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Research Article

Assessment of Dental Practitioners' Satisfaction Regarding Acrylic Removable Partial Denture in Douala, Cameroon

Évaluation de la Satisfaction des Praticiens Dentaires Concernant les Prothèses Partielles Amovibles en Acrylique à Douala, au Cameroun

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ABSTRACT

Introduction. Rehabilitating edentulous patients has always been challenging. Edentulism has functional and psychosocial consequences and can be corrected by fitting removable dentures. The success of this treatment depends on the patient's acceptance of their new dentures, but also on their ability to use them, which largely hinges on the quality of the dentures. This study aimed to assess the satisfaction of dental practitioners regarding the use of removable dentures and to identify factors influencing their satisfaction in Douala. **Methods.** A descriptive cross-sectional study was conducted over a 20-month period (March 2024 – June 2025). A non-probabilistic sampling method was used, and participants meeting the inclusion criteria were recruited. Statistical analysis was performed using non-parametric tests, with a p-value ≤ 0.05 considered statistically significant. **Results.** The sample consisted of 47 participants, with a slight male predominance (51 %). Dental surgeons represented 61.7 % of the cohort, while dental technicians accounted for 38.3 %. More than half of the participants (55.3 %) had 3 to 5 years of professional experience, and the majority worked in private practice (63.8 %). Acrylic resin was the most commonly used material for fabricating removable dentures (59.6 %), primarily due to its low cost and availability. Practitioner satisfaction was mainly linked to prosthesis quality (25.5 %) and affordable prices (21.3 %). The main reasons for dissatisfaction were the need for frequent adjustments (38.4 %) and the lack of rigidity of the prostheses (21.3 %). **Conclusion.** Removable dentures made of acrylic resin remain the main option in Douala for economic reasons, but improvements in communication, practitioner training, and material quality are necessary to strengthen practitioner and patient satisfaction.

RÉSUMÉ

Introduction. La réhabilitation des patients édentés a toujours constitué un défi. L'édentement a des conséquences fonctionnelles et psychosociales et peut être corrigé par la pose de prothèses amovibles. La réussite de ce traitement dépend de l'acceptation par le patient de ses nouvelles prothèses, mais aussi de sa capacité à les utiliser, ce qui dépend en grande partie de la qualité de celles-ci. Cette étude visait à évaluer la satisfaction des praticiens dentaires concernant l'utilisation des prothèses amovibles et à identifier les facteurs influençant cette satisfaction à Douala. **Méthodes.** Une étude descriptive transversale a été menée sur une période de 20 mois (mars 2024 – juin 2025). Une méthode d'échantillonnage non probabiliste a été utilisée, et les participants répondant aux critères d'inclusion ont été recrutés. L'analyse statistique a été réalisée à l'aide de tests non paramétriques, une valeur p ≤ 0,05 étant considérée comme statistiquement significative. **Résultats.** L'échantillon était composé de 47 participants, avec une légère prédominance masculine (51 %). Les chirurgiens-dentistes représentaient 61,7 % de la cohorte, tandis que les prothésistes dentaires en constituaient 38,3 %. Plus de la moitié des participants (55,3 %) avaient entre 3 et 5 ans d'expérience professionnelle, et la majorité exerçait en cabinet privé (63,8 %). La résine acrylique était le matériau le plus couramment utilisé pour la fabrication de prothèses amovibles (59,6 %), principalement en raison de son faible coût et de sa disponibilité. La satisfaction des praticiens était principalement liée à la qualité des prothèses (25,5 %) et à des prix abordables (21,3 %). Les principales raisons d'insatisfaction étaient la nécessité d'ajustements fréquents (38,4 %) et le manque de rigidité des prothèses (21,3 %). **Conclusion.** Les prothèses dentaires amovibles en résine acrylique restent la principale option à Douala pour des raisons économiques, mais des améliorations en matière de communication, de formation des praticiens et de qualité des matériaux sont nécessaires pour renforcer la satisfaction des praticiens et des patients.

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HIGHLIGHTS FOR READERS IN A HURRY

The problem this study addressed. In Douala (Cameroon), data on practitioner satisfaction with ARPDs were non-existent. This study aimed to assess the satisfaction level of dentists and prosthetists and identify associated factors, to guide necessary improvements.

What this study adds to our knowledge. Among 47 practitioners, 55.3% had 3-5 years of experience. Acrylic resin was the main material (59.6%). Reasons for satisfaction included quality (25.5%) and affordable price (21.3%). Dissatisfaction was linked to frequent adjustments (38.4%) and material rigidity (21.3%). Nearly 68.1% of practitioners expressed overall dissatisfaction.

How this is relevant to clinical practice and research. These findings support improved communication between practitioners and prosthetists, continuing education on new materials and techniques, and consideration of alternatives to acrylic resin when financial constraints allow. Studies evaluating patient satisfaction are needed for a comprehensive approach.

INTRODUCTION

Rehabilitating edentulous patients has always been challenging. Edentulism can have functional and psychosocial consequences and can be corrected by fitting removable dentures (1). The success of this treatment depends on the patient's acceptance of their new dentures, but also on their ability to use them, which largely hinges on the quality of the dentures (2). guidelines of the National Oral Health Policy introduced prosthetic rehabilitation into primary health care, recommending that each unit consider the possibility of providing basic dental prostheses. These recommendations also include actions of rehabilitation, whether partial or total, aimed at restoring abilities lost due to diseases, in order to promote the reintegration of patients into their social and professional life (3). Among those aged 65–74, 20.1% required a partial prosthesis in one jaw and 17.9% in both jaws (4). The study also reported that public health services were the most frequently used across the country. Regarding acrylic removable partial dentures, Xie et al (5) noted that they play a key role in providing temporary aesthetic and functional benefits before permanent dentures are placed. Although they are often perceived as less comfortable and less efficient in terms of chewing function, occlusal stability, and oral hygiene, various improvements have been developed to enhance their effectiveness (5). Among the factors that might affect patients' acceptance of their new dentures is the dentists' experience. While Evans et al (6) reported no significant correlation between the treatment outcomes and the experience of the surgeon, Gueders and Geerts (7) found that the operator experience has a significant influence on microleakage in class V composite restorations. Furthermore, the high-quality complete dentures provided by experienced dentists may not lead to patient satisfaction; therefore, it is difficult to evaluate the significance of experience in the field of denture treatment (8). In December 2015, the Oral Health Coordination (OHC) of BHCH established clear criteria regarding the indication, limitations, and use of acrylic removable partial dentures (ARPD) (6). They were recommended for aesthetic concerns, absence of anterior teeth, as immediate prostheses following extractions, or in cases of previous failures that caused social embarrassment (3). The satisfaction of dental surgeons with acrylic dentures depends on several factors, including the strength of the prosthesis, the comfort experienced while wearing it, and its aesthetic appearance (10). Although less expensive and easier to manufacture, acrylic partial dentures remain limited in terms of durability, thereby compromising the satisfaction of both the patient who wears them and the dentist who designed them. The aim of our study is to assess the dental practitioner's satisfaction with acrylic removable partial dentures.

PATIENTS AND METHODS

We conducted a cross-sectional, descriptive, prospective study, in the dental departments of hospitals and private dental offices at Douala. The study was carried out over a period of eight months, from 1 October 2024 to 30 June 2025. We included dental practitioners (dental surgeons, senior dental technicians) whose practicing in the city of Douala, with more than one year of professional experience and who use acrylic partial dentures and agreed to participate in this survey. The following were excluded: practitioners who withdrew their informed consent, survey forms that were poorly completed or incomplete and deemed unusable.

Prior to collecting data for this study, research authorization was obtained from the various directors of the facilities where the research was conducted. We obtained ethical clearance from the Institutional Ethics and Research Committee (IERC) of the Faculty of Medicine and Pharmaceutical Sciences at the University of Douala. All information collected from practitioners were not disclosed. Participation by practitioners was voluntary. An informed consent form containing information about the objectives and methods used for our study was given to participants before the survey began. The selected medical records were analyzed and the data relevant to our study was transferred to individual anonymous survey forms in order to maintain data confidentiality. Patients whose files did not contain all the information necessary for our study were contacted in order to complete the questionnaires. The data collected on our forms were entered and analyzed using Epi Info software version 7.2.2.0. The graphs were created using Microsoft® Office Excel 2016 software. The results of our study were presented in the form of tables and figures with comments. The variables of interest were described in terms of numbers and percentages. We performed a bivariate descriptive analysis, which enabled us to determine possible associations between the variables. These relationships were analyzed using cross-tabulation tables in Epi Info version 7.2.2.0 statistical analysis software and statistical

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tests. Possible differences in bivariate analysis were statistically evaluated using a two-way ANOVA test; the significance threshold was 0.05 with a 95% confidence interval. Qualitative data were systematically transcribed without sorting.

RESULTS

- **Characteristics of the study population**

The study included 47 participants, of whom 51 % (n = 24) were male and 49 % (n = 23) female. Dental surgeons accounted for 61.7 % of the sample, while dental technicians represented 38.3 %. More than half of the participants (55.3 %, n = 26) had 3 to 5 years of professional experience, while 29.8 % (n = 14) had less than 3 years of experience (Figure 1).

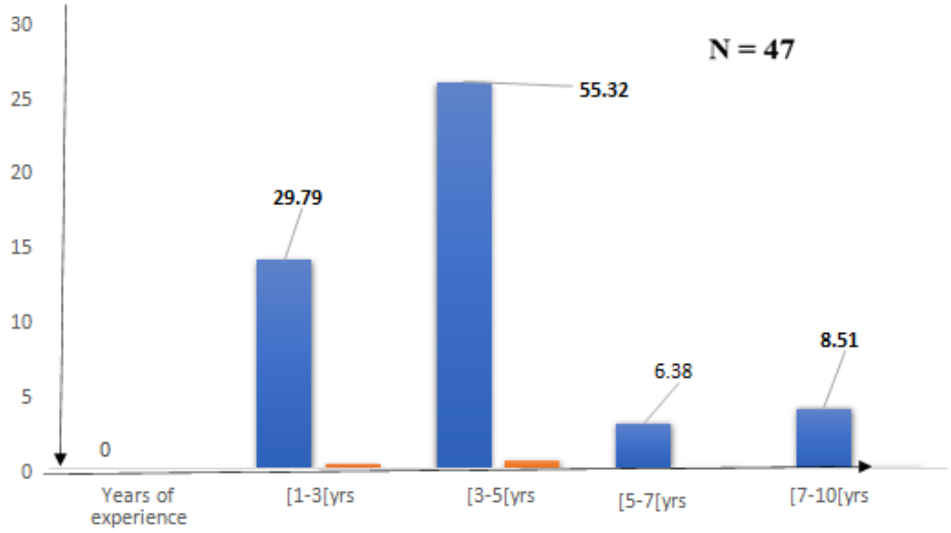

Figure 1. Distribution of participants by years of experience

Table I. Distribution of practitioners by practice setting

Practice setting	N	%
Private dental practice	30	63.8
Public hospital	13	27.7
Clinic	4	8.5
Total	**47**	**100**

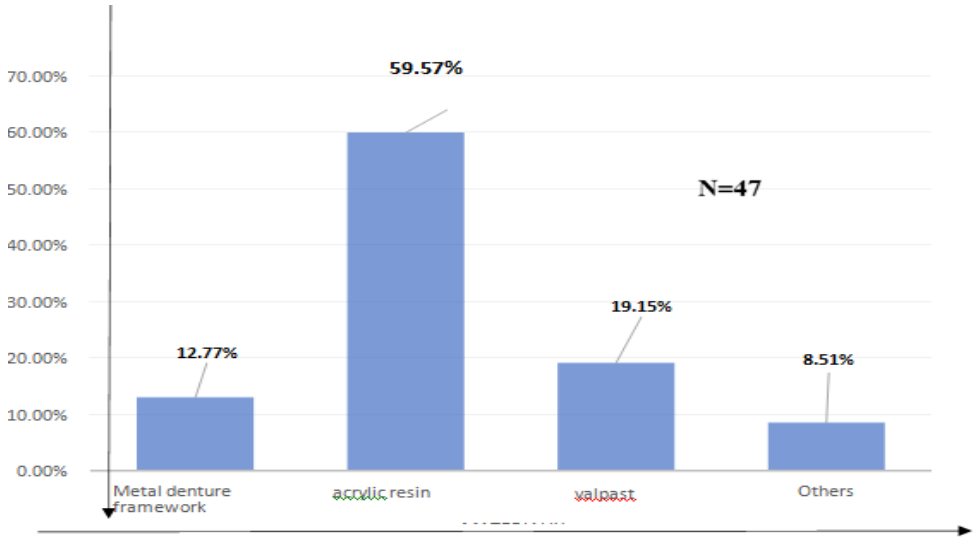

Figure 2. Distribution of practitioners according to the prosthetic material used

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Table II. Distribution of participants by reasons for satisfaction

Reasons for satisfaction	N	%
Prosthesis quality	12	25.5
Affordable prices	10	21.3
Stability / Retention	6	12.8
Prosthesis finishing	5	10.6
Delivery time	3	6.4
Adaptability	2	4.3
Sustainability	1	2.1
Total	**47**	**100**

Table III. Distribution of participants by reasons for dissatisfaction

Reasons for dissatisfaction	N	%
Frequent adjustments needed	18	38.4
Lack of rigidity	10	21.3
Insufficient communication	9	19.1
Poor adherence to recommendations	5	10.6
Frequent patient complaints	4	8.5
Failure to respect return deadlines	1	2.1
Total	**47**	**100**

- **Practice setting and materials used**

The majority of practitioners worked in private practice (63.8 %, n = 30), followed by public hospitals (27.7 %, n = 13) and clinics (8.5 %, n = 4) (Table I). Acrylic resin was the most commonly used material for fabricating removable dentures (59.6 %, n = 28), mainly due to its low cost and availability (Figure 2).

- **Reasons for satisfaction**

The main reasons for practitioner satisfaction were prosthesis quality (25.5 %, n = 12) and affordable prices (21.3 %, n = 10). Stability/retention and prosthesis finishing were cited by 12.8 % (n = 6) and 10.6 % (n = 5) of participants, respectively (Table II).

- **Reasons for dissatisfaction**

The main reason for dissatisfaction was the need for frequent adjustments to the prostheses worn by patients (38.4 %, n = 18). Lack of prosthesis rigidity was also a source of dissatisfaction for 21.3 % (n = 10) of practitioners. Insufficient communication was cited by 19.1 % (n = 9) of participants (Table III).

DISCUSSION

Our study findings indicate that 76.6 % of surveyed practitioners primarily prescribe removable partial dentures (RPDs). Among these, 55.6 % specify acrylic resin as their material of choice, predominantly citing its affordability despite its noted rigidity. This finding is consistent with the results of Goetz et al. [10], who concluded that higher satisfaction among dental surgeons with acrylic RPD production was related to lower frequency of failures in the various phases of execution. A 2022 systematic review by Faye Mansour et al. [11] in Senegal further confirmed that acrylic resin is the most frequently used material for RPDs in public hospitals, notwithstanding established concerns regarding its mechanical strength and the frequent adjustments required. This suggests that while acrylic resin is a widespread choice due to its economic benefits, its inherent limitations likely contribute to practitioner dissatisfaction.

In our investigation, prosthesis quality emerged as the primary satisfaction criterion for 25.5 % of practitioners. This highlights the importance placed on patient comfort, manufacturing precision, material durability, and fit accuracy [3]. This observation is consistent with a 2022 study by Assi et al. [12], where 27 % of the sample also ranked quality as their top evaluation criterion, with a particular focus on the finishing and longevity of prostheses. These data confirm that quality is a dominant factor influencing laboratory selection and plays a significant role in fostering practitioner loyalty to a prosthetist [3].

Furthermore, our research revealed that 68.1 % of dentists in Douala expressed dissatisfaction with RPDs. The main reason was the frequent need for adjustments (38.4 %), stemming from issues such as the use of overly rigid materials, misinterpretation of prescriptions, and insufficient communication with prosthetists [5]. These findings align with the work of Teodorescu C et al. [13] in Romania (2022), which showed that over 60 % of practitioners were dissatisfied, primarily due to poor finishing quality, lack of feedback from prosthetists, and patient complaints. Similarly, Assi et al. [12] in Ivory Coast (2021) emphasized that practitioner-prosthetist collaboration is a critical determinant of successful RPD outcomes. The need for frequent adjustments highlights deficiencies in the technical process and communication between dental practitioners and dental prosthetists. Enhancing collaboration and focusing on higher-quality materials and processes are essential for improving outcomes and increasing practitioner satisfaction with RPDs [11].

By comparing the expectations of dentists, dental technicians, and patients before and after treatment with new removable complete dentures, Marachlioglou et al. [14] concluded that patients had higher expectations than dentists and dental technicians. Dentists believed that dentures offer fewer benefits than patients thought.

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These results may indicate a negative predisposition among dental practitioners towards this type of denture, and the fact that 62 % of practitioners supported the introduction of acrylic RPDs into the list of procedures is probably explained by the fact that they have no other treatment options for users.

In our study, the main reason for dissatisfaction among participants was the rigid material (21.3 %, n = 10). Goetz et al. [15] studied the impact of extrinsic factors (e.g., hygiene, occupational safety, salary, and working conditions) and intrinsic factors (e.g., recognition and responsibility) on job satisfaction among professionals. They concluded that both groups of factors were important, but the opportunity to utilize one's skills had the most positive impact on personal satisfaction. This conclusion is consistent with the results of the present study, which found that the greater the satisfaction of dental surgeons with acrylic RPD production, the fewer failures occurred in the various execution phases. Indeed, when people are motivated to do a job, they are more likely to succeed.

Our research showed that 55.3 % (n = 26) of participants had 3 to 5 years of experience. Kimoto et al. [16] verified the relationship between the prosthetic experience of dental surgeons and the satisfaction of denture users, showing that clinical experience with dentures influences user satisfaction, and emphasizing that users also perceive this when evaluating professionals' experience. This is mainly due to better performance, more developed technical skills, higher professional qualifications, and better relationships with patients.

In a critical analysis of long-established "dogmas" or truths in dentistry based on systematic reviews and randomized clinical trials, Carlsson et al. [17] concluded that, when it comes to achieving user satisfaction, compliance with technical and anatomical requirements in the preparation of complete dentures is less important than psychological factors affecting the patient and the personality of the dentist.

CONCLUSION

This study highlights that acrylic resin remains the material of choice for removable partial dentures in Douala, primarily for economic reasons. While practitioners value prosthesis quality and affordability, a substantial proportion express dissatisfaction, mainly due to frequent adjustments needed and the rigidity of acrylic resin. These findings underscore the need for better communication between dental surgeons and prosthetists, improved practitioner training, and exploration of more durable materials. Addressing these issues could enhance both practitioner and patient satisfaction and improve overall prosthodontic outcomes in resource-limited settings.

Study Limit

This study has several limitations. First, the small sample size (n = 47) limits the generalizability of findings to all dental practitioners in Douala and Cameroon. Second, the cross-sectional design captures satisfaction at a single point in time and does not account for changes in practitioner experience or material preferences over time. Third, the study relied on self-reported data, which may introduce recall or social desirability bias. Fourth, patient perspectives were not assessed, yet they are essential for a comprehensive evaluation of prosthodontic success. Finally, the study did not evaluate the clinical longevity or mechanical performance of the prostheses themselves.

Author's contributions

All authors read and approved the final manuscript.

- Data analysis, writing and correction of manuscripts: Yann-Chris Eng, Abiala Gislaine, Messina Ebogo, Mboya Marius;
- Protocol drafting, data collection and management: Kwedi Karl, Zing Salomon, Messina Ebogo;
- Choice of subject, drafting of the protocol and draft manuscripts; Feukam André, Mboua Véronique, Abiala Gislaine
- Proofreading and analysis of data: Yann-Chris Eng, Abiala Gislaine, Messina Ebogo, Zing Salomon, Bengondo Charles;
- Choice of methodology, correction of the manuscript, and general supervision: Messina Ebogo, Zing Salomon, Bengondo Charles.

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Declaration of Conflict of Interest

The authors declare that they have no conflicts of interest in relation to this study.

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No funding was received for this study.

Ethics

All participants provided written informed consent. The research was conducted in accordance with current regulations concerning the ethical principles of the Declaration of Helsinki.

The research protocol was approved by Institutional Review Board (IRB) of the Faculty of Medicine and Pharmaceutical Sciences of Douala and the ethical clearance and a research authorization n°84/UDo/FMSP/VDRC/DAASR/ CSD issued. Informed consent was obtained from participants prior to inclusion in the study. Confidentiality and anonymity of the collected data were respected

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