

Evaluation of Knowledge Level of Dental Practitioners Regarding Treatment with Provisional Acrylic Removable Partial Dentures among Patients in Erode District: A Cross-Sectional Survey

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ABSTRACT

Objective: The study aimed to assess the knowledge of dental practitioners who treat their patients with removable partial dentures and also to assess the influence of factors such as abutment tooth loss, retention, esthetics, chewing, speech, and comfort of patients with therapy. **Methods:** The study was conducted at a dental clinic of Erode district. In this study, 80 dentists who treat their patients with removable partial denture were involved. Eligible participants were administered with structured questionnaires which include age, gender, and level of education. The study was a cross-sectional survey of general dental practitioners (GDPs). **Results:** Out of the eighty questionnaires, seventy-five were returned by GDPs throughout the district. The most important factor reported as influencing both the GDP's decision to treat with partial denture and its subsequent success was patient inclination to have a partial denture. However, for a number of dentists, there was a divergence between knowledge and practice. The study indicates that the technical complications were more likely to occur than biological failures (i.e., loss of an abutment). **Conclusion:** Dentists evaluated that most patients were satisfied with their dentures. It was determined that the best approach toward removable dental prostheses (RDPs) as a treatment option for partially edentulous patients includes a combination of excellent oral hygiene, design of prosthesis, and proper abutment selection in order to minimize the effects of biological and technical failures and complications to ensure optimal RDP longevity and survival.

KEYWORDS: *Abutment mobility, abutment tooth loss, partially edentulous, provisional acrylic removable partial denture*

INTRODUCTION

As the population ages, dental health survey indicates that the proportion of partially dentate older adults is increasing. The major challenge for the dental profession is to plan oral health care for this group of patients. Treatment options for partial edentulism include no treatment, removable dental prostheses (RDPs) or implant or tooth-supported fixed dental prostheses (FDPs). A number of considerations must be taken into account when deciding which treatment option to pursue. RDPs can be removed and inserted by the patient, which gives them an advantage over FDPs in terms of accessibility for oral hygiene. A RDP is typically indicated for a long edentulous span, no

posterior abutment teeth, and is usually less expensive when compared to FDP options.^[1]

Removable partial dentures (RPDs) are not a complicated method for replacing teeth for patients who had lost some of their natural teeth. Irrespective of an intended benefit to appearance and function, a number of studies have indicated poor patient acceptance of RPDs, with

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findings 30%–50% of patients never or only occasionally wearing their denture commonly reported.^[2]

Further, cross-sectional studies and longitudinal clinical trials have reported an increased incidence of caries and periodontal breakdown when RPDs are worn. This apparent compliance with wearing RPDs, together with their potential to generate an additional long-term treatment need, represents a considerable potential waste of resource. The reasons for this discrepancy are unclear but may reflect the attitudes and expectation of patients, the clinical knowledge and technique of dentists, or administrative and financial restrictions. If these are identified accurately, practical guidelines can be developed to target RPD treatment more effectively.^[3]

METHODS

General dental practitioners (GDPs) were randomly sampled after stratification according to their qualification as undergraduates and postgraduates. A postal self-completion questionnaire was developed, derived from themes identified through a literature review and interviews with dental practitioners. Based on pilot data, we estimated that a sample of eighty would enable us to achieve confidence limits.

The study teams were blind to the identity of the practitioners sampled. An initial questionnaire and covering letter were sent to dental practitioners, followed by two reminders at 3 weekly intervals.

We used questionnaire, which was devised for the purpose of this study, to evaluate the knowledge about treatment with provisional acrylic removable partial denture among dental practitioners in Erode district.

Data collection

Eighty questionnaires were sent to GDPs, of which 74 were returned. The questions were about preference

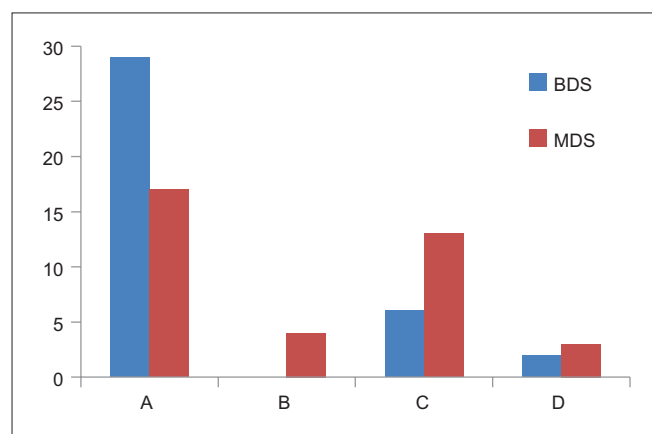


Figure 1: Practice and provision of removable partial denture. A: Provision of acrylic removable partial denture, B: Cast partial dentures, C: Fixed partial denture tooth supported, D: Implant supported

of treatment of choice, age considerations, reasons for providing RPD, abutment evaluation, patient level of acceptance, and clinical evaluation after providing RPD.

Statistical methods

Data were analyzed using SPSS software version 16 for windows IBM corp. Chi-square tests were used to test association between categorical variables and analysis of variance (ANOVA) was used for continuous variables. $P < 0.05$ was accepted as statistically significant.

RESULTS

Eighty questionnaires were sent to GDPs. Total samples were divided into two groups each with forty individuals according to their qualifications (BDS/MDS). Persons qualified with prosthodontic degree were excluded from the study. Of the eighty questionnaires, 74 were returned (response 93%).

General dental practitioner practice and provision of removable partial dentures

According to GDPs' estimates, the number of partial dentures constituted more acrylic than chrome RPDs [Figure 1]. High providers of chrome RPDs were more likely to be postgraduate qualifications ($P < 0.05$). The findings also highlighted that low prescribers of acrylic and high prescribers of chrome dentures were more likely to endorse the view that dentures made from chrome rather than acrylic would be successful (ANOVA, $P < 0.05$).

Twenty-two percent of GDPs routinely arranged a review appointment for patients shortly after providing a RPD. The remaining GDPs advised patients to make a review appointment only if they experienced problems with their RPD. There were no association between follow-up appointment practice and type of practice. However, those most likely to provide acrylic RPDs were least likely to routinely arrange a review appointment for patients after providing their RPD ($P < 0.01$). After a first-time provision of a RPD, 89% of GDPs reported providing oral hygiene instructions without referral to a hygienist. This did not differ by type of practice or level of use.

Acceptance of removable partial denture

Majority of the patients were satisfied with the treatment outcome.^[4] The distribution of patients' acceptance of RPDs is shown in Figure 2. More than half of the patients assessed all variables describing their satisfaction with the RPDs as moderate (52%). About 47% patients prefer only for esthetic purpose. Previous experience in providing RPDs is regarded as a factor influencing RPD provision in the vast majority of cases. According to this study, the percentage of completely dissatisfied patients was 1% for the RPDs.

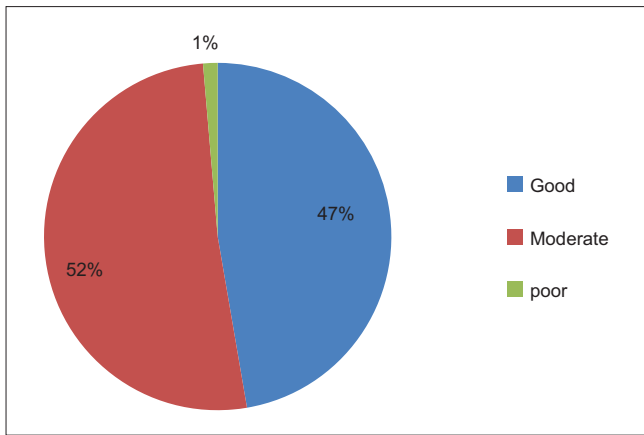


Figure 2: Level of acceptance of removable partial denture

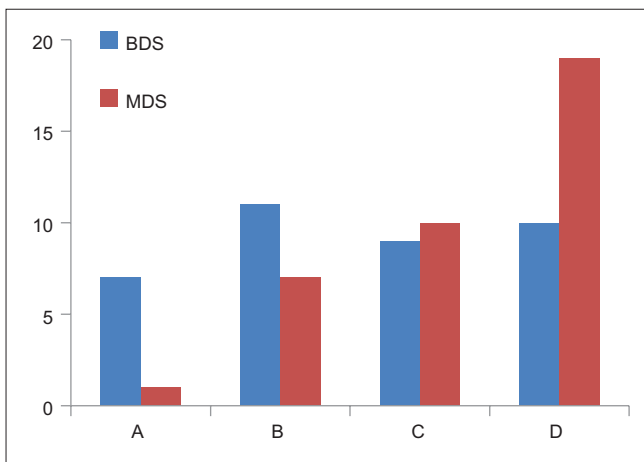


Figure 3: Reason considered for providing removable partial denture. A: For the sake of esthetics, B: For space maintenance, C: To enhance speech, D: To provide occlusion and improve chewing ability

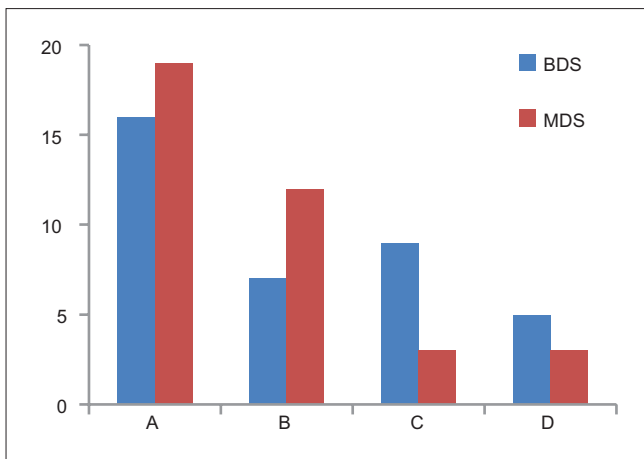


Figure 4: Problems faced after providing removable partial denture. A: Abutment tooth mobility, B: Abutment tooth loss, C: Retention factors, D: Technical factors

The process of providing removable partial dentures

More than half of the dentists assessed all variables describing their satisfaction with the RPDs as the best.

Postgraduate dentists support the factor that the RPD should be provided to obtain primarily the occlusion and improve chewing ability and to enhance speech and then esthetics [Figure 3].

Problems faced after providing removable partial denture

Figure 4 presents the data for tooth mobility. The results revealed that tooth mobility is the most common problem associated with providing acrylic RPDs. There was a decrease in the frequency of tooth loss score compared to mobility. There were significant differences in the incidence of mobility and tooth loss in patients with RPD. Other related problems of caries and fracture of the abutment teeth and roots were also been reported.

DISCUSSION

This study listed the factors influencing the prescription of RPD. Further important consideration in this regard was the process used to develop the study questionnaire. This instrument was grounded in the outcomes of qualitative interviews with GDPs, and its content validity is, therefore, appropriate. The focus of this article was to describe dentists’ attitudes and practice in providing RPDs.

Overall, it is clear that the provision of RPDs continues to be primarily patient led.^[5] Both the GDPs’ decision to provide a RPD and its subsequent success were patient desire to have a partial denture and esthetic value associated with having a RPD.^[6] This supports previous findings and endorses the view that patients are unlikely to wear a RPD in the absence of self-perceived need. Interestingly, in the present study, patient desire to have a RPD was reported by dentists as the most important factor in providing a RPD regardless of any other individual case factor. However, the decision-making process is also influenced by a number of factors including time and previous experience in providing RPDs.

Dentists without postgraduate qualifications were more likely to prescribe acrylic dentures than cobalt-chromium-based dentures. This may be a reflection of financial considerations or demands of patients in socioeconomically deprived areas.^[7] Consistent with the literature, the majority of respondents in the present study supported the view that success would be positively influenced if the dentist designed the RPD. However, only half of all dentists reported designing their own RPD in practice, again possibly associated with the difficulty of resolving time and cost.

Clearly, the present study highlights that for some dentists there is a divergence between knowledge and

practice. This consistency is most apparent in decisions regarding material used, level of follow-up, and responsibility for design, which are difficult to resolve or justify. Interestingly, published evidence in the scientific literature was not widely regarded as influential in the decision-making process for prescribing RPDs.^[8] Nearly 91% of GDPs believed that using cobalt chrome would to some degree improve the chance of success of a RPD.^[9] Similarly, a majority of GDPs reported that aftercare improves the chance of success of the RPD.^[10] Many GDPs in practice do not follow their own beliefs and fail to routinely arrange a review appointment with patients or refer patients to a hygienist.

CONCLUSION

The results reflecting patient satisfaction with the treatment outcomes of their RPDs could be helpful to both clinicians and patients in treatment planning. Obviously, the clinician should give a thorough explanation of what can be expected from the RPD and its esthetic and functional limitations (chewing, speech) to avoid unrealistic expectations on the part of some patients. There is general agreement that patient-driven factors are critical to the outcome of RPD provision. However, there are apparent barriers to the best practice in RPD design and provision, which may be a reflection of dentists' perceptions.

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Conflicts of interest

There are no conflicts of interest.

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