choices.

The results align with findings from a study by Al-Quran et al. (2011)[17], which reported that most patients are well-informed about removable prostheses, primarily due to their long-standing use and affordability. Similarly, studies in developing countries (Shigli et al., 2007)[18] have shown that traditional prosthetic options like complete and partial dentures are more widely recognized than advanced solutions like implants.

Awareness of fixed dentures (19.8%) in this study is lower than what has been reported in high-income countries. For instance, a study by Awooda et al. (2013)[19] in Sudan found that although patients were aware of fixed prostheses, their understanding of the procedure, benefits, and longevity remained limited. A similar trend has been noted in studies from India (Jain et al., 2017)[20], where fixed prosthetics are perceived as expensive and complex, limiting patient awareness and adoption.

The study found that only 12.96% of patients were aware of dental implants, which is consistent with findings from other developing regions. According to Awooda et al. (2013)[19], many patients have little to no knowledge about implants, primarily due to the lack of direct exposure, higher costs, and limited availability in public healthcare settings. In contrast, research from developed nations (Şahin 2024)[21] has shown that implant awareness is significantly higher, exceeding 70% in populations with better access to dental care and education.

CONCLUSION

The prevalence of partial edentulism was established to be 81.6%. Correlation of partial edentulism with gender demonstrated that prevalence of partial edentulism was slightly higher in the female gender.

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