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Perception and Confidence Levels of Undergraduate Dental Students at Jordan University in Key Dental Procedures and the Impact of Competency Implementation on Their Confidence Levels: Part 2

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Abstract

Background and Purpose: A limited number of studies have assessed the level of confidence among final-year dental students regarding their ability to conduct key dental procedures. This study aims to assess the perception and confidence level of final-year dental students from the School of Dentistry at the University of Jordan to perform essential dental procedures across various dental disciplines and to assess the effect of competencies implementation in curricula on the confidence level of students.

Methods: Two cohorts of final-year dental students answered an electronic questionnaire: one group in 2016 before the implementation of the competency-based assessment system (group 1, n = 153), and the other in 2019 after the implementation of this system (group 2, n = 199). The two groups were compared regarding the degree of confidence in conducting key dental procedures. The data were analyzed using SPSS statistics.

Results: Statistically significant differences were found between the two groups regarding confidence levels in four out of nine endodontic procedures included in this study (anterior teeth root canal treatment (RCT), interpreting the results of vitality tests, placing rubber dam (RD), diagnosing irreversible pulpitis) and in five out of 15 oral surgery procedures considered herein (performing surgical extraction, local infiltration, simple extraction, simple suturing, prescribing medication for acute dental infection). These differences were all in favor of group 1 except for only one procedure (performing surgical extraction).

Conclusion: This study showed that the implementation of a competency-based system at the University of Jordan is largely not useful if not counter-productive with regard to the student's level of confidence when performing endodontic or surgical procedures. The results also showed that dental students generally have high confidence levels in doing simple dental procedures and less confidence in more complex ones. Thus, additional focus on such complex procedures is advised during post-graduation training and before entitlement for practice licensing.

Keywords: level of confidence; key dental procedures; competency-based assessment system; endodontic procedures; oral surgery procedures; dental education

1. INTRODUCTION

Senior dental students should ideally possess the skills to perform root canal treatments effectively. However, several studies have revealed that the majority of root canal procedures performed by undergraduate students are considered suboptimal (Hayes et al., 2001; Khabbaz, 2010; Rafeek et al., 2012). The perceived difficulty and stress associated with endodontics may be attributed to the intricate nature of the root canal system (Seijo et al., 2013). In some research, endodontics has been ranked as the third, and at times, the most challenging dental discipline (Tanalp et al., 2013; Alrahabi, 2017) affecting students' confidence in conducting these procedures. This lack of confidence often stems from inadequate undergraduate training and limited clinical exposure, particularly in root canal therapy for both anterior and posterior teeth (Davey et al., 2015). A survey of predoctoral endodontic directors in the United States and Canada indicated that 36% of their graduates lacked competency in performing molar root canal therapy due to insufficient clinical practice (Woodmansey et al., 2015). Nevertheless, students' confidence tends to increase with more clinical experience; Murray and Chandler found that senior dental students exhibited greater confidence in conducting root canal therapy than their junior counterparts (Murray and Chandler, 2014). This observation aligns with research suggesting that additional cases during undergraduate education can enhance graduates' readiness to independently undertake root canal treatment as general practitioners (Alrahabi, 2017).

In addition to endodontics, oral surgery skills are crucial for newly graduated dentists, who are expected to perform a range of surgical procedures from simple to moderately complex. Studies indicate that newly graduated dentists often face clinical challenges that require them to perform invasive or non-invasive, and sometimes **irreversible** surgical procedures (Hunt and Bushong, 2010). These procedures often involve advanced materials and equipment and must be completed within a limited timeframe, adding significant stress to new graduates as they strive to meet patient needs while developing new skills (Walsh, 1999). The literature reveals that a lack of confidence in oral surgery procedures among dental students can stem from inadequate training and limited opportunities to practice under supervision (Bennani et al., 2014). It is crucial, therefore, to assess the confidence levels of dental students, particularly final-year students, in performing these essential surgical procedures.

A previous study assessed the confidence levels of dental students in prosthodontics and conservative treatment procedures, concluding that final-year students were more confident in performing simple dental procedures. However, their confidence levels decreased with the introduction of a competency-based assessment system (Elmanaseer et al., 2023). While clinical experience is recognized as a key factor influencing students' confidence, integrating competencies into dental curricula is another approach that has shown promise. Despite this, there is limited research evaluating the impact of competency implementation on students' confidence levels in essential dental procedures, particularly as they transition to general practice. Competency-based assessment is widely accepted in dental education (Manakil and George, 2011), and understanding this concept can improve the quality of dental education and the

professional development of dental educators (Chuenjitwongsa et al., 2018).

Confidence levels in students are closely associated with the quality of education and clinical exposure, while competency encompasses evidence-based knowledge, personal attitudes, and clinical skills (Chambers, 1993; Licari and Chambers, 2008; Puryer et al., 2018). Therefore, both competency and confidence should be integral components of undergraduate dental curricula (Gerrow et al., 2007; A.D.C., 2010; Cowpe et al., 2010; A.D.E.A., 2011a, b; Honey et al., 2011).

Assessing dental students' confidence and competence is essential for ensuring their effectiveness as practitioners upon graduation. In Part I of this study (Elmanaseer et al., 2023), we evaluated the confidence levels of fifth-year dental students in various prosthodontic and conservative procedures. In this part, we explore their competence levels in Oral Surgery and Endodontics, comparing the confidence levels of fifth-year students from two different years (2016 and 2019). Notably, competencies were integrated into the curriculum at the Dental School of the University of Jordan starting in the academic year of 2018.

2. MATERIALS AND METHODS

2.1. Study Design

This research was conducted in two phases. The initial stage took place after the academic year 2015/2016, a period when competencies were not integrated into the dental curriculum. During this stage, all fifth-year dental graduates (n = 153) were invited to participate by completing a questionnaire. The second phase occurred at the close of the academic year 2019/2020, following the incorporation of competencies into the curriculum. In this phase, the same questionnaire was administered again via Google Forms to all fifth-year dental graduates (n = 199).

2.2. Population and Sampling

In both phases, the entire population of fifth-year dental students at the University of Jordan was invited to participate. There was no exclusivity or selection of specific subgroups within this population.

2.3. Study Type

The research adopted an observational cross-sectional study design. The primary aim was to evaluate the self-perceived confidence levels of final-year dental students in two distinct periods (cohorts from 2016 and 2019) regarding essential dental procedures. Both groups were required as part of the curriculum to perform eight key procedures in endodontic dentistry training (as specified in Table 1) and twelve key procedures in oral surgery training (as specified in Table 2). In both groups, the student-staff ratio was approximately 8:1, which represents the standard ratio maintained by the Dental School to ensure the adequacy of clinical training and supervision. No interventions or manipulations of variables were performed. The study solely observed and compared the confidence levels between the two groups without employing experimental or quasi-experimental methodologies.

Table 1 Descriptive statistics for Students' response to Endodontic procedures

	Year	N	Mean	Std. Deviation	Std. Error Mean	P-value
Diagnosing irreversible pulpitis	2016	153	4.30	1.033	.084	**0.026**
	2020	194	4.19	1.204	.086	
Diagnosing reversible pulpitis	2016	153	4.27	1.064	.086	0.314
	2020	194	4.22	1.195	.086	
Placing rubber dam	2016	153	4.56	1.012	.082	**0.001**
	2020	192	4.14	1.226	.088	
Root canal retreatment	2016	153	2.68	1.151	.093	0.088
	2020	192	2.88	1.216	.088	
Identifying the need of root canal treatment by peri-apical radiographs	2016	153	3.96	1.180	.095	0.212
	2020	193	3.85	1.229	.088	
Using vitality testing techniques	2016	153	4.08	1.073	.087	**0.017**
	2020	194	3.96	1.197	.086	
Administration of intra-pulpal infiltration	2016	153	3.79	1.151	.093	0.087
	2020	192	3.64	1.307	.094	
Performing posterior teeth root canal treatment	2016	153	3.80	1.177	.095	0.170
	2020	194	3.72	1.095	.079	
Performing anterior teeth root canal treatment	2016	153	4.39	1.089	.088	**0.007**
	2020	194	4.17	1.159	.083	

Table 2 Descriptive statistics for Students' response to Oral Surgery procedures

	Year	N	Mean	Std. Deviation	Std. Error Mean	P-value
Inferior dental nerve block	2016	153	3.86	1.039	.084	0.561
	2020	198	3.64	1.188	.084	
Local infiltration	2016	153	4.63	.817	.066	
	2020	197	4.20	1.278	.091	
Mental nerve block	2016	153	4.10	2.618	.212	0.423
	2020	197	3.84	1.233	.088	
Prescribing medication for acute dental swellings	2016	153	3.10	1.136	.092	**0.027**
	2020	196	2.76	1.101	.079	
Classifying impacted wisdom teeth using orthopantograms	2016	153	3.48	1.107	.089	0.189
	2020	195	3.52	1.216	.087	
Treating a patient with acute dental abcess	2016	153	2.82	1.052	.085	0.676
	2020	197	2.85	1.063	.076	
Extraction of root canal treated remaining roots	2016	153	3.55	1.112	.090	0.351
	2020	198	3.55	1.120	.080	
Using elevators for dental extraction	2016	153	4.03	.996	.081	0.063

	Year	N	Mean	Std. Deviation	Std. Error Mean	P-value
	2020	197	3.74	1.262	.090	
Performing dental extraction for medically compromised patients	2016	153	2.89	1.055	.085	0.323
	2020	198	3.03	1.094	.078	
Doing simple pre-prosthetic surgery	2016	153	2.56	1.202	.097	0.653
	2020	198	2.55	1.133	.081	
Treating a patient with a dry socket	2016	153	2.95	1.152	.093	0.056
	2020	198	3.21	1.159	.082	
Performing simple suturing	2016	153	3.71	1.180	.095	**0.003**
	2020	197	3.44	1.157	.082	
Reflecting a surgical flap	2016	153	2.65	1.232	.100	1.000
	2020	197	2.69	1.201	.086	
Performing simple extraction	2016	153	4.42	.943	.076	**0.035**
	2020	195	4.16	1.278	.092	
Performing surgical extraction	2016	153	2.73	1.165	.094	**0.000**
	2020	197	3.09	1.174	.084	

2.4. Questionnaire Development

The questionnaire was structured based on the fundamental clinical skills and competencies across core dental specialties, including Prosthodontics, Conservative Dentistry, Endodontics, Pediatrics, Oral Surgery, Orthodontics, Periodontics, and Radiology. It comprised eight sections, each corresponding to one of these disciplines, with varying numbers of questions: Prosthodontics (20 questions), Conservative Dentistry (16 questions), Endodontics (9 questions), Radiology (4 questions), Pediatrics (12 questions), Orthodontics (7 questions), Oral Surgery (15 questions), and Periodontics (9 questions). The questions aimed to gauge students' self-confidence levels in performing specific clinical tasks, with responses recorded on a five-point Likert scale (ranging from "extremely confident" to "extremely not confident").

2.5. Ethical Considerations

This study obtained ethical approval from the Institutional Review Board/Deanship of Scientific Research at the University of Jordan (Ref # 9-2019). Participants were informed, through the questionnaire, that their participation was voluntary and that it would not impact their academic grades or performance in any way. To ensure anonymity, no personal identifiers were used in the online questionnaire.

2.6. Pilot Study

Before the main study, a pilot study was conducted on a small sample of dental students to validate and refine the questionnaire's structure and content. Participants from this pilot study were not excluded from the main study.

2.7. Statistical Analysis

The collected data underwent statistical analysis using SPSS version 16. This analysis included descriptive statistics, such as mean value calculation, standard deviation, and standard error of the mean. Levene's Test was employed to assess the equality of variances and to verify normal distribution. Independent t-tests were conducted to

compare Group 1 (the year 2016) and Group 2 (year 2019). The level of statistical significance was set at 0.05. The study did not employ any experimental manipulations.

3. RESULTS

The study involved 352 fifth-year dental students (153 in 2016 (group-1) and 199 in 2019 (group-2)). They rated their confidence level on a five-point Likert scale. The data from both samples were analyzed descriptively using SPSS statistics (Tables 1, 2).

3.1. Students' Confidence Level in Endodontic Procedures

The study assessed the confidence levels of students (above 50%) in nine endodontic procedures. The students were most confident in placing RD, using a vitality test, diagnosing the need for RCT based on PA radiographs, diagnosing reversible and irreversible pulpitis, and performing RCT on anterior teeth. The students were least confident in performing pulpal infiltration and root canal retreatment in both groups. Group 1 (pre-competency group) had significantly higher confidence than group 2 (post-competency group) in four procedures: RCT on anterior teeth (89% vs. 78%, P = 0.007), using vitality test (82% vs. 71%, P = 0.017), placing RD (92% vs. 79%, P = 0.001), and diagnosing irreversible pulpitis (88% vs. 79%, P = 0.027). There was no significant difference between the groups in the other five procedures: diagnosing RCT need with PA (76% vs. 70%), diagnosing reversible pulpitis (86% vs. 82%), RCT on posterior teeth (70% vs. 63%), pulpal infiltration (66% vs. 57%), and root canal retreatment (21% vs. 29%). (Table 1, Figs.1,2).

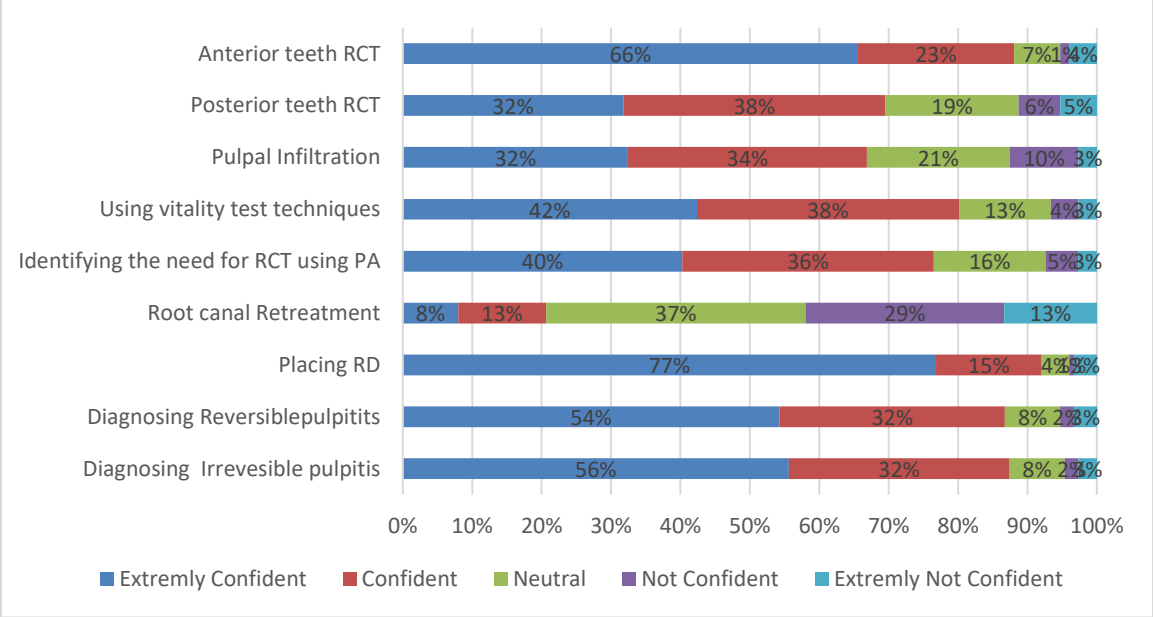

Figure 1 Students' confidence level in endodontic procedures in group 1. (RCT: Root canal treatment, PA: Peri-apical, RD: Rubber dam)

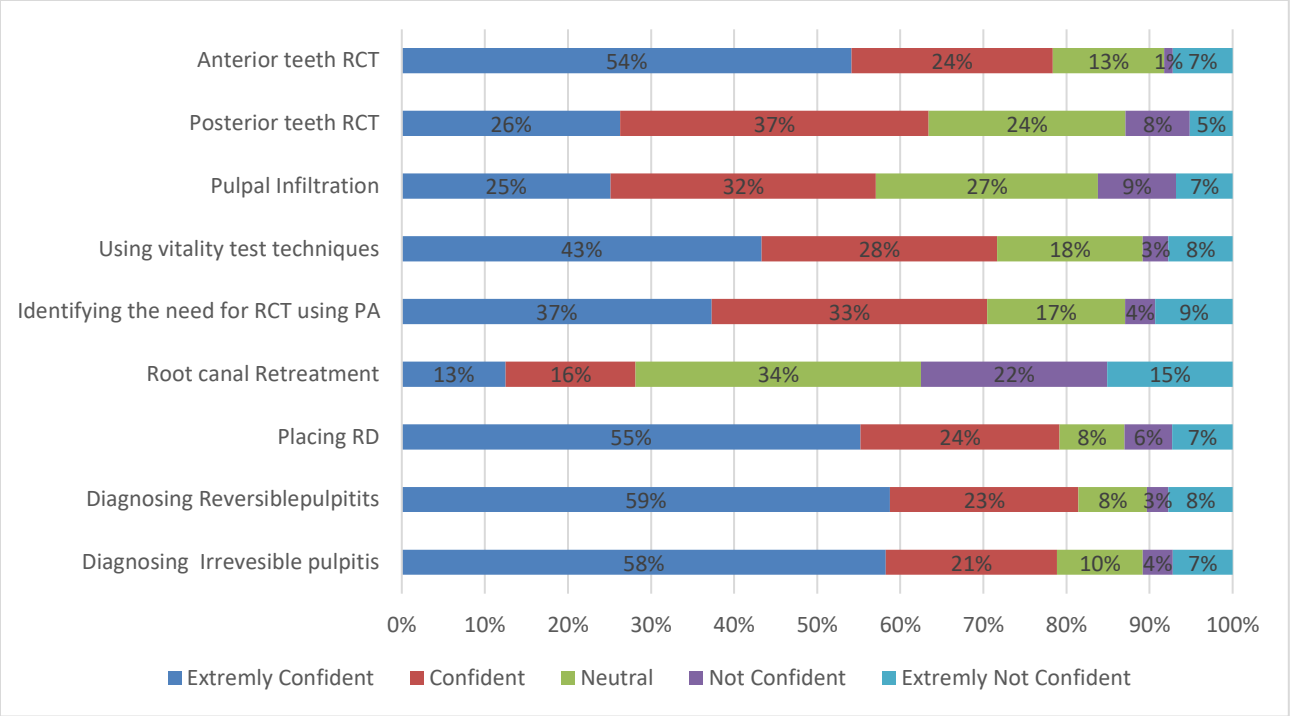

Figure 2 Students' confidence level in endodontic procedures in group 2.

3.2. Students' Confidence Level in Oral Surgery Procedures

The study measured the confidence levels of students in 15 oral surgery/oral surgery-related procedures. The students were most confident in local infiltration and simple extraction. The students were least confident in treating dental abscesses and extraction for medically compromised patients. Group 2 had higher confidence than group 1 in surgical extraction (25% vs. 36%, P = 0.028), where the difference was significant. Group 1 had higher confidence than group 2 in four procedures, where the difference was significant: local infiltration (95% vs. 82%, P = 0.000), simple extraction (90% vs. 82%, P = 0.035), simple suturing (68% vs. 52%, P = 0.003), and prescribing medication for acute dental infection (37% vs. 26%, P = 0.027). There was no significant difference between the groups in the other 10 procedures: using the elevator for extraction (77% vs. 68%), mental nerve block (71% vs. 67%), ID nerve block (66% vs. 63%), classifying impacted wisdom teeth from OPG radiographs (53% vs. 60%), extraction of a remaining root (52% vs. 57%), treating patients with dry socket (32% vs. 42%), doing extraction for medically-compromised patients (30% vs. 35%), treating patients with acute dental abscess (26% vs. 28%), reflecting a surgical flap (25% vs. 25%), and doing simple pre-prosthetic surgery (23% vs. 21%) (Table 2, Figures 3 and 4).

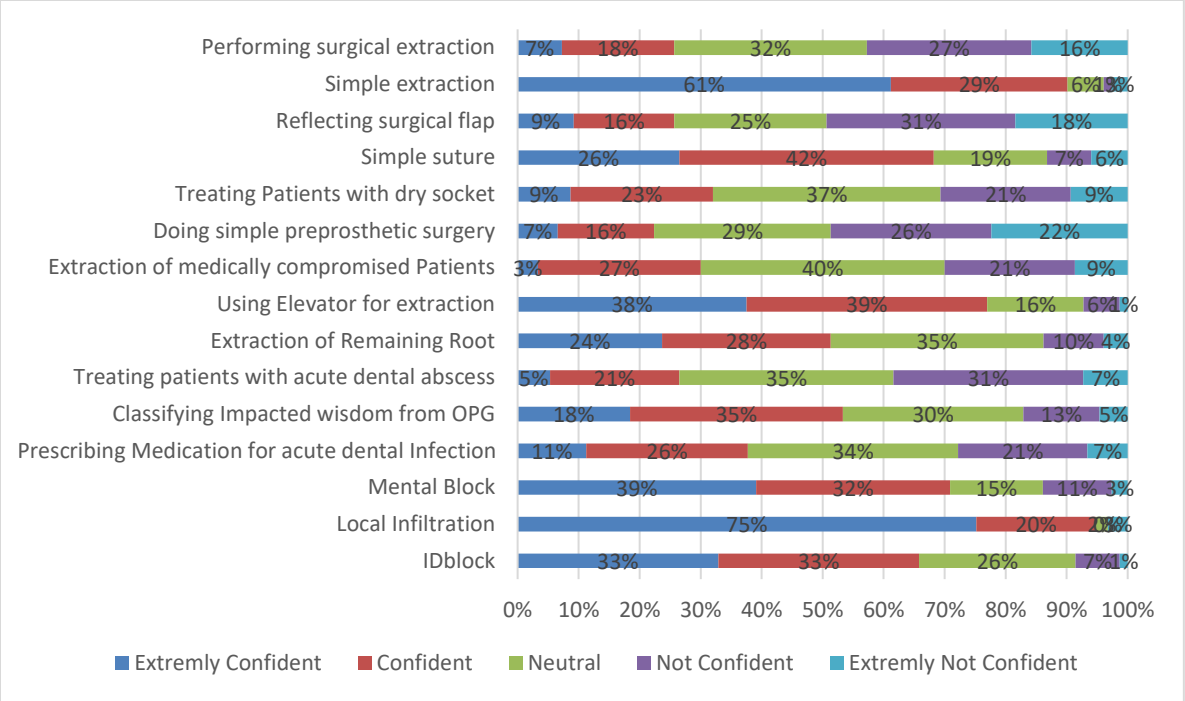

Figure 3 Students' confidence level in oral surgery procedures in group 1. (OPG: Orthopantomogram, ID: Inferior Dental Nerve block)

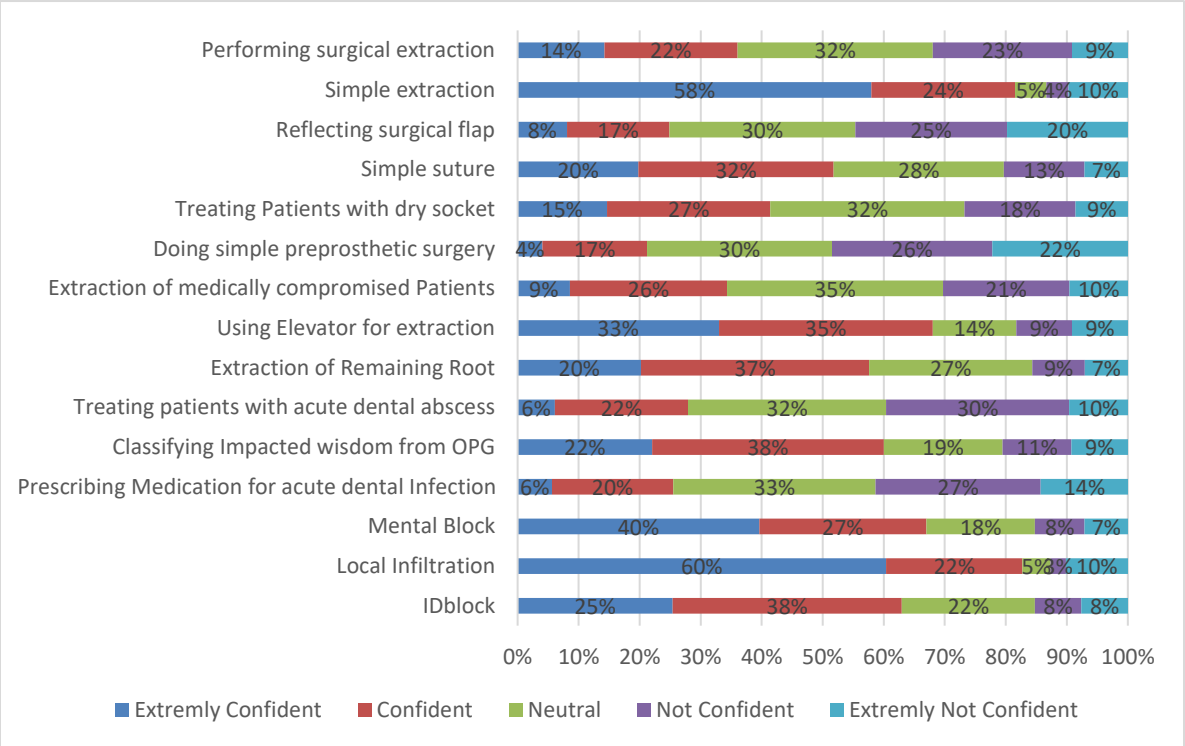

Figure 4 Students' confidence level in oral surgery procedures in group 2.

4. DISCUSSION

This study sought to assess the influence of competency-based education on students' confidence levels in endodontic and oral surgery procedures, both of which are integral to dental practice. A two-stage questionnaire survey was conducted among final-year students at the University of Jordan, spanning the period before (2016) and after (2019) the integration of competencies into their curricula.

Historically, dental education primarily relied on written and oral examinations and the fulfillment of clinical case requirements to assess students' proficiency. However, these assessment methods often fail to capture the crucial factors of students' confidence and competency, which are significant predictors of clinical skills (Mossey et al., 1997; Gilmour et al., 2016; Ali et al., 2017; AlHamoudi et al., 2021).

Competencies were introduced into the undergraduate dental curriculum at the University of Jordan in 2017. The primary requirement for competency was that students independently perform various clinical tasks without supervision. These students were evaluated on a pass-or-fail basis, with no numerical grades assigned to attain competency. Only students who met the competency requirements were allowed to participate in the final clinical exam at the end of the fifth year. It's important to note that this study specifically focused on fifth-year students since most competencies were completed during this year, despite the competency approach being implemented in both the fourth and fifth years.

Questionnaires emerged as a valuable tool in assessing students' perceptions and the effectiveness of novel educational approaches such as competency-based education (Henzi et al., 2005, 2006, 2007; Rolland et al., 2007).

Undergraduate dental students often find performing endodontic treatment to be challenging due to factors such as complex anatomy, diverse and difficult treatment options, inadequate theoretical and practical teaching, and a lack of confidence (De Cleen et al., 1993; Rolland et al., 2007). This study evaluated students' confidence in various endodontic skills, including the placement of a rubber dam, local anesthesia administration, diagnosis from X-rays, use of vitality tests, diagnosing pulpitis, performing root canal treatment on anterior and posterior teeth, and root canal retreatment. The findings revealed that students were generally highly confident (more than 50%) in simpler tasks like placing a rubber dam, diagnosing pulpitis, and conducting root canal treatment on front teeth. They also expressed confidence in using vitality tests and diagnosing from X-rays. However, their confidence levels were notably lower in administering local anesthesia and performing root canal retreatment, both before and after competency implementation. These results are consistent with prior studies (De Moor et al., 2013; Tanalp et al., 2013; Murray and Chandler, 2014; Baaij et al., 2020; Chakradhar et al., 2021; Javed et al., 2021), and underscore the need for students to attain competence and confidence in simpler root canal cases while developing the skills to identify and address complex cases that demand advanced endodontic treatment (Bartlett et al., 2001; Youngson et al., 2007; Cowpe et al., 2010).

Oral surgery, which involves irreversible procedures on hard and soft tissues, presents a significant challenge to undergraduate dental students (Hunt and Bushong, 2010).

This study also assessed students' confidence in a range of surgical skills, including local anesthesia administration, nerve blocks, wisdom tooth identification

from X-rays, prescription of drugs for dental infections, treatment of dental abscesses, suture placement, tooth extraction, management of dry sockets, root removal, surgical flap elevation, tooth extraction for medically compromised patients, mouth preparation for prosthetic devices, and surgical extraction. The findings indicated that students were reasonably confident (more than 50%) in administering local anesthesia and performing tooth extractions, which are relatively straightforward procedures. However, they reported the lowest confidence levels in managing dental abscesses and extracting teeth for medically compromised patients. These findings align with existing research (Al-Dajani, 2015; Bateman et al., 2016; Cabbar et al., 2019) and highlight areas of basic knowledge that require improvement, especially given the rising incidence of hospital cases involving dental abscesses (Murray et al., 1999; Thomas et al., 2008; Cabbar et al., 2019). It's important to note that students' confidence in complex cases tended to improve with increased clinical practice, including internships and postgraduate training (Murray et al., 1999; Honey et al., 2011; Puryer et al., 2018).

To evaluate the impact of competency-based education, we compared the confidence levels in various dental procedures between the 2016 cohort (before competency implementation) and the 2019 cohort. Contrary to expectations, students in 2016 reported significantly higher confidence levels than those in 2019 ($P<0.05$) in several procedures, including root canal treatment for front teeth, vitality tests, rubber dam placement, and diagnosing irreversible pulpitis. These results are surprising, as it might be assumed that the introduction of competency-based education would enhance students' confidence. One possible explanation for this finding is that these procedures are relatively straightforward, and the students in 2016 may have already achieved a sufficient level of competency without the new curriculum framework.

In contrast, students in 2019 exhibited slightly higher confidence levels in managing more complex tasks, such as treating compromised patients, managing dental abscesses, and addressing dry sockets, although these differences were not statistically significant. Notably, a significant difference was observed in confidence levels regarding surgical extraction, with the 2019 group demonstrating greater confidence ($P=0.02$). This suggests that competency-based education may have positively influenced students' confidence in handling more complex oral surgery procedures. These findings align with previous research indicating that well-structured competency-based programs can enhance practical skills and self-assurance in complex clinical situations (Martin et al., 1997; Macluskey et al., 2006; Durham et al., 2007).

The literature supports the notion that proper clinical training, solid preclinical knowledge, and standardized competencies are crucial for improving students' competency and confidence levels (Durham et al., 2007). Furthermore, students must develop the ability to self-evaluate their performance through independent clinical practice and the implementation of appropriate competencies (Kaufman, 2003). The comparison between the two cohorts highlights the importance of continuous curriculum evaluation and the need to tailor educational approaches to maximize student confidence and competence across all aspects of dental practice.

It is crucial to acknowledge that several confounding variables may influence the

interpretation of these findings. Differences in individual aptitude, clinical exposure, and teaching quality could contribute to variations in confidence levels among students. Further research should explore these variables to obtain a comprehensive understanding of the factors affecting students' confidence and competence in dental procedures.

In conclusion, this study provides valuable insights into the impact of competency-based education on dental students' confidence levels in endodontic and oral surgery procedures. While competency appears to have positively influenced confidence in some complex procedures, other factors and confounding variables may also play a role in students' confidence levels. Further research is needed to better understand these dynamics and inform dental education practices.

There are several methods to assess competency including traditional and current methods (Manakil and George, 2011). In this study, the traditional method was used where the students were asked to do a clinical procedure independently and then subjectively evaluated by two supervisors followed by short viva questions to assess the student's knowledge about the evaluated clinical procedure. This method has a major drawback of the subjectivity of supervisors and inflexibility in choosing the competencies as it is already decided in the curricula, and this can be a limitation of the study, although multiple clinical procedures are included in competency assessment. Another limitation is that only fifth-year students are included in this study as they have limited clinical training time, thus it is advisable to include internship trainees in a future study to be able to evaluate the effect of more clinical training on the confidence levels of graduate students.

It is vital to keep evaluating the competencies and the methods used to improve student's skills and confidence levels, and this can be done by adopting a global competency reference for all dental procedures, which is currently missing. Furthermore, novel creative approaches need to be implemented to increase the level of confidence of dental students before graduation. The authors suggest the implementation of extra practice through extracurricular clinical sessions that are not included in the grading system for the students to eliminate stress and where the focus is mainly put on the augmentation of confidence.

5. CONCLUSION

This study has some limitations, but it shows that the University of Jordan dental students did not gain much confidence with competency implementation; however, they were not far behind their peers in other countries. The main pattern observed was that students felt more confident in doing simple dental procedures than complex ones.

Different schools may use different methods to implement and test competencies, which can affect the results. Therefore, it is crucial to regularly review the competencies being assessed to ensure the curriculum stays up-to-date. Additionally, assessment methods should be evaluated regularly to make sure they are still appropriate as the curriculum evolves.

Declaration of competing interest

The authors declare no potential conflicts of interest in the present study.

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مستويات الإدراك والثقة لدى طلاب طب الأسنان في مرحلة البكالوريوس في الجامعة الأردنية في أداء الإجراءات الرئيسية لطب الأسنان وتأثير تنفيذ الكفايات السريرية على مستويات الثقة لديهم: الجزء الثاني

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الملخص

خلفية الدراسة : هناك عدد محدود من الدراسات التي قامت بتقييم مستوى الثقة بين طلاب السنة النهائية في طب الأسنان فيما يتعلق بقدرتهم على إجراء الإجراءات السنية الأساسية. تهدف هذه الدراسة إلى تقييم تصور ومستوى ثقة طلاب السنة النهائية في كلية طب الأسنان في الجامعة الأردنية في أداء الإجراءات السنية الأساسية في مختلف التخصصات السنية، وتقييم تأثير تنفيذ نظام الكفايات السريرية في المناهج على مستوى ثقة الطلاب.

منهجية الدراسة : أجاب مجموعتان من طلاب السنة النهائية في طب الأسنان على استبيان إلكتروني: المجموعة الأولى في عام 2016 قبل تطبيق نظام التقييم القائم على الكفايات السريرية (المجموعة 1 وتتألف من 153 طالب)، والمجموعة الثانية في عام 2019 بعد تطبيق هذا النظام (المجموعة 2 وتتألف من 199 طالب). تم مقارنة المجموعتين فيما يتعلق بدرجة الثقة في إجراء الإجراءات السنية الأساسية. تم تحليل البيانات باستخدام إحصائيات SPSS.

النتائج: وُجدت فروقات ذات دلالة إحصائية بين المجموعتين فيما يتعلق بمستويات الثقة في أربعة من بين تسعة إجراءات متعلقة بعلاج جذور الأسنان (علاج قناة الجذر للأسنان الأمامية، تفسير نتائج الاختبارات الحيوية للب الأسنان، وضع الحاجز المطاطي العازل، تشخيص الالتهاب اللبي غير المرتجع) وفي خمسة من بين 15 إجراء متعلق بجراحة الفم (إجراء الخلع الجراحي، التخدير بطريقة الانتشار الموضعي، إجراء الخلع البسيط، إجراء التخييط البسيط، وصف الأدوية للالتهاب السنية الحادة). كانت هذه الفروقات جميعها لصالح المجموعة 1 باستثناء إجراء واحد فقط (إجراء خلع جراحي).

الاستنتاج: أظهرت هذه الدراسة أن تطبيق نظام قائم على الكفايات السريرية في الجامعة الأردنية ليس مفيداً بشكل كبير إن لم يكن عكسياً فيما يتعلق بمستوى ثقة الطلاب عند القيام بعدد من إجراءات علاج جذور الأسنان أو الجراحة الفموية. كما أظهرت النتائج أن طلاب طب الأسنان لديهم مستويات عالية من الثقة في أداء الإجراءات السنية البسيطة وثقة أقل في أداء الإجراءات الأكثر تعقيداً. وبالتالي، يُنصح بالتركيز الإضافي على هذه الإجراءات المعقدة أثناء التدريب ما بعد التخرج وقبل الحصول على ترخيص مزاولة المهنة.

الكلمات الدالة: مستوى الثقة؛ إجراءات طب الأسنان الرئيسية؛ نظام التقييم القائم على الكفاءة؛ إجراءات علاج لب الأسنان؛ إجراءات جراحة الفم؛ تعليم طب الأسنان