

Decision Making Among General Dentists in Pakistan: The Choice between Fixed and Removable Partial Denture

WASIF ALI KHAN¹, ABDUL RAZZAQ MALIK², ATIQ-UR-REHMAN³

ABSTRACT

Background: It is well known that there are great variations between general dentists regarding the provision of Prosthodontics services. However, little is known about the factors that influence the number of these services delivered. There are studies on frequencies of different Prosthodontics services but to our knowledge, none focusing on the dentist or patient related factors involved in the provision of Prosthodontics services.

Aim: To analyze how dentists evaluate the importance of various factors related to a treatment choice between fixed and removable partial dentures.

Methods: This descriptive case series study was carried out in the Department of Prosthodontics, de'Montmorency College of Dentistry, Lahore between 1st October 2007 to 31st March, 2008. This study included sixty general dentists in Private sector. The typical Prosthodontics clinical scenario by using Paper Patient Case technique was used. The questionnaire had treatment choices with a series of factors related to clinical decision making for each of the cases. Each factor of the series was subjected to the VAS response ratings by the general dentist with alternatives coded in 8 equidistant steps, ranging from "unimportant" (1) to "decisively important".

Results: There were 47 males and 13 females, average age 37.5±7.5 years with an average experience of 10.3±5.6 years. Abutment condition and patient's financial condition were having the highest average scores of 5.7±1.3 and 5.7±1.4 respectively. The lowest average score were obtained for time required for treatment & no of visits required of 4.6±1.5&4.7±1.3 respectively.

Conclusion: The clinical situation presented in this study, the choice between a fixed and a removable partial denture showed that "patient's financial condition" and "condition of possible abutment tooth" have high importance.

Key words: Prosthodontics, Decision making, Removable partial denture, Fixed partial denture

INTRODUCTION

Although Dental education is based on scientific evidence and clinical experience, the high range of variation in decision making indicates strong individual preferences among the general dentists.¹ Decision making in dentistry is a complex process including both dentist- and patient-related factors.² It has been reported that fear of accusation of malpractice, years in profession, and the perceived patient need play important roles.³ Making a treatment decision is a demanding task for a dental professional, resulting in considerable variation in treatment practices. This variation has been well verified.⁴⁻⁶ The basis of treatment decisions, including the psychology of decision-making, decision theory, and decision analysis have been discussed in an International Symposium⁷, but reasons leading to different treatment decisions are not yet well defined.

Interest in treatment recommendations and guidelines in dentistry seems to be increasing. Currently, the number of recommendations is considerable, but the discussion is actively ongoing.

Variations in treatment decisions and treatment patterns also exist between countries as well as within countries.⁸⁻¹⁰ In Pakistan, despite of the existence of dental care facilities in the public sector, majority of these services to the general public are provided by general dentists in the private sector.¹¹ Therefore, it is important to obtain the information about the influence of the factors on decision making for different prosthodontics clinical scenarios by general dentists working in the private sector.^{12,13}

Replacement of missing teeth has become one of the most important needs for patients attending clinics to restore aesthetics and/or function. There are various traditions in different countries concerning treatments with fixed or removable restorations, the choice between a fixed partial denture and a removable partial denture is influenced by many factors related to both the patient and the dentist.¹⁴⁻¹⁷ There are many studies on both fixed and removable partial dentures, but to our knowledge only a few have focused on the treatment choice between fixed

¹Assistant Professor, Department of Prosthodontics, de'Montmorency College of Dentistry Lahore, ²Associate Professor, Margalla Institute of Health Sciences, Rawalpindi, ³Assistant Professor and Head of Department of Prosthodontics, Sharif Medical and Dental College, Lahore Correspondence: Dr. Wasif Ali Khan, e-mail: dr_wasif@hotmail.com Cell: 0300-4748307

and removable partial dentures^{18,19}. It is well known that there are great variations between general dentists regarding the provision of Prosthodontics services²⁰. However, little is known about the factors that influence the number of these services delivered. There are studies on frequencies of different Prosthodontics services²¹⁻²⁴ but to our knowledge, none focusing on the dentist and patient related factors involved in the provision of Prosthodontics services. The objective of study was to investigate the knowledge and attitude scientifically so that the gaps may be identified which would assist the policymakers to make appropriate changes in oral health care division.

PATIENTS AND METHODS

This descriptive case series study was conducted on 60 private dental practitioners. The study was carried out in the Department of Prosthodontics, de'Montmorency College of Dentistry/Punjab Dental Hospital, Lahore from 1st October, 2007 to 31st March, 2008. General dentists having at least five years of experience of working in current location were included. General dentists with postgraduate qualification and age more than sixty years were excluded from the study. A questionnaire was prepared describing the typical prosthodontics clinical scenario by using Paper Patient Case (PPC) technique. This questionnaire has treatment choices with a series of factors related to clinical decision making for each of the cases. Each factor of the series was subjected to the visual analogue scale response ratings by the general dentist with alternatives coded in 8 equidistant steps, ranging from "unimportant" (1) to "decisively important" (8). The paper patient case was prepared as "The choice to provide a patient with a fixed partial denture (FDP) or a removable partial denture (RPD), both options being technically possible". The dentists were invited to participate in the study with prior written consent that the replies were kept confidential and anonymous. Their demographic data were recorded. Each general dentist was briefed by the investigator to use the form. The general dentist was asked to rate the best alternative according to his own applied knowledge and attitude. Each general dentist had to complete the proforma in the same visit. Statistical analysis was performed by using SPSS 11.

RESULTS

There were 60 dentists included for the study from Lahore city. There were 47 males and 13 females. The average age of dentists was 37.5 ± 7.5 years with an average experience of 10.3 ± 5.6 years. Minimum experience was of 5 years and the maximum

experience obtained by a dentist was 31 years. Twenty dentists were practicing in Gulberg and Defence towns and 40 were practicing in Shalimar and Allama Iqbal Towns. Relative frequencies of VAS responses to the set of PPC questions are given in Table 1. The table also list means and standard deviations indicating wide individual variations in responses to most questions. Patient's financial condition, Abutment tooth condition and patient's wishes were having the highest average scores of 5.7 ± 1.3 and 5.7 ± 1.4 respectively. The lowest average score were obtained for time required for treatment and number of visits required of 4.6 ± 1.5 and 4.7 ± 1.3 respectively. Then comparisons were made by using t-test for independent samples between groups made on the basis of experience, gender and location of dentists. It was observed that the differences were significant for those dentists who were having experience of 13 years or more. There were 15 dentists with experience of 13 years or above and they marked significantly higher average score for technical difficulty 0.76, abutment tooth condition 0.56 and a highly significant difference for patient's financial condition 1.60 with p-value less than 0.01. It was also observed that these dentists marked 0.82 average score higher to patients age also with a p-value less than 0.10. The differences for rest of factors were insignificant statistically (Table 1, Fig 1). When considering gender for the differences in scores for various factors, there were 13 dentists who were female and there were 47 male dentists. Male dentists marked significantly higher average score for technical difficulty 0.9, and aesthetics of final result 1, with p-values less than 0.10 and 0.05 respectively, and female dentists gave high importance to patients wishes with an average score 1.0 with p-value less than 0.10. The differences for rest of the factors were insignificant statistically to decide for FPD and RPD (Table 1, Fig 2). As for as the location of dental clinic is concerned, there were 20 dentists working in the area of Gulberg and Defence which are the areas with high income class and 40 were practicing in Shalimar and Allama Iqbal Towns which are relatively low income class and medium income class areas. The dentists working in Gulberg and Defence Towns gave significantly high preference to Patient's wishes 0.9, technical difficulty 0.7 both with p-values less than 0.10. The average scores were high for speech 1.0; time required for treatment 1.1, number of visits needed 1.4, all with p-values less than 0.01 and prognosis 0.9 with p-value less than 0.05 (Table 1, Fig. 3).

Table 1: Percentage distribution of VAS responses, and means and standard deviations of total group, and difference between means with respect to experience, gender and towns of city in PPC (choice between FPD and RPD) (n = 60)

Factors	Visual Analogue Scale								Mean	SD	Mean differences		
	1	2	3	4	5	6	7	8			Experience	M/F	Towns
Patient's age	1	2	7	12	13	12	8	5	5.1	1.7	0.82 [†]	0.2	0.2
Patient's general health	1	0	5	15	15	17	6	1	5.1	1.3	0.56	-1.0 [†]	0.2
Patient's wishes	1	5	2	13	10	15	11	3	5.2	1.7	0.04	-1.0 [†]	0.9 [†]
Technical difficulty	0	3	6	7	18	15	6	5	5.2	1.5	0.76	0.9 [†]	0.7 [†]
Marginal bone level	0	1	4	18	13	14	6	4	5.2	1.4	0.07	0.1	0.5
Abutment condition	0	1	4	4	14	24	9	4	5.7	1.3	0.56	0.2	0.2
Oral hygiene	0	0	3	13	14	20	8	2	5.4	1.2	0.02	0.2	0.2
Experience with procedure	0	3	4	14	12	23	4	0	5.0	1.3	0.18	0.4	0.1
Occlusal stability	0	1	3	13	14	22	1	6	5.3	1.3	0.00	0.5	0.5
Chewing ability	1	1	3	15	14	14	11	1	5.2	1.4	0.20	0.4	0.5
Speech	1	2	5	10	25	11	4	2	4.9	1.4	0.20	0.5	1.0 [†]
Time required for treatment	1	5	6	13	22	6	5	2	4.6	1.5	0.04	0.6	1.1 [†]
Number of visits needed	1	2	8	14	23	5	7	0	4.7	1.3	0.82	0.3	1.4 [†]
Prognosis	0	0	4	14	11	20	8	3	5.4	1.3	0.11	0.0	0.9
Aesthetics of final results	0	0	4	11	13	16	13	3	5.5	1.3	0.18	1.0	-0.1
Patient's comfort	0	2	2	8	11	22	9	6	5.7	1.4	0.18	0.5	0.2
Patient's financial status	3	1	7	7	9	12	7	14	5.5	2.0	1.60 ^{††}	-0.1	-0.6

PPC = Paper patient case; VAS = visual analogue scale; VAS code: 1 unimportant, 8 = decisively important; Sample size for Experience: (Above 13 years = 15, upto 10 years = 45), Gender: (male = 47, female = 13), Zones: (Gulberg and Defence = 20, Shalimar and Allama Iqbal Towns = 40). P<0.10[†], 0.05^{††}, 0.01^{†††}

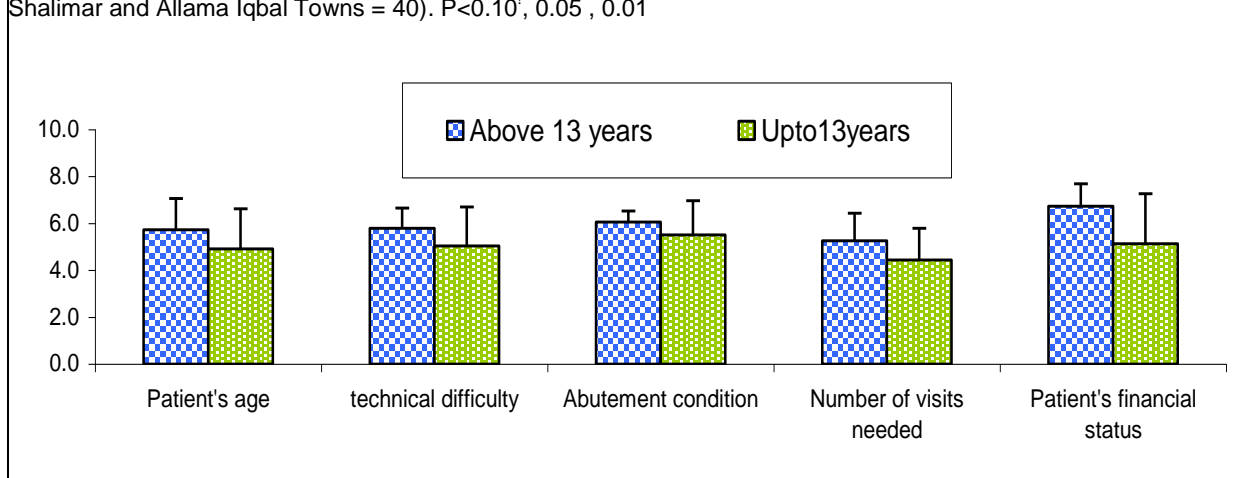


Fig.1: The comparison of average scores for significant factors on the basis of experience

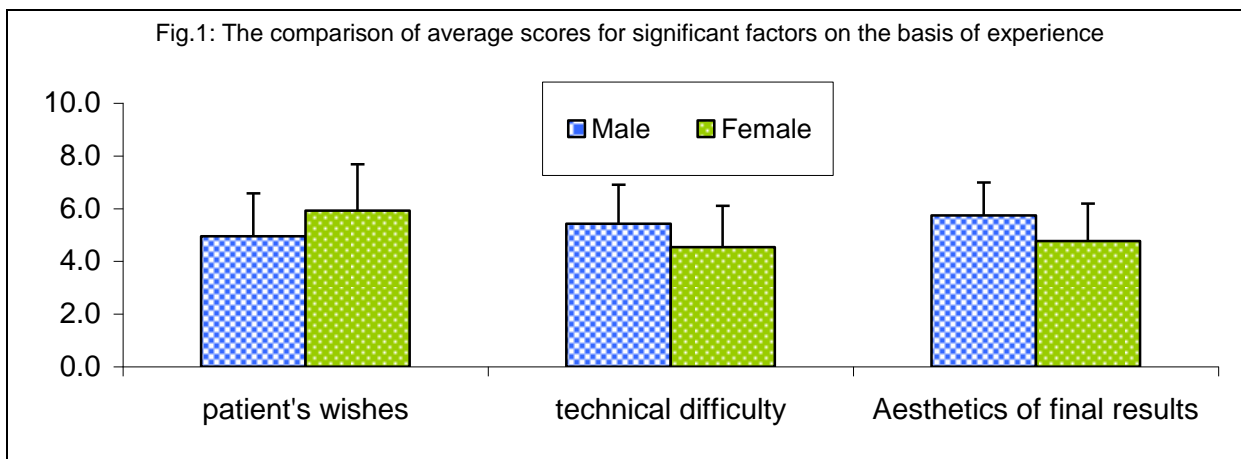


Fig. 2: The comparison of average scores for significant factors on the basis of gender of dentists

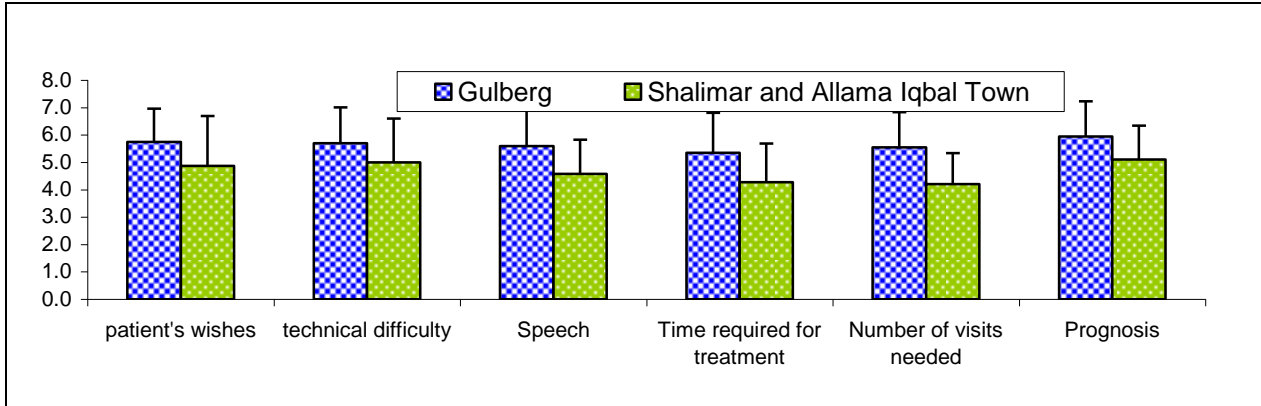


Fig.3: The comparison of average scores for significant factors on the basis of Location of dentist practice

DISCUSSION

Great individual variations, indicated by the relatively large standard deviations, were seen when evaluating the importance of various patient-related items. The PPC technique applied in this study is similar to that applied in studies on decision making in general dentistry in the US²⁵ and in Prosthodontics decision making among general dentists in Sweden¹² and Saudi Arabia.⁸ These studies concluded that it is a useful research instrument for such purposes.

The present study showed that "abutment tooth condition", "technical difficulty", "patient's age", "aesthetics of final results" and "patient financial conditions" were the factors that local general dentists considered most important in the decision making of choice between fixed partial denture (FPD) and removable partial denture (RPD) [Table 1]. It is thus of vital interest for the general dentist that the abutment teeth are in good condition for treatment longevity in FPD and that the aesthetic results are important for the patient in RPD, which is in agreement with the Kronstrom et al²⁶ and Omar et al.⁸ The factors "treatment time required" and "number of visits required for treatment" were given low importance which is in agreement with Kronstrom et al²⁶ and Omar et al.⁸

On the contrary the financial status has a strong influence in the local conditions in Lahore among general dentists particularly in experienced group. However the factor of "patient's financial status" has shown high importance in FPD and low importance in RPD which has not been reported in any of the past studies. Kronstrom et al²⁶ concluded that the difference in patient fee for a FPD compared to RPD was much smaller in Sweden compared to other countries because of the insurance system introduced at the time of their study. Allen et al²⁵ has reported time and cost as factors for the disparity of cost and longer time for fabrication of FPD in the National Health Service. Australian study ranked

technical conditions such as "periodontal status," "length of edentulous span" and "number of missing teeth" as the most important ones. Patient-related items such as "patient preference" and "cost to patient" were ranked as less important.²⁷ It revealed differences between the studies among different countries. This is in agreement with Omar et al.⁸

CONCLUSION

Similarities as well as differences have been found in present study when compared with the studies in other countries which highlight the complexity of the decision making process. Financial status of the patient has played a pivotal role in treatment planning in this paper patient case which marked it as a pure local influence.

REFERENCES

1. McCreery A, Truelove E. Decision making in dentistry. Part II: clinical applications of decision methods. *J Prosthet Dent* 1991; 65: 575-85.
2. Ettinger R. Clinical decision making in the dental treatment of the elderly. *Gerodontology* 1984; 3: 157-65.
3. Grembowski D, Milgrom P, Fiset L. Factors influencing dental decision making. *J Public Health Dent* 1988; 48: 159-67.
4. *Community Dent Oral Epidemiol* 1979; 7: 335-9. Baraba et al. Restorative treatment decisions of Croatian university teachers. *Coll Antropol* 2012;36(4):1293-9.
5. A comparison of Personal Dental Service (PDS) and General Dental Service (GDS) patients in terms of reported interventions, oral health and dentists' perceptions. *Community Dent Health* 2009 ;26:170-6.
6. Brennan DS, Spencer AJ. Stability of practice beliefs and preferences for patients among private general dentists: a comparison of 1997 and 2007. *Aust Dent J* 2009; 54(3):198-203.
7. Kantor ML. Symposium proceedings clinical decision making in dentistry; 1992 June 18-19; Seattle, Washington: *J Dent Educ* 1992; 56: 787-835.

8. Omar R, Al-Kokani M, Abu Nassif L, Khan N. Factors influencing prosthodontic decision-making among general dentists. *Saudi Dent J* 2003; 15: 62-71.
9. Allen PF, Jepson NJ, Doughty, S. Bond. Attitudes and practice in the provision of removable partial dentures. *Br Dent J* 2008; 204: 1-5.
10. Kay EJ, Locker D. Variations in restorative treatment decisions: an international comparison. *Community Dent Oral Epidemiol* 1996;178:320-1.
11. Government of Pakistan, Ministry of Health, World Health Organization. Oral health in Pakistan. A Situation Analysis, 2004.
12. Kronstrom M, Palmqvist S, Soderfeldt B. Prosthodontic decision making among general dentists in Sweden: the choice between fixed partial dentures and single implants. *Int J Prosthodont* 2000; 13:34-40.
13. Röing M, Holmström IK. Involving patients in treatment decisions - a delicate balancing act for Swedish dentists. *Health Expect* 2014;17:500-10.
14. Silverman SI. Differential diagnosis. Fixed or removable prosthesis. *Dent Clin North Am* 1987; 31(3): 347-62.
15. Swelem AA, Gurevich KG, Fabrikant EG, Hassan MH, Aqou S. Oral health-related quality of life in partially edentulous patients treated with removable, fixed, fixed-removable, and implant-supported prostheses. *Int J Prosthodont* 2014; 27(4):338-47.
16. Grembowski D, Milgrom P, Fiset L. Factors influencing dental decision making. *J Public Health Dent* 1988; 48(3): 159-67.
17. Moshkelgosha V, Mehrzadi M, Golkari A. The public attitude towards selecting dental health centers. *J Dent (Shiraz)* 2014; 15(3):129-34.
18. Zurdo J, Romão C, Wennström JL. Survival and complication rates of implant-supported fixed partial dentures with cantilevers: a systematic review. *Clin Oral Implants Res* 2009; 20:59-66.
19. Grembowski D, Milgrom P, Fiset L. Clinical decision making among dental students and general practitioners. *J Dent Educ* 1989;53(3):189-92.
20. Pratkanis AR. Attitude structure and function. New York: Erlbaum, 1989.
21. Kronstrom M, Palmqvist S, Eriksson T, Soderfeldt B, Carlsson GE. Practice profile differences among Swedish dentists. A questionnaire study with special reference to prosthodontics. *Acta Odontol Scand* 1997; 55: 265-9.
22. Karaharju-Suvanto T, Närpänkangas R, Koivumäki J, Pyörälä E, Vinkka-Puhakka H. Gender differences in self-assessed clinical competence - a survey of young dentists in Finland. *Eur J Dent Educ* 2014;18(4):234-40.
23. Eriksson T, Kronstrom M, Palmqvist S, Soderfeldt B. Some factors influencing the quantity of prosthodontic treatment performed by general practitioners in public dental service. *Swed Dent J* 1992; 16: 247-51.
24. Chau TN, Witter DJ, Kreulen CM, Creugers NH, Tu HH. Replacement of missing teeth in a southern region of Vietnam--a descriptive dental laboratory study. *Int Dent J* 2009;59(4):192-6.
25. Allen PF, Jepson NJ, Doughty J, Bond S. Attitudes and practice in the provision of removable partial dentures. *Br Dent J* 2008; 204: E2-5.
26. Kronström M, Palmqvist S, Söderfeldt B. Prosthodontic decision-making among general dentists in Sweden. II: The choice between fixed and removable partial dentures. *Int J Prosthodont* 1999; 12: 527-33.
27. Brennan DS, Spencer AJ. Longitudinal comparison of factors influencing choice of dental treatment by private general practitioners. *Aust Dent J* 2006;51(2):117-23.