

ORIGINAL RESEARCH ARTICLE

PERSPECTIVE OF DENTAL PROFESSIONALS TOWARDS USE OF CAST PARTIAL DENTURE IN NEPAL

Srijana Mishra Sapkota<sup>1,\*</sup>, Smriti Narayan Thakur<sup>1</sup>, Bibek Khanal<sup>1</sup>

<sup>1</sup>Department of Prosthodontics & Maxillofacial Prosthetics, Chitwan Medical College, Chitwan, Nepal

Received: 21 Jan, 2022

Accepted: 02 Mar, 2022

Published: 15 Mar, 2022

**Key words:** Cast partial denture; Curriculum; Dental professionals; Prosthodontists.

**\*Correspondence to:** Srijana Mishra Sapkota,  
Department of Prosthodontics & Maxillofacial  
Prosthetics, Chitwan Medical College, Chitwan, Nepal.  
Email: [mishra.srijana@cmc.edu.np](mailto:mishra.srijana@cmc.edu.np)  
DOI: <https://doi.org/10.54530/jcmc.634>

**Citation**

Sapkota SM, Thakur SN, Khanal B. Perspective of dental professionals towards use of cast partial denture in Nepal. Journal of Chitwan Medical College. 2022;12(39):21-4.



Peer Reviewed

**ABSTRACT**

**Background:** With increase in treatment options for rehabilitation of partially edentulous patients, the use of cast partial denture in clinical practice as well as teaching curriculum has been decreased. The objective of this study was to evaluate the perspective of dental professionals towards use of cast partial denture in Nepal.

**Methods:** The study consisted of nine close-ended questions regarding the use of cast partial denture by dental professionals in clinical practice throughout Nepal. The weblink of the questionnaire were shared via E-mail to dentists practicing in Nepal, to obtain a response of 350. Statistical analysis was done using SPSS version 26.

**Results:** The study showed that the most preferred choice of rehabilitation was fixed partial denture by all dental professionals around 52.6% of , 60% of prosthodontists and 48.9% by other specialist dentists. The least preferred choice was Removable partial denture about 16.6% by general dental practitioners, 18.5% by prosthodontists and 13.3% by other specialist dentists. Among the different types of removable partial dentures, acrylic partial denture was the most preferred one and the primary reason for not recommending cast partial dentures by the dental professionals was too complicated procedure to be carried out. Nevertheless, majority of the dentists were in favor of giving more importance for teaching cast partial dentures in graduation curriculum.

**Conclusions:** The study concluded that the use of cast partial denture is declining in clinical practice in Nepal due to the complicated procedure of fabrication and esthetic concern. Therefore, there is a need to emphasize the significance of teaching of cast partial dentures in graduation curriculum.

**INTRODUCTION**

The proportion of partial edentulism increases as there is increase in the age of population.<sup>1</sup> Conventionally, such edentulous conditions were usually rehabilitated by using cast partial dentures (CPDs).<sup>2</sup> However, due to display of metallic components and the complex design of the denture, the use of CPDs is declining.<sup>3</sup> The poor acceptance of CPDs by the patient has not only led to decline in the importance of CPD in clinical practice but also in the teaching curriculum. Several studies showed that 35%–50% of patients never received removable partial dentures (RPDs) or only occasionally wore the dentures.<sup>4,5</sup>

As the reduction in use of RPD has further declined the importance of CPD from academic point of view, a study showed a national average of only ten RPDs fabricated during 3 years of graduate prosthodontic course in US dental schools while only one in most of the British dental schools.<sup>6,7</sup> Considering the decreased use of conventional RPDs and its limited importance in the teaching curriculum, it becomes essential to determine the status of RPDs in clinical practice in Nepal. The purpose of

this survey was to evaluate the attitudes of dental professionals toward conditions using CPDs in private practice in Nepal.

**METHODS**

This was a descriptive cross-sectional study done by convenience sampling method. The sample size was 343 calculated by using the formula for a finite population.

$$\frac{Z^2 \cdot p(1-p)}{e^2} \div \left( 1 + \frac{Z^2 \cdot p(1-p)}{e^2 N} \right)$$

where

**z** is the z score(1.96)

**e** is the margin of error(5%)

**N** is population size(Total registered dentist in Nepal =3200)

**p** is the population proportion

The study included all the dental practitioners who gave consent to participate in the study. The questionnaires were

sent to all registered dental practitioners including general dental practitioners (GDPs), prosthodontists and other dental specialists in Nepal through online methods. The questionnaires were adopted from previous studies<sup>9</sup> and modified after consultation with the experts related to the field.

The self-administered questionnaire consisted of two parts. The first part consisted of sociodemographic details of participants. The second part consisted of 9 questions related to perception towards use of cast partial denture. The first three questions (Q01–Q03) were related to the preference of RPDs, types of RPDs, and how frequent patients prefer it. The next two questions (Q04 and Q05) were related to the number of CPDs given to patients and type of problems faced. The next three questions (Q06 and Q07) were on justification of other RPDs as alternative to CPDs, reason for not recommending CPDs, and finally (Q08 and Q09) was based on the selection

criteria for RPD or fixed bridge and whether CPDs should be recommended ahead of implant for dental graduates. The data were collected and statistical analysis was done using SPSS version 26.

## RESULTS

In the study, 175 GDPs, 130 prosthodontists and 45 other specialist dentists participated. The most preferred choice of rehabilitation was fixed partial denture by all dental professionals around 52.6% of GDPs, 60% of prosthodontists and 48.9% by other specialist dentists. The least preferred choice was RPD about 16.6% by GDPs, 18.5% by prosthodontists and 13.3% by other specialist dentists. Among RPDs, acrylic partial denture was the most preferred one and majority of the dentists were in favor of giving more importance for teaching cast partial dentures in graduation curriculum.

**Table 1: Descriptive statistics of frequency and percentage of various questionnaires**

Questionnaire	BDS (n/%)	Prosthodontists (n/%)	Other specialists (n/%)	Total (n/%)
1. Preference for the rehabilitation of partially edentulous patients in your clinical practice				
a. RPDs	29(16.6%)	24(18.5%)	6(13.3%)	59(16.9%)
b. FPDs	92(52.6%)	78(60.0%)	22(48.9%)	192(54.9%)
c. Implants	54(30.9%)	28(21.5%)	17(37.8%)	99(28.3%)
2. If you have to choose RPDs, the type of RPDs you would prefer?				
a. CPDs	40(22.9%)	108(83.1%)	11(24.4%)	159(45.4%)
b. Acrylic treatment partial dentures	94(53.7%)	11(8.5%)	22(48.9%)	127(36.3%)
c. Flexible partial dentures	41(23.4%)	11(8.5%)	12(26.7%)	64(18.3%)
3. If CPDs are the option, how often does the patient agree for CPDs				
a. Very rarely	36(20.6%)	33(25.4%)	6(13.3%)	75(21.4%)
b. Rarely	97(55.4%)	39(30.0%)	33(73.3%)	169(48.3%)
c. Quite often	36(20.6%)	46(35.4%)	6(13.3%)	88(25.1%)
d. Very regularly	6(3.4%)	12(9.2%)	0(0.0%)	18(5.1%)
4. Number of CPDs delivered per year in your clinical practice?				
a. 0	76(43.4%)	0(0.0%)	23(51.1%)	99(28.3%)
b. 1–5	81(46.3%)	83(63.8%)	16(35.6%)	180(51.4%)
c. 5–10	12(6.9%)	23(17.7%)	6(13.3%)	41(11.7%)
d. >10	6(3.4%)	24(18.5%)	0(0.0%)	30(8.6%)
5. Major problems faced while suggesting CPDs to the patients?				
a. Fabrication	101(57.7%)	39(30.0%)	16(35.6%)	156(44.6%)
b. Cost	45(25.7%)	80(61.5%)	11(24.4%)	136(38.9%)
c. Fracture	-	-	-	-
d. Adjustment	29(16.6%)	11(8.5%)	18(40.0%)	58(16.6%)
6. Do you feel is it justifiable to give acrylic or flexible RPDs as an alternative to CPDs?				
a. Yes	98(56.0%)	33(25.4%)	22(48.9%)	153(43.7%)
b. No	77(44.0%)	97(74.6%)	23(51.1%)	197(56.3%)
7. If CPDs are not the option to Q6, then what is the reason for not recommending CPDs?				
a. Too complicated procedure to be carried out	113(64.6%)	33(25.4%)	28(62.2%)	174(49.7%)
b. Availability of better treatment options such as implant-supported restorations	45(25.7%)	97(74.6%)	6(13.3%)	148(42.3%)
c. Acrylic or flexible RPDs are better options to CPDs	17(9.7%)	0(0.0%)	11(24.4%)	28(8%)
8. What is the selecting criteria for RPD or fixed bridge in your clinical practice				
a. Socioeconomic status of patients	57(32.6%)	78(60.0%)	28(62.2%)	163(46.6%)
b. Oral health status	42(24.0%)	18(13.8%)	6(13.3%)	66(18.9%)

c. Willingness of patients	76(43.4%)	34(26.2%)	11(24.4%)	121(34.6%)
9. Do you recommend giving more importance for teaching CPDs in graduation curriculum when compared to implant-supported treatment modalities?				
a. Yes	140(80.0%)	113(86.9%)	29(64.4%)	282(80.6%)
b. No	35(20.0%)	17(13.1%)	16(35.6%)	68(19.4%)

## DISCUSSION

The modernization of today's world have led to increasingly strong esthetic demand in patients especially during prosthetic rehabilitation, with an increasing number of patients avoiding RPDs. Further, an increased incidence of dental caries and periodontal breakdown has been reported on denture wearing patients in many studies.<sup>9,10</sup> The poor adaptability of patients towards RPDs along with the possible need of an additional long-term treatment option reflect the need to know about attitudes and expectation of patients as well as the clinical knowledge and technique of dentists.<sup>11</sup> If the reason for declining preference of RPD could be identified accurately, the effective methods and techniques could be implemented to give a better outcome. This study has been conducted with a novel aim of knowing the perspectives of dental professionals towards use of cast partial denture in Nepal.

For rehabilitation of partially edentulous patients, there is availability of various treatment options. The study showed that the most preferred choice of rehabilitation was fixed partial denture by all dental professionals around 52.6% of general dental practitioners (GDPs), 60% of prosthodontists and 48.9% by other specialist dentists. Secondly, implant supported prosthesis was preferred by 21.5% GDPs, 30.9% prosthodontists and 17.2% by other specialist dentists. The least preferred choice was Removable partial denture about 16.6% by GDPs, 18.5% by prosthodontists and 13.3% by other specialist dentists. Similar results were obtained in a study by Dikbas et al. where in 18% of US dental schools, RPDs were not a clinical requirement for graduation, which could be attributed to the increased interest toward implants with high success rates.<sup>6</sup>

Among the different types of RPD's, acrylic partial denture was the most preferred one in clinical practice in Nepal. When the option of CPD was given to patients, they quite often agreed for the choice. This decline in the use of RPD is attributed to the availability of better treatment modalities such as implant-supported prosthesis. The use of thermoplastic RPDs (flexible RPD) emerged as an alternative to conventional

RPDs because of their unbreakable nature, esthetics, and comfort.<sup>12,13</sup> In a survey by Polyzois *et al.*, it was reported that 75% of the patients who received flexible RPDs were satisfied.<sup>3</sup>

According to this study, the number of CPD's delivered per year in clinical practice was highest among prosthodontists. The major problem faced while suggesting CPD's lied in fabrication process. Majority of the dentist felt that it would be not justifiable to give acrylic or flexible RPD as an alternative to CPD's. The selection criteria for RPD or FPD in clinical practice mainly depends on socioeconomic status of patient and the primary reason for not recommending CPDs was too complicated procedure to be carried out. Further, the study recommended giving more importance for teaching CPDs in graduation curriculum when compared to implant-supported treatment modalities. Rashedi and Petropoulos stated that in 14% of the US dental schools, RPDs were not a separate course in preclinical curriculum and in 18% of the schools, RPDs was not a requirement for graduation.<sup>14,15</sup>

With the availability of various treatment options for rehabilitation of partially edentulous patients, there is decrease in the use of conventional RPDs and its limited importance in the teaching curriculum. This study aimed to find the status of CPDs in private practice in Nepal through this survey and found an alarming condition to promote the significance of RPDs in teaching curriculum as it is one of the cheapest and safest method of rehabilitation.

## CONCLUSION

The study also has limitations. There is also chances of response bias and information bias which cannot be ignored. The study concluded that the use of CPD is declining in clinical practice in Nepal due to the complicated procedure of fabrication and esthetic concern. Therefore, there is a need to emphasize the significance of teaching of CPDs in graduation curriculum.

**CONFLICT OF INTEREST:** None

**FINANCIAL DISCLOSURE:** None

## REFERENCES:

- Nuttall NM, Steele JG, Pine CM, White D, Pitts NB. The impact of oral health on people in the UK in 1998. *Br Dent J* 2001;190:121 6. [DOI]
- Bidra AS, Agar JR. Clinical experience of residents with RPD treatment in U.S. graduate prosthodontics programs. *J Dent Educ* 2010;74:104 9. [DOI]
- Polyzois G, Lagouvardos P, Kranjic J, Vojvodic D. Flexible removable partial denture prosthesis: A survey of dentists' attitudes and knowledge in Greece and Croatia. *Acta Stomatol Croat* 2015;49:316 24. [DOI]
- Wright SM. Prosthetic practice in the National Health Service: 2. Partial dentures. *Dent Update* 1992;19:424 6, 428 9. [PMID]
- Jepson NJ, Thomason JM, Steele JG. The influence of denture design on patient acceptance of partial dentures. *Br Dent J* 1995;178:296 300. [DOI]
- Dikbas I, Ozkurt Z, Kazazoglu E. Predoctoral prosthodontic curricula on removable partial dentures: Survey of Turkish dental schools. *J Dent Educ* 2013;77:85 92. [DOI]
- Clark RK, Radford DR, Juszczak AS. Current trends in removable partial denture teaching in British dental schools. *Br Dent J* 2011;211:531 5. [DOI]
- Sonnahalli NK, Mishra SK, Chowdhary R. Attitude of dental professionals

- toward cast partial denture: A questionnaire survey in India. *J Indian Prosthodont Soc.* 2020 Jan-Mar;20(1):104-109. [\[DOI\]](#)
9. Drake C W, Beck J D. The oral status of elderly removable partial denture wearers. *J Oral Rehabil* 1993; 20: 53-60. [\[DOI\]](#)
  10. Mojon P, Rentsch A, Budtz-Jorgensen E. Association between prosthodontic status, caries, and periodontal disease in a geriatric population. *Int J Prosthodont* 1995; 8: 564-71. [\[PMID\]](#)
  11. Allen PF, Jepson NJ, Doughty J, Bond S. Attitudes and practice in the provision of removable partial dentures. *Br Dent J.* 2008 Jan 12;204(1):E2. [\[DOI\]](#)
  12. Jepson N J A, Moynihan P J, Kelly P J, Watson G W, Thomason J M. Caries incidence following restoration of shortened lower dental arches in a randomized controlled trial. *Br Dent J* 2001; 191: 140-4. [\[DOI\]](#)
  13. Steele J G, Walls A W, Murray J J. Partial dentures as an independent indicator of root caries risk in a group of older adults. *Gerodontology* 1997; 14: 67-74. [\[DOI\]](#)
  14. Rashedi B, Petropoulos VC. Preclinical removable partial dentures curriculum survey. *J Prosthodont* 2003;12:116-23. [\[DOI\]](#)
  15. Petropoulos VC, Rashedi B. Removable partial denture education in U.S. dental schools. *J Prosthodont* 2006;15:62-8. [\[DOI\]](#)