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RESEARCH ARTICLE

A Cross-sectional Study of Self-confidence Differences in Removable Prosthodontic Treatment among Undergraduate Students of a Saudi Dental School

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Abstract:

Background:

Removable denture treatments remain an option for the edentulous population in terms of oral rehabilitation. In dentistry schools, improving students' self-confidence in performing prosthodontic procedures should be paramount.

Objectives:

The aim of this study was to examine students' self-confidence perceptions in performing removable partial dentures (RPDs) and complete dentures (CDs) treatments and to draw attention to the steps in which they felt most and least prepared to do so without close supervision.

Methods:

This cross-sectional study was conducted at one dental school in Saudi Arabia at the end of the 2022-2023 academic year. A total of (n=96) undergraduate students in their clinical years, 5th and 6th cohorts, were included in this study. These students were requested to participate in a closed questionnaire consisting of 38 items that focused on self-reported confidence and the perceived quality of their education. A non-parametric test, the Mann-Whitney U-test, was used to compare between groups. The data were analyzed using IBM SPSS Statistics (V.28.0).

Results:

A response rate of 95.8% was achieved. Over the course of their studies, students' sense of confidence grew. Also, males were more confident than females in performing all clinical procedures. Overall, students were satisfied with their prosthodontic education, except for pre-clinical sessions and learning materials. Increasing their clinical experience would be most advantageous for boosting their confidence levels.

Conclusion:

The study revealed where students were most and least confident in carrying out removable prosthodontics. Students require supervision during their internship year because they reported average confidence in removable prosthodontic procedures. The results also point to the need for more research into the confidence gaps between males and females. The pre-clinical curriculum necessitates updating and more didactic teaching.

Keywords: Removable prosthodontics, Dental education, Self-confidence, Curriculum, Clinical training, Undergraduate students.

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1. INTRODUCTION

The number of patients with missing teeth is steadily falling globally [1]. This trend is anticipated within the Saudi population, but it is unlikely that the edentulous or partially

edentulous condition will fade [2]. A study conducted among 1779 individuals aged 35-74 in the south of Saudi Arabia found that 50% were in need of dental prostheses [3]. Another study was conducted in the northern region of Saudi Arabia to assess the dental prosthetic situation and prosthodontic demands of geriatric patients. They found that out of 286 edentulous patients, approximately 70% required some form of prosthodontic treatment [4]. The inability to eat, speak, and smile confidently are just some of the daily struggles that

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people with missing teeth face [5]. A plethora of research has highlighted and discussed the current explosion of options for prosthodontic materials and treatments. Contemporary developments in dentistry have transferred the emphasis to implant-supported restorations for tooth replacement [6 - 8]. The drawbacks of high expenses, surgical challenges, and intricacy associated with implant-supported prostheses may explain why conventional removable dentures continue to be a common treatment for restoring missing teeth around the globe [9]. However, removable dentures are still the best choice if the patient prefers them, the remaining oral tissues are in poor condition, or the expense of other alternative treatments is much higher [10]. As a result, the necessity for removable denture clinical skills and the teaching of dental undergraduates to deliver optimum prostheses will persist for the foreseeable future [11, 12]. The success of a removable prosthesis relies significantly on its mechanical and biological considerations during execution [13]. Ingenious prostheses lessen the chance of dental diseases such as caries or periodontal disease evolving in the abutment teeth while also improving the probability of patient toleration. Therefore, dental graduates should feel confident constructing dental prostheses effectively to meet patients' needs and maintain their oral health and well-being. In Saudi Arabia, the Saudi Commission for Health Specialties (SCFHS) provides the curriculum framework and defines the list of essential competencies for undergraduate dental programs. In order to practice dentistry in Saudi Arabia, undergraduates must pass the Saudi Dental Licensure Examination (SDLE) during their internship year. The SCFHS-mandated test includes substantial removable prosthodontics components [14]. While students may learn the fundamentals of a topic *via* didactic instruction, it won't give them the self-assurance they need to practice the skill successfully in real-world clinical situations. Similar to other clinical dentistry procedures, teaching students how to deliver removable prosthodontics requires demonstration and practice to provide a firm grasp of both theoretical knowledge and clinical skills. Few studies have examined the preparedness of undergraduate students to perform removable prosthodontic treatments. Previous studies conducted in dental institutions in Europe and the United Kingdom have revealed that undergraduates have a high degree of self-confidence to perform the majority of clinical removable prosthodontic procedures and treatments [11, 12]. However, various teaching methods and pedagogical norms may affect the confidence and competence of undergraduates [11, 12]. The concept of confidence entails relying on oneself and, more specifically, one's ability to execute tasks proficiently or at least appropriately with less supervision [15]. Moreover, previous research conducted in the area of dentistry education has yielded findings indicating that male dental students exhibit a higher level of confidence when it comes to executing prosthodontic dental treatments [12]. Removable prosthodontics is not exempt from the requirement that curricula undergo periodic evaluation to ensure their viability and credibility. Also, graduating dental students are the main target group for higher education programs; therefore, monitoring and adjusting dental curricula to ensure an appropriate combination of theory and clinical training is of paramount importance. The purpose of this study is to use the findings to inform a curriculum review and development for a

removable prosthodontics course. Providers of dental education must prepare graduates to be confident, competent, and ready for internship training, in addition to ensuring that they have met all course-mandated learning outcomes. In general, dental prosthesis education is covered during Years 4-6. The removable prosthodontics curriculum at the Faculty of Dental Medicine of the University of Umm Al-Qura uses a standardized approach that combines pre-clinical and clinical instruction. The education on removable prosthodontics is contained in the following three curricular units:

- Pre-clinical removable prosthodontics (fourth year of the BDS curriculum) It includes theoretical lectures, practical sessions, tutorials, and fundamental laboratory skills for removable partial and complete denture treatments.
- Clinical removable prosthodontics (fifth year of the BDS curriculum). It includes theoretical lectures, tutorials, and practical sessions covering laboratory techniques for dentures. Also, students collaborate in small groups, completing simple complete and partial denture treatments under supervision.
- Clinical removable prosthodontics for the elderly (the sixth year of the BDS curriculum). It includes theoretical lectures, chairside instruction, interactive sessions, and self-directed learning (SDL) presentations, with students working in small groups and receiving supervised treatments. To be eligible for graduation, students must have treated at least three patients in year 5 who required a prosthesis, with a minimum of two requiring removable partial dentures along with one requiring complete dentures, and at least four patients in year 6 who required a prosthesis, with at least two requiring removable partial dentures and one requiring complete dentures, plus one special case, such as an overdenture, single denture, immediate denture, or flat ridge case. The aim of this study was to examine students' confidence perceptions in performing RPD and CD treatments and to draw attention to the steps in which they felt most and least prepared to do so without close supervision. The following objectives were set for this research in accordance with these presumptions: To find out whether year of study and gender have a bearing on perceived self-confidence in RPD and CD clinical procedures. To evaluate the undergraduate dental students' perceived quality of removable prosthodontics curriculum and instruction.

2. MATERIALS AND METHODS

2.1. Ethical Approval

Prior to conducting the research, the Umm Al-Qura University Research Ethics Committee granted full ethical approval No. (HAPO-02-K-012-2022-11-1292). All participants signed the study consent before participating in the study.

2.2. Study Design and Sample Population

This cross-sectional research was conducted at the Faculty of Dental Medicine of Umm Al-Qura University, Makkah, Saudi Arabia, at the end of the academic year 2022-2023 to ensure that students accomplished clinical requirements. Convenience sampling of all dental undergraduates (n = 96) enrolled in clinical years 5 (n = 44) and 6 (n = 52) invited to participate and respond to the questionnaire. There were no criteria for exclusion. To determine the minimum sample size for the study, the Raosoft online sample calculator was used. With a margin of error of 5%, a confidence interval of 95%, a response distribution of 50%, and a population of approximately 96, the recommended sample size was 77 subjects.

2.3. Data Collection

Printed questionnaires were distributed at scheduled removable prosthodontics lectures to collect data. The questionnaire consisted of four sections, as follows:

Section 1: Participants' information sheet and consent form statements.

Section 2: Three demographic questions related to the respondent's gender, age, education level, and year of study.

Section 3: Thirty-two items intended to measure the confidence level of the student during the undertaking of prosthodontic clinical procedures were adopted from previously validated questionnaires [11, 12]. Students had to score those items for each item using a scale ranging from 1 to 5, as follows: 1 ("not confident"), 2 ("little confident"), 3 ("confident"), 4 ("very confident"), and 5 ("totally confident").

Section 4: Six items aim to self-rate the perceived quality of removable prosthodontic education using a 5-point scale. Students scored those items using a scale ranging from 1 to 5, where 1 indicates "bad," 2 "mediocre," 3 "sufficient," 4 "good," and 5 "very good." This section concluded with a question about the source of course learning and education. Examples of questionnaire items are provided in Appendix 1.

2.4. Data Analysis

The questionnaire data on self-confidence and the quality of prosthodontic education were analyzed using IBM SPSS Statistics for Windows V.28 (SPSS Inc., Chicago, IL, USA). To investigate the categorical data, descriptive statistics was computed. The Mann-Whitney U test, a non-parametric test, was used to assess the continuous data.

3. RESULTS

3.1. Demographics

The response rate was 95.8%, with 92 students completing the survey. This included 46.7% (n = 44) of Year 5 students and 53.3% (n = 52) of Year 6 students. The ages of the participants ranged from 21 to 26 years old. Forty percent of respondents were male, while 59.8% were female.

3.2. Self-perceived Confidence between the Year Groups

The analysis of the students' self-confidence levels was based on the median value so as to dilute the effect of potential outliers. Most 5th- and 6th-year students felt "confident" or "less confident" in undertaking prosthodontic procedures for both removable partial and complete dentures (Table 1). "Survey and design," "maintenance and repair for RPD," "recording jaw relation for CD," "maintenance and repair for CD," "immediate denture prosthesis," "single complete denture prosthesis," "over-denture prosthesis," and "neutral zone impression" were the clinical situations in which students lacked confidence and required full supervision (median scores were < 3). In contrast, diagnostic appointments for both RPD and CD had the highest levels of confidence (median scores were > 3) (Table 1). Considering RPD clinical procedures, sixth-year students were substantially more confident than 5th-year students in performing "diagnostic appointments," "establishing occlusal relationships," and "selecting artificial teeth and try-in" (P = 0.024, P = 0.024, and P = 0.013, respectively). Regarding CD clinical procedures, 6th-year students were significantly more confident in performing "final impressions" and "try-in procedures" than 5th-year students (P = 0.024 and P = 0.006, respectively) (Table 1).

Table 1. Students' perception of confidence when performing each stage of RPD and CD treatments: 5th year dental students (n = 43) and 6th year dental students (n = 49).

| Clinical Procedures of (RPD) | 5 th -year Dental Students | | 6 th -year Dental Students | | P value |
|--|---------------------------------------|----------------|---------------------------------------|--------------|---------|
| | Mean (SD) | Median (IQR) | Mean (SD) | Median (IQR) | |
| Diagnostics appointment and primary impressions | 3.41 (0.87) | 3.33 (1.33) | 3.78 (0.75) | 4 (1) | 0.024* |
| Survey and design | 2.54 (0.92) | 2 (1) | 2.21 (0.97) | 2 (1.5) | 0.085 |
| Mouth preparations and 2 nd impressions | 2.93 (0.97) | 3 (1.5) | 3.32 (0.99) | 3.5 (1.5) | 0.058 |
| Fitting the framework | 2.7 (1.08) | 3 (1) | 3.12 (1.2) | 3 (2) | 0.084 |
| Establishing occlusal relationships | 2.49 (1.24) | 2 (1) | 3 (1.19) | 3 (2) | 0.024* |
| Selecting artificial teeth and try-in | 2.67 (0.83) | 2.5 (1) | 3.19 (1) | 3 (1.5) | 0.013* |

(Table 1) contd....

| Clinical Procedures of (RPD) | 5 th -year Dental Students | | 6 th -year Dental Students | | P value |
|---|---------------------------------------|----------------|---------------------------------------|---------------|---------|
| | Mean (SD) | Median (IQR) | Mean (SD) | Median (IQR) | |
| Delivering the RPD | 3 (1.11) | 3 (2) | 3.47 (1) | 3 (2) | 0.094 |
| Maintenance and repair | 2.29 (0.87) | 2.5 (1.5) | 2.42 (0.85) | 2.5 (1) | 0.506 |
| Overall | 2.81 (0.71) | 2.78 (0.93) | 3 (0.67) | 3 (0.93) | 0.050* |
| Clinical procedures of (CD) | | | | | |
| Diagnostics appointment and primary impressions | 3.4 (0.78) | 3 (1) | 3.7 (0.78) | 4 (1) | 0.054 |
| Final impressions | 3.18 (1) | 3.33 (1.5) | 3.66 (0.9) | 3.5 (1.5) | 0.024* |
| Recording jaw relation | 2.76 (1) | 2.5 (1.5) | 2.88 (1.11) | 2.5 (1.5) | 0.573 |
| Selecting artificial teeth and try-in | 2.93 (0.88) | 3 (1) | 3.48 (0.97) | 3.5 (1.25) | 0.006* |
| Fitting the CD | 3.37 (1) | 3 (1) | 3.63 (0.97) | 3 (2) | 0.212 |
| Maintenance and repair | 2.41 (0.86) | 2.33 (1) | 2.53 (0.84) | 2.33 (1) | 0.414 |
| Overall | 2.98 (0.75) | 2.84 (0.92) | 3.27 (0.72) | 3.15 (1) | 0.029* |
| Other procedures | | | | | |
| Immediate denture prosthesis | 1.88 (1) | 2 (1) | 2.22 (1) | 2 (2) | 0.076 |
| Single complete denture prosthesis | 2.12 (1) | 2 (2) | 2.76 (0.99) | 3 (1) | 0.003* |
| Over-denture prosthesis | 1.72 (0.95) | 1 (5, 1) | 1.76 (0.85) | 2 (1) | 0.651 |
| Neutral zone impression | 1.93 (0.96) | 2 (2) | 1.94 (1.1) | 2 (1) | 0.758 |

Note: SD, Standard Deviation, IQR, Interquartile Range, break/> *Significant P-values < 0.05.

3.3. Self-confidence Levels between Male and Female Students

There was a difference between males and females in their confidence to conduct the procedures. The responses are aggregated by gender, as shown in Table 2. The most significant differences were in the RPD-related clinical stages of “survey and design,” “mouth preparations and 2nd

impressions,” and “maintenance and repair” (P = .025, P = 0.003, and 0.002, respectively; Table 2). In addition, there were significant sex differences in CD-related procedures for the following clinical steps: “recording jaw relation,” “fitting the CD,” and “maintenance and repair,” with male students feeling more confident than female students (P = 0.004, P = 0.001, and P = 0.011, respectively) (Table 2).

Table 2. Comparison of the different types of participants with respect to their gender: female (n = 55) and male (n = 37).

| Clinical Procedures of (RPD) | Female | | Male | | P value |
|--|----------------|----------------|----------------|--------------|---------|
| | Mean (SD) | Median (IQR) | Mean (SD) | Median (IQR) | |
| Diagnostics appointment and primary impressions | 3.41 (0.87) | 3.33 (1.33) | 3.78 (0.75) | 4 (1) | 0.024* |
| Survey and design | 2.54 (0.92) | 2 (1) | 2.21 (0.97) | 2 (1.5) | 0.085 |
| Mouth preparations and 2 nd impressions | 2.93 (0.97) | 3 (1.5) | 3.32 (0.99) | 3.5 (1.5) | 0.058 |
| Fitting the framework | 2.7 (1.08) | 3 (1) | 3.12 (1.2) | 3 (2) | 0.084 |
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| Selecting artificial teeth and try-in | 2.67 (0.83) | 2.5 (1) | 3.19 (1) | 3 (1.5) | 0.013* |
| Delivering the RPD | 3 (1.11) | 3 (2) | 3.47 (1) | 3 (2) | 0.094 |

(Table 2) contd.....

| Clinical Procedures of (RPD) | Female | | Male | | P value |
|---|----------------|----------------|----------------|---------------|---------|
| | Mean (SD) | Median (IQR) | Mean (SD) | Median (IQR) | |
| Maintenance and repair | 2.29 (0.87) | 2.5 (1.5) | 2.42 (0.85) | 2.5 (1) | 0.506 |
| Overall | 2.81 (0.71) | 2.78 (0.93) | 3 (0.67) | 3 (0.93) | 0.050* |
| Clinical procedures of (CD) | | | | | |
| Diagnostics appointment and primary impressions | 3.4 (0.78) | 3 (1) | 3.7 (0.78) | 4 (1) | 0.054 |
| Final impressions | 3.18 (1) | 3.33 (1.5) | 3.66 (0.9) | 3.5 (1.5) | 0.024* |
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| Overall | 2.98 (0.75) | 2.84 (0.92) | 3.27 (0.72) | 3.15 (1) | 0.029* |
| Other procedures | | | | | |
| Immediate denture prosthesis | 1.88 (1) | 2 (1) | 2.22 (1) | 2 (2) | 0.076 |
| Single complete denture prosthesis | 2.12 (1) | 2 (2) | 2.76 (0.99) | 3 (1) | 0.003* |
| Over-denture prosthesis | 1.72 (0.95) | 1 (5, 1) | 1.76 (0.85) | 2 (1) | 0.651 |
| Neutral zone impression | 1.93 (0.96) | 2 (2) | 1.94 (1.1) | 2 (1) | 0.758 |

Note: SD, Standard Deviation, IQR, Interquartile Range *Significant P-values < 0.05.

3.4. Perception of Quality of Teaching

The evaluation of the perceived quality of prosthodontic education concentrated on six distinct elements: the course and curriculum contents (including the course list of topics and components), theoretical lectures (classroom lectures given to

the entire cohort throughout the academic year), pre-clinical classes (teaching of technical and practical skills), clinical training (direct chair-side instructing in clinical settings with patients), and learning resources (including lecture handouts and additional reading materials).

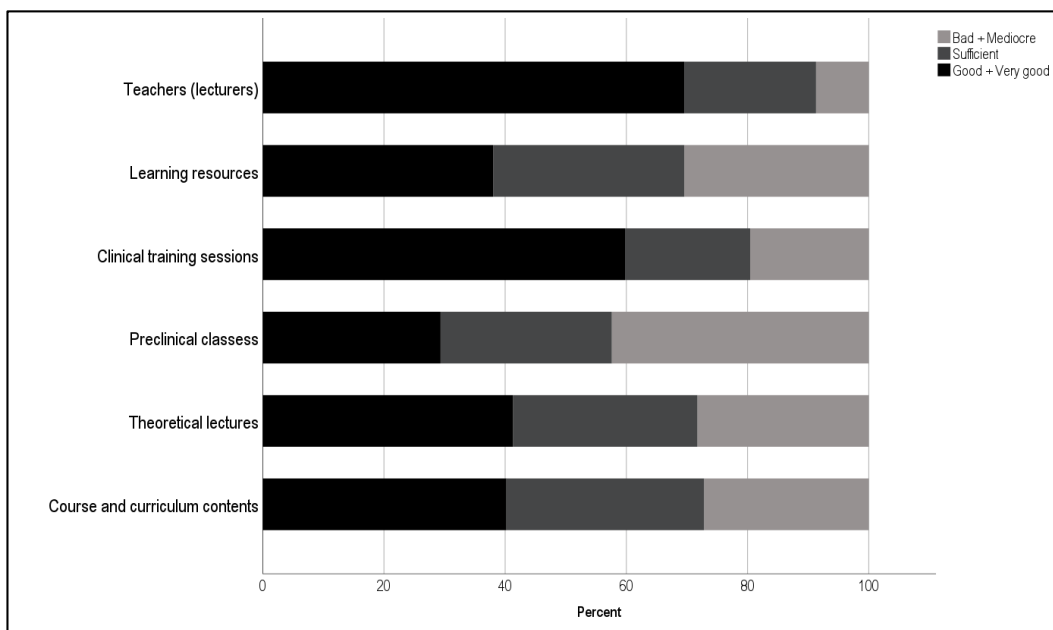


Fig. (1). Perceived quality of various components of prosthetic education.

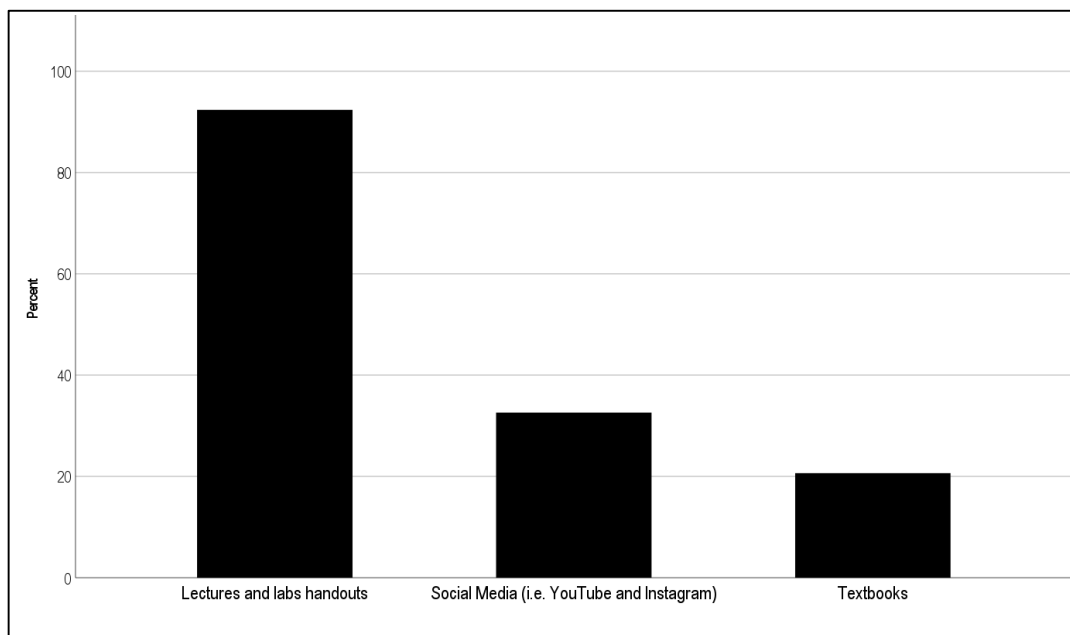


Fig. (2). Percentages of sources for studying the course.

Most students (80.4%) rated the clinical sessions as “sufficient,” “good,” or “very good,” and a higher percentage of students (91.3%) evaluated the teacher's performance as “sufficient,” “good,” or “very good.” Positive evaluations were also given to the perceived quality, of course, topics, theoretical lectures, and learning resources, with 72.8%, 71.7%, and 69.5%, respectively, rated as “sufficient,” “good,” or “very good.” Pre-clinical sessions had the lowest rated categories, with 70.65% of students rating them as “sufficient,” “mediocre,” or “bad.” (Fig. 1). More than ninety percent of students stated that they used lectures and lab handouts as the main sources for studying the course (Fig. 2).

4. DISCUSSION

The purpose of this study was to investigate dental undergraduates' self-reported levels of confidence when performing prosthodontic treatments and their impressions of the quality of prosthodontic instruction they received.

The 5th- and 6th-year students felt “confident” and “a little confident” in their ability to perform most removable prosthodontic procedures except for some procedures such as “diagnostics appointment and primary impressions for both RPD and CD” and “fitting the CD.” The clinical procedures with the lowest confidence scores were “survey and design of the RPD,” and “maintenance and repair for both RPD and CD.” Several studies have produced comparable findings [11, 12]. The possible explanation is that these clinical procedures were presented in theoretical lectures and taught in the pre-clinical sessions of the fourth year but not implemented in actual clinical settings until the fifth year, when they commenced clinical prosthodontics. Therefore, a potential knowledge gap between laboratory and clinical practice is anticipated. Moreover, the issue with RPD surveying and design is not novel, and its implications extend to dental graduates [16]. Multiple studies of the attitudes and capabilities of dentists have already identified this as a significant issue [17, 18]. In

clinical practice, this ends up resulting in inadequate treatment and prosthesis planning, the absence of mouth preparation on master castings, and the frequent creation of RPD frameworks by dental lab technicians. It is uncertain whether this problem is predominantly education-related, and it is not the purpose of this study to address this specific issue. In contrast, the previous study confirmed suboptimal knowledge among undergraduate dental students regarding the RPD's design [19].

The clinical procedures “immediate denture prosthesis,” “single complete denture prosthesis,” “over-denture prosthesis,” and “neutral zone impression” were anticipated to receive the lowest confidence scores. Students' lack of confidence in these areas may be due to their dearth of clinical experience, which is consistent with the findings of previous research [11, 12]. Al-Koky' *et al.* study provided additional evidence that repeating a procedure enhances not only students' performance efficacy but also their confidence [20]. Consequently, a lack of confidence in performing these procedures may result from insufficient practical experience and/or a small number of clinical cases. However, a recent study concluded that the quantity of performed procedures alone should not be used to make reliable decisions regarding a dental student's competency to execute direct restorations and that sufficient practical abilities are necessary [21].

Males exhibited greater confidence than females in clinical removable prosthodontic procedures, as shown in Table 2. The possible reason is that male students, who have been socialized within a patriarchal Saudi culture, may have more proficiency in self-expression, active engagement in practicum experiences and courses, and successful communication with patients, patients' families, and faculty members. This phenomenon has the potential to enhance one's overall self-confidence. Several previous studies have discovered a gender disparity in self-reported confidence [12, 20, 22]. A cross-sectional study of undergraduate students performing removable prosthodontic

treatment in Portugal revealed that females were significantly less confident and relied more on instructors and clinical teachers than males [12]. A similar finding was reported in a UK study examining the confidence of students performing crown and bridge prosthodontic procedures [20]. The gender differences in confidence to conduct removable prosthodontic procedures were intriguing and warranted further dental education contemplation. The higher scores of males may be attributable to their greater self-efficacy and confidence in learning clinical skills. Self-efficacy belief refers to a student's subjective estimation of his or her capacity to complete tasks and achieve objectives. Students with high self-efficacy undertake difficult duties more readily than those with low self-efficacy. Self-efficacy beliefs also predict how students will evaluate their performance and the amount of effort they will exert to complete the task [23]. Another possible explanation is that females have a greater apprehension of dental procedures than their male counterparts, which could also be a contributing factor. Due to gender norms, males may tend to conceal their fears, which may contribute to this trend [24]. This particular issue exhibits a high level of curiosity and warrants more investigation in future scholarly inquiries.

The purpose of the second section of the questionnaire was to assess the students' perceptions of the quality of education in removable prosthodontics. The list of evaluated criteria (Fig. 1) was not comprehensive but rather simplified to reduce the amount of time required for completion. Surprisingly, the majority of students rated the quality of prosthodontic education as "very good," "good," or "sufficient" in the vast majority of assessed categories. Previous studies reported comparable outcomes when reviewing the efficacy of prosthodontic education [12]. Only two components, lecturer performance and clinical training sessions, were rated by more than 50 percent of students as "good" or "very good." The possible justification is our dental school's adequate teacher-student ratio of 1:5, which plainly enhances the quality and efficacy of chairside instruction [25]. On the other hand, undergraduates rated learning resources and pre-clinical sessions the lowest. Regarding learning resources, students were instructed to study primarily from assigned textbooks [1].

However, as shown in Fig. (2), they preferred to study mainly using lecture materials, which the majority of lecturers did not provide in accordance with dental school regulations. This may explain why the learning resources category has such a low rating. A previous multi-national empirical study among dental students corroborated this assumption; they found that 44.7% obtained course materials from electronic notes from the instructors, whereas 20.3% reviewed assigned textbooks [26]. It was not surprising to discover that the lowest rate was for pre-clinical sessions. As stated previously, the removable prosthodontics course trains students in laboratory settings with bench-top procedures during the fourth year, with clinical training introduced in the fifth and final year. The primary outcome is to increase manual skills and expertise prior to beginning patient care. Most of their time is devoted to preclinical activities in the lab, where they have no direct patient interaction. A previous study identified certain difficulties undergraduate students experience, namely that preclinical instruction does not permit application in actual

clinical settings and does not employ modern teaching approaches [27]. As an example, clinical simulation, virtual three-dimensional models, procedural recordings, and other forms of technology are some of the solutions that need to be incorporated at this point [28 - 31]. Also, at least in the second half of the fourth year, students could be exposed to clinics in order to integrate practical theories with clinical realities effectively.

This research has limitations that must be considered. The finding of this study only applies to one dental school. Since the clinical and educational experiences of students will vary depending on the course structure and strategies used at their respective institutions, it would be misleading to infer that these conclusions are inherently generalisable. Additionally, the results of this study were obtained from closed-ended questions. Consequently, it was unable to get in-depth views and collect comprehensive data from students. Furthermore, the current study did not investigate psychological factors that might influence dental students' self-confidence. The exploration of psychological factors that impact self-confidence in the context of dental education is a valuable opportunity for future research. Regardless of these limitations, the research offers an updated barometer of dental students' confidence in undergoing prosthodontic treatment. The institution is in the midst of a comprehensive curriculum review by the National Commission for Academic Accreditation and Assessment (NCAAA), and the findings from this inquiry might ultimately influence the direction in which the undergraduate program proceeds in the future. Also, indeed helps educators identify promising avenues for enhancing prosthodontic education.

CONCLUSION

The study identified the areas of removable prosthodontic treatments in which students are least and most confident. Final-year students require supervision during their internship year, as they reported average confidence in certain aspects of removable prosthodontics procedures, including survey and design, maintenance, and repair of both RPD and CD, as well as other advanced treatments such as immediate dentures and overdentures. The results also point to the need for more research into the confidence gaps between males and females. Students rated the quality of their removable prosthodontics education as "sufficient," "good," and "very good" for the majority of evaluated elements. It appears essential to revise pre-clinical curricula and increase didactic and clinical education.

LIST OF ABBREVIATIONS

| | | |
|-----|---|---------------------------|
| RPD | = | Removable Partial Denture |
| CD | = | Complete Denture |

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

Regarding ethical considerations and the study was approved by the Umm Al-Qura University Research Ethics Committee No. HAPO-02-K-012-2022-11-1292.

HUMAN AND ANIMAL RIGHTS

No animals were used in this research. All human research procedures followed were in accordance with the ethical standards of the committee responsible for human experimentation (institutional and national), and with the Helsinki Declaration of 1975, as revised in 2013.

CONSENT FOR PUBLICATION

written informed consent was provided by all participants.

STANDARDS OF REPORTING

STROBE guidelines were followed.

AVAILABILITY OF DATA AND MATERIAL

The data that support the findings of this study are available from the corresponding author [R.S] upon reasonable request.

FUNDING

None.

CONFLICT OF INTEREST

The authors declare no conflict of interest, financial or otherwise.

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