

Awareness and attitudes of partially dentate patients about replacement of missing teeth

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Submitted

November 12, 2019

Accepted

December 15, 2019

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Citation: Rehman H, Zaki S, Riaz H, Qadeer A, Liaqat S. Awareness and attitudes of partially dentate patients about replacement of missing teeth. J Rehman Med Inst. 2019 Oct-Dec;5(4):7-12.

ABSTRACT

Introduction: Loss of a body part creates feelings of embarrassment and insufficiency in dealing with daily life activities, and loss of teeth is no exception. Other than cosmetic reasons, patients develop many attitude changes as well as altered dietary habits. Replacement of missing teeth creates further dilemmas for patients which need to be explored further.

Objective: To determine the awareness and attitudes on replacement of missing teeth among partially dentate patients presenting to Khyber College of Dentistry, Peshawar.

Materials & Methods: This descriptive cross sectional study was conducted at the department of Prosthodontics, Khyber College of Dentistry, Peshawar, from January to September 2019, on 100 patients selected by non-probability consecutive sampling technique. Subjects were partially dentate, age above 18 years, both genders and Pakistani nationals. Mentally handicapped subjects, individuals having relation with dental profession, and completely edentulous were excluded. Demographic data like age, gender, socio-economic level, educational level, and Kennedy classification were collected. Questions regarding knowledge and attitude to replacing missing teeth were asked. Descriptive statistics were computed by SPSS 20. Chi-square test was used for analysis of results by age, gender, educational level, and socio-economic status; $p \leq 0.05$ was considered significant.

Results: The mean age was 42.18 ± 8 years. Overall, 10% were not aware of their missing teeth and 32% did not feel the need for replacement of missing teeth. Most common reason for non-replacement of missing teeth was financial (49%). The most common treatment option for replacement of missing teeth among our sample was removable denture (33%). Overall, 27% participants reported that regular visits were not necessary. The effect of age, socio-economic level, educational level and pattern of missing on awareness of replacement of missing was statistically significant ($p < 0.05$).

Conclusion: Awareness about replacement of missing teeth in partially dentate patients is comparatively low in our sample. There is a need to improve the awareness through digital and print media.

Keywords: Awareness; Attitude; Tooth Loss; Dental Restoration; Dental Prosthesis; Dental Implants.

The authors declared no conflict of interest. All authors contributed substantially to the planning of research, data collection, data analysis, and write-up of the article, and agreed to be accountable for all aspects of the work.

INTRODUCTION

Smile directly affects individual's personality. Sound dentition have vital role in maintaining personality and self-image.¹ Loss of teeth have a psychological and upsetting impact on a person and compromise the quality of life.^{2,3}

Prosthetic replacement of teeth depends on a myriad of factors. The conventional approach is very straight forward that that the missing teeth should always be replaced with artificial teeth.⁴ However, with the recent advancements and knowledge in dental sciences and oral health there is decline in edentulism all over the world; many people retain their teeth in life until late age.⁵ However, when replacing missing teeth the patients' values and preferences, for instance aesthetics and functional need, should be given due considerations.^{6,7} Though many treatment options are available for replacing missing dentition, some researchers have documented that the acceptance of these options depend on the patients' educational level, socioeconomic level, cultural factors and age.⁸

Traditionally, the clinician's knowledge and attitude form the treatment planning of a prosthodontic patient without including the patient's inputs. In modern dental practice, patient's values, demands and preference should be addressed when treating.⁹ Previous research shows that a direct relationship exists between the number of remaining teeth and total satisfaction of patients.^{10,11}

Jayasinghe et al,⁴ assessing the awareness and attitudes for replacement of missing teeth, reported that 76.2% knew that missing teeth should be replaced with prostheses. Major need for replacement was for achieving masticatory comfort; among them 77.9% knew of removable prostheses as replacement option and 32.9% of implants. Few (25.2%) were aware of fixed bridge as an option, though awareness of implants was high. A study from Lahore, Pakistan on perception of replacement missing teeth reported that majority of participants felt the need of replacing missing teeth.¹ Another study from Karachi, Pakistan on awareness of various replacement options for missing teeth reported that 45% were aware of fixed prostheses, 26% of removable partial denture, 17% of cast partial denture, and only 4% of dental implants.¹²

There is lack of research in local population to explore the knowledge and attitude of partially dentate patients for replacement of missing teeth. The patient’s attitude and knowledge are affected by cultural, educational, and ethnic factors.

The objective of this study was to determine the awareness and attitudes on replacement of missing teeth among partially dentate patients presenting to Khyber College of Dentistry, Peshawar.

MATERIALS & METHODS

This descriptive cross sectional study was carried out at department of Prosthodontics, Khyber College of Dentistry Peshawar from January 2019 to September 2019 by using non-probability convenience sampling technique on 100 consecutive partially dentate adult Pakistani patients of both genders after obtaining verbal informed consent. Mentally handicapped subjects, individuals having relation with dental profession (dentists, dental technicians, dental students etc.) and complete edentulous were excluded.

Patients were interviewed and previously tested questionnaire was used with little modification.⁴ Socio-Demographic data were collected. Socio-economic status was recorded as poor (monthly income less than PKR 20,000), satisfactory (monthly income PKR 30,000 - 50,000) and good (monthly income PKR >60,000). Kennedy classification of partial edentulism was also recorded during clinical examination using mouth mirrors and under dental chair illumination by a prosthodontic specialist

having four year postgraduate experience. Relevant questions regarding knowledge and attitude to replacing missing teeth were asked in the participant’s language (Urdu or Pashto) along with explanation of terminologies.

Data were analyzed in SPSS version 20.0 for descriptive statistics; Chi-square test was used for analysis of results by age, gender, educational and socio-economic status; p≤0.05 was considered significant.

RESULTS

The mean age was 42.18 ± 8 years. The most common age group in partially dentate patients was 31-40 years (n=45) followed by 41-50 years (n=33). The males were more (n=65) than females (n=35). The most frequent socio-economic status class was poor (n=48) followed by satisfactory (n=32) and least was good (n=20). Of total 100 partially dentate patients, 15 were illiterate, 24 had primary, 25 had matric, 20 had bachelor, and 16 had master level of education.

Overall 10% were not aware of their missing teeth and 32% did not feel the need for replacement of missing teeth. Most common reason for non-replacement of missing teeth was financial (n=49). The most common treatment option for replacement of missing teeth among our sample was removable denture (n=33). Overall 27% participants reported that regular visits were not necessary.

Table 1 provides data about awareness and attitude of patients stratified by age groups and gender.

Table 1: Patients awareness and attitude about replacing missing teeth stratified by age groups and gender (n=296).

Questions asked		Age Group (years)				p value	Gender		p value
		20-30 f (%)	31-40 f (%)	41-50 f (%)	51-60 f (%)		Male f (%)	Female f (%)	
Do you have missing tooth/teeth?	Yes	4(4.4)	45(50)	27(30)	14(15.6)	0.012	61(67.8)	29(32.2)	0.081
	No	0(0)	0(0)	06(60)	04(40)		04(40)	6(60)	
Do you think the lost tooth/teeth need replacement with artificial teeth?	Yes	0(0)	36(52.9)	24(35.3)	08(11.8)	0.002	44(64.7)	24(35.3)	0.432
	No	0	04(25)	04(25)	08(50)		12(75)	04(25)	
What is the reason for non-replacement of missing tooth/teeth?	Financial	04	22(44.9)	17(34.7)	06(12.2)	0.136	39(60)	10(28.57)	<0.01
	Do not feel it needed	0(0)	10(45.5)	04(18.2)	08(26.4)		13(20)	9(25.7)	
	No time	0(0)	08(50)	04(25)	04(25)		12(18.4)	04(25)	
	Many reasons	0(0)	01(50)	01(50)	0(0)		01(1.6)	01(11.5)	
	Not know treatment options	0(0)	04(36.4)	07(63.6)	0(0)		0(0)	11(31.5)	
Are you aware of the types of prostheses?	No	0(0)	0(0)	5(100)	0(0)	0.071	04(80)	01(20)	0.769
	Removable dentures	03	11(33.3)	10(30.3)	09(27.3)		23(69.7)	10(30.3)	
	Tooth supported fixed bridge	01(10)	06(60)	02(20)	01(10)		06(60)	04(40)	
	Implants supported prostheses	0(0)	8(55.7)	4(33.3)	0(0)		08(66.7)	04(33.3)	
	Removable & fixed both	0(0)	12(12)	8(33.3)	4(16.7)		16(66.7)	8(33.3)	
	All three types	0(0)	08(50)	04(25)	04(25)		08(50)	08(50)	
Do you think regular dental visits are necessary?	Yes	02(2.7)	38(52.1)	19(26)	14(19.2)	0.041	49(67.1)	24(32.9)	0.465
	No	02(7.4)	7(25.9)	14(51.9)	4(14.8)		16(59.3)	11(40.7)	

Most of the partially dentate patients were aware about the presence of missing teeth. Only 6(60%) in age group 41-50 years and 4(40%) in age group 51-60 years were not aware. These results stratified by age groups were statistically significant ($p=0.012$). But awareness about the presence of missing teeth between genders was not statistically significant ($p=0.081$). The middle age group partially dentate patients i.e. age group 31-40 years ($n=36$, 52.9%) and 41-50 years ($n=24$, 35.3%) were more aware that missing teeth should be replaced with artificial teeth. The results were statistically significant ($p=0.002$). The awareness for replacement of missing teeth between genders was not significant ($p=0.432$). Patients' awareness about reason for non-replacement of missing teeth was not different among various age groups statistically ($p=0.136$). The most common reason for non-replacement was financial among males ($n=39$, 60%) and 'no time' in females ($n=11$, 31.5%). Patients' awareness about reason for non-replacement of missing teeth was different between genders statistically significantly ($p<0.01$). The effect of age on

awareness about various treatment options/prostheses for replacing missing teeth was not statically significant ($p=0.071$) and similar results were found for genders ($p=0.769$). Middle age partially dentate patients were more aware about regular dental visits than younger and old ages ($p=0.041$). The difference between gender about regular dental visits was not statistically significant ($p=0.465$).

The effect of socio-economic status of partially dentate patients on awareness about their missing teeth ($p=0.002$) need for replacement of missing with prostheses ($p=0.002$), the reason for non-replacement of missing teeth ($p<0.001$), and awareness about the types of prostheses ($p<0.001$), awareness about regular dental visits ($p<0.001$), were statistically significant. The most common reason for non-replacement of missing teeth was financial among poor ($n=34$, 70.8%) and lack of time among families with good socio-economic status ($n=7$, 35%), (Table 2).

Table 2: Patients awareness and attitude about replacing missing teeth stratified by socioeconomic level

Questions asked		Socio-economic status						p value
		Poor		Satisfactory		Good		
		f	%	f	%	f	%	
Do you have missing tooth/teeth?	Yes	38	79.2	32	100	20	100	0.002
	No	10	20.8	0	0	0	0	
Do you think the lost tooth/teeth need replacement with artificial teeth?	Yes	20	41.7	28	87.5	20	100	0.002
	No	12	25	04	12.5	0	0	
What is the reason for non-replacement of missing tooth/teeth?	Financial	34	70.8	08	25	04	20	<0.001
	Do not feel it needed	10	0	08	25	04	20	
	No time	04	20.8	08	25	07	35	
	Many reasons	0	8.33	0	0	02	10	
	Not know treatment options	0	0	08	25	03	15	
Are you aware of the types of prostheses?	No	05	0	0	0	0	0	<0.001
	Removable dentures	25	10.4	08	25	0	0	
	Tooth supported fixed bridge	06	52.1	04	12.5	0	0	
	Implants supported prostheses	0	12.5	08	25	04	20	
	Removable & fixed both	12	0	08	25	04	20	
	All three types	0	25	04	12.5	12	60	
Do you think regular dental visits are necessary?	Yes	25	0	28	87.5	20	100	<0.001
	No	23	52.1	04	12.5	0	0	

Similarly the effect of educational level of partially dentate patients on awareness about their missing teeth ($p<0.001$), need for replacement of missing with prostheses ($p<0.001$), the reason for non-replacement of missing teeth ($p<0.001$), and awareness about the types of prostheses ($p<0.001$), awareness about regular dental visits ($p<0.001$), were very highly statistically significant. Among illiterate partially dentate 40% and 16.67% among primary level of education were not aware

that they have missing teeth. For matric and above level of education 100% were aware that they have missing teeth. Similar results were found for need for replacement of missing teeth. Most of the illiterate and primary level of education participants knew only removable denture as treatment option while more qualified knew about implants and fixed prostheses as treatment options for missing teeth (Table 3).

Table 3: Patients awareness and attitude about replacing missing teeth stratified by educational level

Questions		Educational level										p value
		Non-formally educated		Primary		Matric		Bachelor		Master		
		f	%	f	%	f	%	f	%	f	%	
Do you have missing tooth/teeth?	Yes	9	60	20	83.33	25	100	20	100	16	100	<0.001
	No	6	40	4	16.67	0	0	0	0	0	0	
Do you think the lost tooth/teeth need replacement with artificial teeth?	Yes	9	60	20	83.33	20	80	20	100	16	100	<0.001
	No	6	40	4	16.67	5	20	0	0	0	0	
What is the reason for non-replacement of missing tooth/teeth?	Financial	7	46.7	15	62.5	16	64	4	20	7	43.75	<0.001
	Do not feel it needed	4	26.7	9	37.5	1	4	8	40	0	0	
	No time	0	0	0	0	8	32	4	20	4	25	
	Many reasons	0	0	0	0	0	0	0	0	2	12.5	
	Not know treatment options	4	26.7	0	0	0	0	4	20	3	18.75	
Are you aware of the types of prostheses?	No	1	6.67	0	0	4	16	0	0	0	0	<0.001
	Removable dentures	12	80	17	70.83	4	16	0	0	0	0	
	Tooth supported fixed bridge	2	13.3	7	29.17	1	4	0	0	0	0	
	Implants supported prostheses	0	0	0	0	0	0	8	40	4	25	
	Removable & fixed both	0	0	0	0	16	64	8	40	0	0	
	All three types	0	0	0	0	0	0	4	20	12	75	
Do you think regular dental visits are necessary?	Yes	3	20	13	54.17	21	84	20	100	16	100	<0.001
	No	12	80	11	45.83	4	16	0	0	0	0	

Patients were more aware about missing anterior teeth i.e. Kennedy class IV (n=4, 100%) in both arches; similar was the case for missing anterior teeth i.e. Kennedy class IV more than Kennedy classes III and I. In maxilla the results were not significant by Kennedy class for awareness about missing teeth

(p=0.198) and regular dental visits (p=0.067). Rest of the results were statistically significantly (p<0.05) in maxilla. In mandible all results were significant (p<0.05) by Kennedy class (Tables 4 & 5).

Table 4: Patients awareness and attitude about replacing missing teeth stratified by Kennedy Class in maxilla

Questions		Kennedy Class in maxilla										p value
		No		I		II		III		IV		
		f	%	f	%	f	%	f	%	f	%	
Do you have missing tooth/teeth?	Yes	06	18.75	13	76.47	07	100	38	95	4	100	0.198
	No	28	87.5	04	23.53	0	0	02	05	0	0	
Do you think the lost tooth/teeth need replacement with artificial teeth?	Yes	24	75	12	70.59	07	100	36	90	04	100	0.011
	No	04	12.5	05	29.41	0	0	04	10	0	0	
What is the reason for non-replacement of missing tooth/teeth?	Financial	07	21.88	09	52.94	07	100	23	57.5	03	75	0.001
	Do not feel it needed	13	40.63	04	23.53	0	0	05	12.5	0	0	
	No time	04	12.5	04	23.53	0	0	08	20	0	0	
	Many reasons	01	3.13	0	0	0	0	0	0	01	25	
	Not know treatment options	07	21.88	0	0	0	0	04	10	0	0	
Are you aware of the types of prostheses?	No	0	0	0	0	0	0	05	12.5	0	0	<0.001
	Removable dentures	10	31.25	13	76.47	03	42.86	07	17.5	0	0	
	Tooth supported fixed bridge	02	6.25	0	0	0	0	08	20	0	0	
	Implants supported prostheses	04	12.5	0	0	0	0	08	20	0	0	
	Removable & fixed both	12	37.5	04	23.53	04	57.14	04	10	0	0	
	All three types	04	12.5	0	0	0	0	8	20	04	100	
Do you think regular dental visits are necessary?	Yes	21	65.63	9	52.94	5	71.43	34	85	4	100	0.067
	No	11	34.38	8	47.06	2	7.4	6	15	0	0	

Table 5: Patients awareness and attitude about replacing missing teeth stratified by Kennedy Class in mandible

Questions		Kennedy Class in mandible										p value
		No		I		II		III		IV		
		f	%	f	%	f	%	f	%	f	%	
Do you have missing tooth/teeth?	Yes	25	92.59	9	52.94	13	100	38	97.4	4	100	<0.001
	No	2	7.41	8	47.06	0	0	1	2.56	0	0	
Do you think the lost tooth/teeth need replacement with artificial teeth?	Yes	22	81.48	8	47.06	8	61.54	32	82.1	4	100	<0.001
	No	4	14.82	8	47.06	5	38.46	7	17.9	0	0	
What is the reason for non-replacement of missing tooth/teeth?	Financial	17	62.96	9	52.94	5	38.46	17	43.6	0	0	<0.001
	Do not feel it needed	5	18.52	8	47.06	0	0	9	23.1	0	0	
	No time	4	14.82	0	0	4	30.77	8	20.5	0	0	
	Many reasons	0	0	0	0	0	0	2	5.13	0	0	
	Do not know treatment options	0	0	0	0	4	30.77	3	7.69	4	100	
Are you aware of the types of prostheses?	No	5	18.52	0	0	0	0	0	0	0	0	<0.001
	Removable dentures	8	29.63	13	76.47	5	38.46	3	7.69	4	100	
	Tooth supported fixed bridge	5	18.52	0	0	0	0	4	10.3	0	0	
	Implants supported prostheses	4	14.82	4	23.53	0	0	4	10.3	0	0	
	Removable & fixed both	4	14.82	0	0	4	30.77	16	41	0	0	
	All three types	0	0	0	0	4	30.77	12	30.8	0	0	
Do you think regular dental visits are necessary?	Yes	20	74.07	4	23.53	13	100	36	92.3	0	0	<0.001
	No	6	22.22	13	50	0	0	3	7.69	4	100	

DISCUSSION

The current study was conducted to know the awareness and attitude about replacement of missing teeth and various factors affecting knowledge like age, gender, socioeconomic status, educational level, and pattern of missing teeth (Kennedy Classification). There was lack of awareness about replacement of missing teeth in our sample and effect of age, socio-economic level, educational level and pattern of missing was statistically significant.

Our results showed that overall most common reason for non-replacement of missing teeth was financial (n=49, 49%). A study conducted in Lahore, Pakistan reported that 30% cases told the reason for non-replacement of missing teeth to be financial. These results are in favor of our study.¹ Our findings showed that 32% participants did not feel the need for replacement of missing teeth. Amjad et al¹ found that 30% participants did not feel the need for replacement of missing teeth. Another study conducted in Sri Lanka reported 67% participants did not feel the need for replacement of missing teeth.⁴ The difference in results may due to difference in educational and socio-economic level of the participants.

The most common treatment option for replacement of missing teeth among our sample was removable denture (n=33, 33%). This shows the lack of awareness among our population about

advanced prostheses like fixed partial denture and implants. Another study conducted in Karachi showed that most of the participants were aware only about removable as treatment option for missing teeth.¹² These results are in consistent with our findings.

Our results showed that there was lack of awareness about replacement of missing teeth in our sample and effects of age, socio-economic level, educational level and pattern of missing were statistically significant. The middle age group partially dentate patients were more aware that missing teeth should be replaced with artificial teeth.

The most common reason for non-replacement of missing teeth was financial among poor and lack of time among families with good socio-economic status. Illiterate and primary qualified cases had less awareness that they have missing teeth. More awareness was found for missing anterior teeth in partially dentate patients. Similar results were found by Jayasinghe et al.⁴ Abdurahiman et al¹³ found that younger age patients have more awareness as compared to old age patients. Schützhold et al¹⁴ and Saha et al¹⁵ reported level of education and socio-economic class can be important factors in the selection of types of prostheses.

CONCLUSION

Awareness about replacement of missing teeth in partially dentate patients is comparatively low. Awareness about

replacement of missing teeth was different by patient's age, educational level, socio-economic status, and pattern of missing significantly. There is a need to improve the awareness through digital and print media.

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