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## Perception and Awareness of Prosthodontic Rehabilitation among Jazan Population in the Southern Region of Saudi Arabia

By Dr. R. Naveen Reddy, Dr. Elfatih Ibrahim Elamin, Dr. Swetha Vempalli  
& Dr. Fuad Al Sanabani

*Jazan University, Saudi Arabia*

**Abstract-** The Prosthodontic health status and Prosthodontic rehabilitation needs of Jazan local population in the southern region of Saudi Arabia were not well documented. This study evaluates the level of perception and awareness of a group of Jazan population towards Prosthodontic rehabilitation and the factors that prevent them from the treatment. Knowledge and perceived needs of subjects regarding Prosthodontics play an important role in their acceptance to prosthetic rehabilitation. A self-designed questionnaire containing eleven questions was designed and reasons for choosing or refusing treatments were measured using Likert scale. A survey of 467 randomly selected subjects was conducted among the patients and relatives reported to the College of Dentistry, Jazan University, Jazan. Collected data were statistically analysed using SPSS V.19 for descriptive statistics along with Chi-squared test at a significance level of  $p < 0.05$ .

**Keywords:** *knowledge; perception; prosthodontic treatment; awareness; survey; patient acceptance of health care; prosthetic replacements.*

**GJMR-J Classification:** *NLMC Code: WU 500*



PERCEPTIONAND AWARENESS OF PROSTHODONTIC REHABILITATION AMONG JAZAN POPULATION IN THE SOUTHERN REGION OF SAUDI ARABIA

*Strictly as per the compliance and regulations of:*



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# Perception and Awareness of Prosthodontic Rehabilitation among Jazan Population in the Southern Region of Saudi Arabia

Dr. R. Naveen Reddy <sup>α</sup>, Dr. Elfatih Ibrahim Elamin <sup>σ</sup>, Dr. Swetha Vempalli <sup>ρ</sup> & Dr. Fuad Al Sanabani <sup>ω</sup>

**Abstract-** The Prosthodontic health status and Prosthodontic rehabilitation needs of Jazan local population in the southern region of Saudi Arabia were not well documented. This study evaluates the level of perception and awareness of a group of Jazan population towards Prosthodontic rehabilitation and the factors that prevent them from the treatment. Knowledge and perceived needs of subjects regarding Prosthodontics play an important role in their acceptance to prosthetic rehabilitation. A self-designed questionnaire containing eleven questions was designed and reasons for choosing or refusing treatments were measured using Likert scale. A survey of 467 randomly selected subjects was conducted among the patients and relatives reported to the College of Dentistry, Jazan University, Jazan. Collected data were statistically analysed using SPSS V.19 for descriptive statistics along with Chi-squared test at a significance level of  $p < 0.05$ .

**Results:** Age was ranging from 20 to 91 years with a mean age of 56.48 +11.92 years with 53.10% males and 46.90% females. Out of the 467 participants, 95.93% had heard about Prosthodontic rehabilitation as a dental treatment modality, with marginal significant difference between males and females ( $P=0.0551$ ). Out of these, 95.93% people with missing teeth only 57.82% people were willing to undergo treatment if needed.

Individual perception of potential reasons for treatment selection was the most important determinants of patients' decisions based on knowledge, awareness and motivation. By conducting this study the individual perception and potential reasons behind treatment selection and its relation to patient's knowledge, awareness and motivation can be assessed. The findings can be used in improving patient's motivation and leading them to a favourable decision making.

**Keywords:** knowledge; perception; prosthodontic treatment; awareness; survey; patient acceptance of health care; prosthetic replacements.

## I. INTRODUCTION

In its broadest sense, Prosthodontics is concerned with the replacement of partial or complete loss of teeth and oral function due to tooth or tissue damage (Carlsson GE and Omar R, 2006). Prosthetic treatment involves the replacement of few missing teeth in a healthy but incomplete dentition, the functional replacement of nearly all teeth in a badly damaged dentition, or restoring function by means of removable

or FPDs, implants, complete dentures, or over dentures (Mukatash et al., 2010 and Zarb GA et al., 1978). With the rapid improvement in oral health and the reduction of edentulism in many countries, increasing numbers of people are retaining more teeth later in life (Carlsson GE and Omar R, 2006). Knowledge of subjects regarding prosthodontic treatment may play a role in their acceptance of the prostheses (Shigli et al., 2007). The aim of this paper was to evaluate the level of knowledge, perception, awareness, attitude, and behaviour of a group of Jazan population in the southern region of Saudi Arabia aged 21-91 years towards the options available for replacing missing teeth and the factors preventing them from taking treatment.

## II. MATERIALS AND METHODS

The present study was a questionnaire survey conducted at College of Dentistry, Jazan University, Jazan. The study samples of 467 subjects were randomly selected from patients in the Department of Prosthodontics. The sample population consists of 248 males and 219 females within an age range of 21 to 91 years. A self-designed questionnaire containing eleven questions was designed on perception and awareness for different Prosthodontic treatment modalities and reasons for choosing or refusing treatments were measured (Table1). Ethical committee clearance was obtained. Initially a pilot study was carried out with twenty patients recruited in the same manner as in the main study to check the feasibility of the study and the questions were modified accordingly. Following the successful pilot study in which the questionnaire was validated, potential subjects were approached to carry out the main study. The questionnaire was made available both in English and Arabic languages. The dentists, dental technicians, and assistants were excluded from the study. Socio-demographic details including age, gender etc. was noted. A total of 500 questionnaire forms were distributed and 467 were returned back (response rate was 93.4%). Collected responses were tabulated.

**Statistical Analysis:** Data was statistically analysed using the SPSS V.20 program. Frequencies were generated and mean calculated with standard deviation using descriptive statistical analysis. Chi-squared test was used to identify significance. The

Author <sup>α</sup> <sup>σ</sup> <sup>ρ</sup> <sup>ω</sup>: Jazan University.

e-mails: [drnaveenramireddy@gmail.com](mailto:drnaveenramireddy@gmail.com), [fielamin30@yahoo.com](mailto:fielamin30@yahoo.com), [drswetharamireddy@gmail.com](mailto:drswetharamireddy@gmail.com), [fuad\\_ali2000@yahoo.com](mailto:fuad_ali2000@yahoo.com)

probability was assessed using P value by considering  $p < 0.05$  as significant.

Age:

Sex:

1. Are you aware that missing teeth have to be replaced? YES / NO
2. The various types of replacement that they are aware of
  - a. Complete Denture
  - b. Removable Partial Denture
  - c. Fixed Partial Denture
  - d. Implants
3. Do you have any missing teeth? YES / NO
4. If Yes FRONT / BACK
5. How long have the teeth been missing? -----
6. Did you get them replaced? YES / NO
7. Type of replacement:
  - a. Complete Denture
  - b. Removable Partial Denture
  - c. Fixed Partial Denture
  - d. Implant supported
8. If not replaced then why?
  - a. Financial Constraints
  - b. Inadequate Knowledge
  - c. Not motivated
9. Where would you like to go for replacement of missing teeth?
  - a. Dental Clinic
  - b. General Hospital
  - c. Dental College
  - d. Others
10. Are you aware that there is a dental college where replacement of missing teeth will be done in Jazan? YES / NO
11. How did you know about the college?
  - a. Friends
  - b. Relatives
  - c. Referred by a dentist
  - d. Media

### III. RESULTS

The study sample consisted of 53.10% males (N=248) and 46.90% females (N=219) with a mean age of 56.48+11.92 years. Each question was analysed for the frequency and the relation between the gender difference was tabulated (Table 2).

*Question 1:* Awareness about missing teeth replacement: The results show that 95.93 % (N=448) of the study population including both males and females has the awareness that they have to replace the missing tooth. There was marginal statistically significant difference between the genders (P=0.05).

*Question 2:* Knowledge about various treatment options: Out of the 467 individuals 87.79% (N=410), 42.83% (N=200), 36.40% (N=170) and 10.71% (N=50) had the knowledge of complete denture, Removable Partial Denture, Fixed Partial denture and Implants respectively.

There were no significant differences noted statistically  $P > 0.05$ .

*Question 3:* Have any missing teeth: 100% (N=467) individuals that participated in this study had missing teeth. The males showed a higher frequency of missing teeth than females. This result was statistically proven with chi square test,  $P = 0.7111$  (Table 2).

*Question 4:* Position of tooth loss: There was marginal statistically significant difference between the genders ( $P = 0.05$ ). Loss of posterior teeth (N=144) 32.73% is more when compared to the anterior teeth (N=95) 21.59% and combination of anterior and posterior teeth is the highest (N=201) 45.68%

*Question 5:* The duration of missing teeth among the participant of the survey was 34.98 + 62.38 months for males and 28.11 + 35.04 months for females. There was no statistical difference between the genders  $P = 0.1629$ .

*Question 6:* Attitude towards prosthetic rehabilitation: Considering the attitude towards the replacement of the missing teeth with prosthesis 57.82% (N=270) individuals were positive and were planning to replace the missing teeth. But there were no significant differences between the genders even though comparatively more men were willing for replacement.

*Question 7:* Type of Replacement perceived: Comparison of the individual's knowledge toward different prosthetic replacement options and their perceived option for replacing the missing tooth were as follows. Most of the people were willing to replace the missing teeth with complete denture i.e., 62.44 % (N=123/272), compared to 50.25% (N= 99/272) for removable partial denture and 25.38% (N= 50/272) for fixed partial denture. There were no patients who preferred to replace their missing teeth with implants.

*Question 8:* Reasons for not replacing the missing teeth: The main reason for not undergoing the prosthodontic replacement was inadequate knowledge (57.36%, N= 113), followed by lack of motivation, regarding the prosthetic replacements (24.37%, N=48) and the least were due to financial constraints (18.27%, N=36) and these observations were not statistically significant.

*Question 9:* The setup where individual would like to get the prosthetic replacement done: Out of the 467 participants 60.60% (N=283) preferred to get the prosthesis done from dental college and 26.12% (N=112) from Dental clinic and 11.35% (N=53) opted for general hospitals. These observations show statistical significance  $p = 0.0001^*$

*Question 10:* Awareness about the availability of Prosthetic replacement treatment in College of Dentistry Jazan University: The results shows that 91.43% (N=427) participants were aware about the treatment facility in the college.

*Question 11:* how did you know about the dental college: Out of the 467 participants 61.46% (N=287) came to know about the college from relatives and friends 24.20% (N=113). Few patients were referred by Dentists 10.92% (N=51) whereas media 3.43% (N=16) formed the least in patients knowing about the college. These observations were not statistically significant.  $P = 0.3352$ .

#### IV. DISCUSSION

Oral health means much more than just healthy teeth. Good oral health is a major resource for social, economic and personal development of individuals (Khan SA et al., 2012). Teeth are required for mastication, phonetics, aesthetics, structural balance and for the comfort of an individual. With the loss of teeth, the above functions are impaired resulting in physical, physiological and psychological trauma to the individual (S S, Sharma S, 2010). Preventive dental care

is almost non-existent in rural India (Parlani S et al., 2011). Initiatives should be aimed not only on the prevention but also on the curative aspects of oral health. Mobile dental clinics, dental camps, and prosthodontic outreach programs are possible solutions to change attitudes, spread awareness, and extend treatment. Lack of awareness of different prosthodontic treatment options among people living in and around Jazan prevents them from availing of treatment even though there are many Government setups that offer treatment free of cost (Menezes M and Aras M, 2009). From the present study, it can be observed that the subjects were aware of the needs of dentures in contrast to previous studies (S S, Sharma S, 2010). This may be due to the increase in technology and media. When asked about the attitude towards the replacement, even though the participants had the knowledge about the need for replacement, majority did not opt for treatment mainly due to inadequate knowledge. Most of the patients opted to get treated from the dental college than private clinics; this may be to reduce the financial burden following a prosthetic replacement. The study suggests that in general the dentist must spend more time on the chair side during examination and motivate the patient regarding the need of a denture so as to get a proper response in relation to need of a denture which was similar to previous observations in literature (S S, Sharma S, 2010). Even though there is a scarcity of data regarding patient's needs and preferences in field of fixed prosthodontics, this study shows an increase in demand for fixed partial denture by the individual with knowledge of the same. From the present study, it can be observed that most of the subjects were not aware of dental implants. This implies that persons whether male or female need motivation and education to help them realize the needs of implants.

#### V. CONCLUSION

In conclusion complete dentures are associated with lower expected outcomes, while inadequate knowledge and lack of motivation are the major factors associated with the preferences for implant treatment for the study population.

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*Table :* Distribution of samples by age groups and sex

Characteristics	No of samples	% of samples
<b>Age groups</b>		
>25	1	0.21
25-34	6	1.28
35-44	74	15.85
>45	386	82.66
Mean age	56.48	
SD age	11.92	
<b>Sex</b>		
Male	248.00	53.10
Female	219.00	46.90
Total	467	100.00

*Table :* Item wise responses of respondents

Items	No of samples	% of samples
<b>Q1 Are you aware that missing teeth have to be replaced</b>		
Yes	448	95.93
No	19	4.07
Total	467	100.00
<b>Q2 The various types of replacement that they are aware of</b>		
Complete Denture	410	87.79
Removable Partial Denture	200	42.83
Fixed Partial Denture	170	36.40
Implants	50	10.71
<b>Q3 Do you have any missing teeth</b>		
Yes	440	94.22
No	27	5.78
Total	467	100.00
<b>Q-4 If Yes</b>		
Front	95	21.59
Back	144	32.73
Both	201	45.68
<b>Q5 How long have the teeth been missing</b>		
Means	31.76	
Std.Dev.	51.48	
<b>Q6 Did you get them replaced</b>		
Yes	270	57.82
No	197	42.18
Total	467	100.00
<b>Q-7 Type of replacement</b>		
Complete Denture	123	62.44
Removable Partial Denture	99	50.25

Fixed Partial Denture	50	25.38
Implant supported	0	0.00
<b>Q-8 If not replaced then why</b>		
Financial Constraints	36	18.27
Inadequate Knowledge	113	57.36
Not motivated	48	24.37
<b>Q-9 Where would you like to go for replacement of missing teeth</b>		
Dental Clinic	122	26.12
Dental College	283	60.60
General Hospital	53	11.35
Others	9	1.93
Total	467	100.00
<b>Q10 dental college where replacement in Jazan</b>		
Yes	427	91.43
No	40	8.57
Total	467	100.00
<b>Q-11 How did you know about the college</b>		
Friends	113	24.20
Relatives	287	61.46
Dentist	51	10.92
Media	16	3.43
Total	467	100.00

Table : Distribution of samples by age groups and sex

Age groups	Male	%	Female	%	Total	%
>25	1	0.40	0	0.00	1	0.21
25-34	2	0.81	4	1.83	6	1.28
35-44	34	13.71	40	18.26	74	15.85
>45	211	85.08	175	79.91	386	82.66
Total	248	100.00	219	100.00	467	100.00
Mean age	57.40		55.43		56.48	
SD age	11.28		12.54		11.92	

Table : Comparison of male and females with Q 1

Q 1	Male	%	Female	%	Total	%
Yes	242	97.58	206	94.06	448	95.93
No	6	2.42	13	5.94	19	4.07
Total	248	100.00	219	100.00	467	100.00
Chi-square=3.6852 P = 0.0551						

Table : Comparison of male and females with Q2 i.e. types of replacement that they are aware

Q 2	Male	%	Female	%	Total	%
Complete Denture	222	89.52	188	85.84	410	87.79
Removable Partial Denture	105	42.34	95	43.38	200	42.83
Fixed Partial Denture	93	37.50	77	35.16	170	36.40
Implants	29	11.69	21	9.59	50	10.71
Chi-square=0.5383 P = 0.9102						

Table : Comparison of male and females with Q3 i.e. missing teeth

Q3 i.e. missing teeth	Male	%	Female	%	Total	%
Yes	234	94.35	206	94.06	440	94.22
No	14	5.65	13	5.94	27	5.78
Total	248	100.00	219	100.00	467	100.00
Chi-square=0.1327 P = 0.7111						

*Table :* Comparison of male and females with Q4 if yes for missing teeth

Q-4 sides	Male	%	Female	%	Total	%
Front	48	20.51	47	22.82	95	21.59
Back	67	28.63	77	37.38	144	32.73
Both	119	50.85	82	39.81	201	45.68
Chi-square=5.7557 P = 0.0565						

*Table :* Comparison of male and females with Q5 i.e. Duration of edentulism

Sex	Means	Std.Dev.
Male	34.98	62.38
Female	28.11	35.04
Total	31.76	51.48
t-value	1.3978	
P-value	0.1629	

*Table :* Comparison of male and females with Q6 i.e. did you get them replaced

Q6	Male	%	Female	%	Total	%
Yes	136	54.84	134	61.19	270	57.82
No	112	45.16	85	38.81	197	42.18
Total	248	100.00	219	100.00	467	100.00
Chi-square=1.9221 P = 0.1662						

*Table :* Comparison of male and females with Q7 if yes for Q6

Q-7	Male	%	Female	%	Total	%
Complete Denture	68	60.71	55	64.71	123	62.44
Removable Partial Denture	51	45.54	48	56.47	99	50.25
Fixed Partial Denture	18	16.07	32	37.65	50	25.38
Implant supported	0	0.00	0	0.00	0	0.00
Chi-square=5.3702 P = 0.0681						

*Table :* Comparison of male and females with Q8 if No for Q6

Q-8	Male	%	Female	%	Total	%
Financial Constraints	23	20.54	13	15.29	36	18.27
Inadequate Knowledge	61	54.46	52	61.18	113	57.36
Not motivated	28	25.00	20	23.53	48	24.37
Chi-square=1.1429 P = 0.5633						

*Table :* Comparison of male and females with Q9

Q-9	Male	%	Female	%	Total	%
Dental Clinic	64	25.81	58	26.48	122	26.12
Dental College	154	62.10	129	58.90	283	60.60
General Hospital	27	10.89	26	11.87	53	11.35
Others	3	1.21	6	2.74	9	1.93
Total	248	100.00	219	100.00	467	100.00
Chi-square=40.3122 P = 0.0001*						

\*p<0.05

*Table :* Comparison of male and females with Q10 i.e. dental college where of missing teeth will be done in Jazan

Q10	Male	%	Female	%	Total	%
Yes	229	92.34	198	90.41	427	91.43
No	19	7.66	21	9.59	40	8.57
Total	248	100.00	219	100.00	467	100.00
Chi-square=0.5527 P = 0.4581						

*Table :* Comparison of male and females with Q11 i.e. how did you know about the college

Q-11	Male	%	Female	%	Total	%
Friends	65	26.21	48	21.92	113	24.20
Relatives	143	57.66	144	65.75	287	61.46
Dentist	31	12.50	20	9.13	51	10.92
Media	9	3.63	7	3.20	16	3.43
Total	248	100.00	219	100.00	467	100.00
Chi-square=3.3961 P = 0.3352						

OR

*Table :* Comparison of male and females in each item

Items	Male	%	Female	%	Total	%
<b>Q 1</b>						
Yes	242	97.58	206	94.06	448	95.93
No	6	2.42	13	5.94	19	4.07
Total	248	100.00	219	100.00	467	100.00
Chi-square=3.6852 P = 0.0551						
<b>Q 2</b>						
Complete Denture	222	89.52	188	85.84	410	87.79
Removable Partial Denture	105	42.34	95	43.38	200	42.83
Fixed Partial Denture	93	37.50	77	35.16	170	36.40
Implants	29	11.69	21	9.59	50	10.71
Chi-square=0.5383 P = 0.9102						
<b>Q3 i.e. missing teeth</b>						
Yes	234	94.35	206	94.06	440	94.22
No	14	5.65	13	5.94	27	5.78
Total	248	100.00	219	100.00	467	100.00
Chi-square= 0.1327 P = 0.7111						
<b>Q-4 sides</b>						
Front	48	20.51	47	22.82	95	21.59
Back	67	28.63	77	37.38	144	32.73
Both	119	50.85	82	39.81	201	45.68
Chi-square= 5.7557 P = 0.0565						
<b>Q5</b>						
Means	35		28			31.76
Std.Dev.	62		35			51.48
t=1.3978, p=0.1629						
<b>Q6</b>						
Yes	136	54.84	134	61.19	270	57.82
No	112	45.16	85	38.81	197	42.18
Total	248	100.00	219	100.00	467	100.00
Chi-square= 1.9221 P = 0.1662						
<b>Q-7</b>						
Complete Denture	68	60.71	55	64.71	123	62.44
Removable Partial Denture	51	45.54	48	56.47	99	50.25
Fixed Partial Denture	18	16.07	32	37.65	50	25.38
Implant supported	0	0.00	0	0.00	0	0.00
Chi-square= 5.3702 P = 0.0681						
<b>Q-8</b>						
Financial Constraints	23	20.54	13	15.29	36	18.27
Inadequate Knowledge	61	54.46	52	61.18	113	57.36
Not motivated	28	25.00	20	23.53	48	24.37
Chi-square= 1.1429 P = 0.5633						
<b>Q-9</b>						
Dental Clinic	64	25.81	58	26.48	122	26.12
Dental College	154	62.10	129	58.90	283	60.60
General Hospital	27	10.89	26	11.87	53	11.35

Others	3	1.21	6	2.74	9	1.93
Total	248	100.00	219	100.00	467	100.00
Chi-square= 40.3122 P = 0.0001*						
<b>Q10</b>						
Yes	229	92.34	198	90.41	427	91.43
No	19	7.66	21	9.59	40	8.57
Total	248	100.00	219	100.00	467	100.00
Chi-square= 0.5527 P = 0.4581						
<b>Q-11</b>						
Friends	65	26.21	48	21.92	113	24.20
Relatives	143	57.66	144	65.75	287	61.46
Dentist	31	12.50	20	9.13	51	10.92
Media	9	3.63	7	3.20	16	3.43
Chi-square=3.3961 P = 0.3352						
Total	248	100.00	219	100.00	467	100.00

\* $p < 0.05$

