

AWARENESS TO CONSEQUENCES OF MISSING TEETH AND PROSTHODONTIC TREATMENT MODALITIES IN PARTIALLY DENTATE PATIENTS REPORTING FOR DENTAL EXTRACTION

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ABSTRACT

The aim of the study was to determine the level of awareness of patients regarding both the consequences of missing teeth and prosthodontic treatment options. A cross-sectional study was conducted on 225 partially dentate patients in dental out-patient department, Khyber College of Dentistry, Peshawar from January 2013 to February 2015 by using consecutive non-probability sampling. Females (60.9%) reported more than males (39.1%). Majority of the subjects (81.3%) were unaware of consequences of missing teeth. Similarly 82.2% of the participants were unaware of the treatment options for replacement of missing teeth and those who were aware of the treatment options, only 4.4% knew about the fixed restorations, 6.7% were aware of the removable prosthesis and 0.4% for implant. This study will highlight the role of dentist in educating patients about prosthodontic treatment options and consequences of missing teeth at the time of dental extraction.

Key Words: Awareness, Missing teeth, Treatment options, Consequences

INTRODUCTION

Teeth play a significant part in maintaining a healthy personality, their loss might impair the quality of life.¹⁻³ The loss of teeth, as a sequel to a number of factors, results in bad consequences such as drifting and overeruption, TMD's and risk of further losing the adjacent tooth/teeth etc. Therefore, the inability of the patient to get the existing edentulous spaces restored with the available treatment options pose a challenge to the prosthodontic treatment. Various forms of prosthodontic treatment (tooth replacement), such as a removable partial denture, fixed partial denture or implant supported prostheses, have traditionally been recommended as preventive strategies for the adverse consequences of missing teeth.⁴⁻⁶ The benefits of dentures are many including the decreased risk of mortality in older individuals.^{7,8} However the aim to replace missing teeth is beyond the economic resources of many patients and the healthcare systems even in the most developed countries.⁹

Decision on getting dental prosthetic treatment has also been linked to demographic characteristics such as age, gender, education, economic condition and interest.^{5,10} For the promotion of oral or general health, education is considered as the most powerful tool, in making the patient aware of their health issues. Due to unawareness, most of the patients do not even know that missing teeth could be replaced. Usually patients are not aware about the consequences of missing teeth and the main available treatment options unless they are educated by the dentist.¹¹ A study in India by Nirmal et al revealed that despite of free treatment offered in government set-ups, lack of awareness of various prosthodontic treatment options prevented the people living in rural areas to avail treatment for missing teeth. Those who were aware of treatment options did not opt for any treatment, citing financial limitations as main cause for non-replacement.¹² A survey reported that 20.2% of the patients lacked knowledge about the consequences of missing teeth.¹³ Similarly, knowledge of the patient regarding various treatment options available for replacement of teeth was 60% and 46% for fixed prosthesis, 47.5% and 48% for removable partial dentures and 57% and 15.9% for Implant supported reconstructions in two different studies by Al-Quran and Satpathy et al respectively.^{14,15} Timely restoration of edentulous spaces is needed to prevent the adverse consequences of missing teeth. This study was conducted to assess awareness to consequences of missing teeth and prosthodontic treatment options in partially dentate patients. The findings of this study will help to signify the role of Prosthodontist as well

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Received for Publication: Jan 28, 2019

Revised: Feb 28, 2019

Approved: March 2, 2019

as general dental practitioners in highlighting some of the important aspects related to both the patients and care providers in this regard.

MATERIALS AND METHODS

A cross-sectional study was carried out in dental out-patient department, Khyber College of Dentistry, Peshawar starting from January 2013 to February 2015. Data were collected from two hundred and twenty five patients (225) including both genders with age ranging from 20-60 years. Patients who reported for dental extraction but had prosthetically un-restored partially edentulous areas in mouth for a minimum of one year were considered. This study excluded patients with cognitive impairment, reduced intelligence, un-cooperative behavior and those having history of fixed or removable prostheses.

After taking informed consent, demographics i.e., age, gender and education, were noted. The education of patient was assessed according to Kuppaswamy socioeconomic status index as '7' for Professional, '6' for Graduate or Post-Graduate, Intermediate as '5', High School and Middle School Certificate as '4' and '3' respectively. For primary schooling and illiteracy, '2' and '1' was noted. Intra-oral examination of the patient was carried out and the number and location of missing teeth were noted

Using a structured pro-forma, the criteria for patient's prosthetic knowledge was considered, as to whether the patient had any idea of the consequences of missing teeth and knowledge of the various treatment options available for the restoration of missing teeth or not. Any knowledge about the consequences of missing teeth, such as drifting and overeruption, TMD's and risk of further losing the adjacent tooth/teeth etc, was recorded as 'Yes' or 'Don't know'. Any knowledge of the treatment options available for replacing missing teeth was noted as 'Yes' or 'No'. If it was 'Yes' then further knowledge of various treatment modalities like fixed prosthesis, removable partial denture and implant supported prostheses was assessed. If the option was more than one it was recorded.

The data were coded, entered and analyzed using SPSS version 20. Descriptive statistics, like mean and median, were calculated for age. Frequencies and percentages were calculated for all other variables. Chi-square test was used to identify significance with P-value ≤ 0.05 as significant. All data is presented in tabulated form.

RESULTS

Out of 225 patients, there were 88 males and 137 females with the mean age of 41.5 ± 11.65 (SD) years and age ranging from 20-60 years (Table 1).

Results of this study showed that 65.8% were illiterate, 11.1% had primary education whereas 7.1%, 5.8% and 2.2% had intermediate, high and middle school certificate respectively. Only 7.1% and 0.9% were graduates and professionals respectively.

Those who were aware of the treatment options available for replacing missing teeth, 6.7% were aware of the removable prosthesis, 4.4% about fixed restorations and only a small percentage were aware for implant supported prostheses (0.4%). Awareness of patient to both fixed and removable prosthesis was noted to be very less (1.3%) whereas 4.9% were aware of all the treatment options. Majority of those who were unaware of treatment options available for replacement of missing teeth were illiterate (58.6%). Similarly 55.1% of the illiterate patients were not aware of the consequences of missing teeth.

DISCUSSION

In the present study, data were collected from 225 subjects reporting to dental out-patient department for dental extraction and were not restoring the previously existing edentulous spaces. This study gives information about subjects' knowledge related to the adverse consequences of missing teeth and various prosthodontic treatment modalities. In the present study females reported for dental extraction more frequently having a percentage of 60.9% and had previous untreated edentulous spaces. Males had better knowledge than females regarding both consequences of missing teeth and treatment options. In addition most of the subjects with the 1-8 teeth missing were unaware of the treatment options available for replacement of missing teeth showing a highly significant relationship having a p-value of 0.081 (p-value ≤ 0.05 as significant). Most of the subjects with low literacy rate were unaware of

TABLE 1: DEMOGRAPHICS, AWARENESS TO CONSEQUENCES OF MISSING TEETH AND TREATMENT OPTIONS

Variable	Categories	Frequency (%)
Age group (Years)	20-30	55 (24.4%)
	31-40	62 (27.6%)
	41-50	58 (25.8%)
	51-60	50 (22.2%)
Gender	Male	88 (39.1%)
	Female	137 (60.9%)
Are you aware of consequences of missing teeth	Yes	42 (18.7%)
	Don't Know	183 (81.3%)
Are you aware of treatment options available for missing teeth	Yes	40 (17.8%)
	No	185 (82.2%)

TABLE 2: AWARENESS TO PROSTHODONTIC TREATMENT OPTIONS AND CONSEQUENCES OF MISSING TEETH ACCORDING TO GENDER

Gender	Aware of treatment options				Aware of Consequences		
	Fixed	Remov- able	Implant	All	Fixed & Re- movable	Yes	Don't know
Male	8(3.5%)	8(3.6%)	1(0.4%)	3(4.9%)	7(0.8%)	23(10.2%)	65 (28.9%)
Female	2(0.9%)	7(3.1%)	0 (0%)	0(0%)	4 (0.5%)	19 (8.5%)	118 (52.4%)
Total	10(4.4%)	15(6.7%)	1(0.4%)	3(4.9%)	11(1.3%)	42(18.7%)	183 (81.3%)
P value			0.001			0.021	

TABLE 3: ASSOCIATION OF NUMBER OF MISSING TEETH WITH CONSEQUENCES OF MISSING TEETH AND TREATMENT OPTIONS

Number of missing teeth	Aware of treatment options		Aware of consequences of not replac- ing missing teeth	
	No	Yes	Yes	Don't Know
1-8	145(64.4%)	28 (12.4%)	30 (1.3%)	143 (63.5%)
9-16	22 (9.7%)	8 (3.5%)	8 (3.5%)	22 (9.7%)
17-24	18 (8%)	3 (1.3%)	3 (1.3%)	18 (8%)
25-32	0 (0%)	1 (0.4%)	1 (0.4%)	0 (0%)
Total	185(82.2%)	40 (17.7%)	42 (18.6%)	183 (81.3%)
p- value		0.081		0.107

the treatment options available for restoring missing teeth.

In this study only 17.8% of the subjects were aware of the treatment options available for replacement of missing teeth. This was in contrast to a study by Gupta et al in India which showed that 44% had insufficient and 55% had sufficient knowledge regarding treatment options for missing teeth. The author cites the most probable reason for this lack of awareness as the low literacy rate with 40.2% of the subjects having just primary education. The lack of awareness of various prosthodontic treatment options was the main cause which prevented patients from utilizing treatment for missing teeth.⁵

In the current study, those who were aware of the treatment options, 6.7% of the subjects knew about removable prostheses and 4.4% about fixed restorations. This was much less in contrast to study by Kumar et al where half of the patients were aware about fixed prosthesis as a means of replacement and 37.64% were aware of removable partial denture.¹⁶ However the lack of awareness to implant treatment option in our study (0.4%) and those reported by Kumar (4.8%)¹⁶, Reddy et al (10.7%)¹⁷, and Sathpathy et al (15.9%)¹⁵ was in contrast to studies in Norway, America and Australia where 70%, 77% and 79% of the subjects knew about implant treatment option.^{18,19} This was much higher percentages reported as compared to studies done on Asian population. This disparity could be due to the difference in standards of health and education between different countries.

In this study, only 18.7% of the subjects were aware of the consequences of missing teeth which was in contrast to a study by Bahannan in Saudi Arabia where 83% knew that not replacing missing teeth had bad consequences.²⁰ Knowledge of factors that influence tooth loss and wearing dentures is important for the effective planning and provision of oral health services, particularly in prioritizing prosthodontic care.²¹

The results of present study showed that patient's knowledge regarding different prosthodontic treatment options for missing teeth was found to be very low. This requires an initiative from the patient, dentist and government. Specifically the dentist's involvement in educating patients about benefits of getting dental prostheses at an early stage is of utmost importance. Patients should be made aware about the complications of not replacing missing teeth immediately at the time of dental extraction through the use of verbal communication, video informatics or information leaflets. This will improve the attitude of patients towards latest treatment options available for replacement of missing teeth, thereby improving the quality of life in patients. For the policy makers to avoid the negative consequences of tooth loss with respect to the patients concerned, disease prevention measures must be promoted when formulating health policy. Initiatives should be aimed not only on the preventive dental care but also on the curative aspects of oral health. The economic analysis of tooth replacement strategies is required for the effective implementation of preventive and prosthodontic strategies. Mobile dental clinics, dental camps, and

prosthodontic outreach programs are possible solutions to spread awareness, and extend treatment about ways and means of artificial teeth replacement.

The significance of this study is that for the acceptance of prostheses by the patient, knowledge regarding prosthodontic treatment options might play a vital role. Furthermore, it highlights a need to aware patients by providing more general and correct information to the patients about replacement of missing teeth by various dental prostheses.

LIMITATION

The survey was conducted in a government dental set-up where prosthetic treatment charges are different as compared to private dental care centers. This study didn't record the source of information for patients as well as other barriers associated with non-replacement of missing teeth.

CONCLUSION

Within the limitations of this study it was concluded that the awareness level of patients regarding consequences of missing teeth and prosthodontic treatment options was very low and the highest percentage regarding unawareness were recorded for those who were uneducated depicting a strong relationship between education and awareness.

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