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Research Article

Comparison of the Confidence Level of Final Year Dental Students in General Practice between two Saudi Dental Colleges in Riyadh

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Abstract

Aim: To identify and compare the self confidence level in performing variety of essential dental procedures among final year dental students at two Saudi Dental colleges; King Saud University and Riyadh Colleges of Dentistry and Pharmacy.

Methods: A questionnaire was distributed to 249 final year dental students at the two dental colleges. It included a 42 lists, contained variety of dental procedures. Information requested, related to their confidence in performing those procedures using three points scale 1 (not or little confidence), 2 (neutral), and 3 (confident). Paired t-tests were used to determine the statistical significant differences in the means of confidence between the two groups with various factors. ANOVA followed by a Tukey test were used to determine the statistical differences in means of students' self-confidence with their GPA.

Results: Dental procedures with highest confidence includes OHI and fissure sealant (2.95), PRR (2.94), followed by prophylaxis and scaling (2.93), then single RCT (2.92). While that of the least confidence includes veneer (1.88), vital and non-vital tooth bleaching (1.89, 1.86 respectively), inlay and onlay (1.90) and managing of physically disabled patient (1.94). Few differences in confidence levels between the two colleges and gender were identified. Students with High GPA were found more confidents in performing only 3 dental procedures: simple posterior restoration (2.98, $p < 0.049$), retreatment of failed RCT (2.63, $p < 0.049$) and repair and relining of existing denture (2.63, $p < 0.016$).

Conclusion: The final year dental students at the two colleges were found confident in the basic dental procedures that were expected to have acquired by the end of their undergraduate courses. Reforming and continues revision of undergraduate curriculum, moving to competency–based system, in addition to these, other learning systems which proven to have better impact on students' learning outcomes should be encouraged.

Keywords: *Self-Confidence; Dental Students; Dental Education; Dental Procedures; Curriculum*

Introduction

A major part of the dental school curriculum is focusing at evaluating students acquire technical skills in dentistry rather than achievement of self-confidence and competence in clinical and technical skills. Gaining competency and self-confidence should be the main objectives of dental curriculum. Clinical competencies may be loosely defined as "what students must be able to do on their own when they

begin practice "and as "bridge between education and practice" [1]. Increased confidence has been associated with increased clinical competence [2-4]. Student self-assessments of their own knowledge and skills have been used in the evaluation of dental school curriculum [5], for effectiveness of specific courses within the dental school curriculum [6,7] and teaching strategies, which improve students perception toward their clinical competencies [5]. Several studies have been conducted to measure the level of confidence of the undergraduates' dental students [7-11], but no similar studies were found in Saudi Arabia. The results of the studies stated that the graduates felt most competent in taking an adequate medical history, recognizing and treating dental caries, conducting an oral examination, giving dental health education, and recognizing the need for referral [8]. Gerbert., *et al*. also reported that respondents felt more comfortable in the area of restorative, radiology, and preventive dentistry [9] rather than pathological occlusion, myofacial pain, biopsies, and temporomandibular disorders [10]. Lynch and Allen found that a majority had difficulty in treatment planning and designing removable partial dentures for the rehabilitation of partially dentate adults [11]. Waldman and Perlman found that dentists were reported a lack of knowledge about providing care for patients with special needs, and indicated that they did not have sufficient clinical experiences to manage these patients during their dental education [12,13].

The curriculum should provide solid foundation to help in building the confidence of their undergraduates' students, in addition preparing them for the next step of their professional life [14]. All dental institutions operate under the realities of a budget and patient supply. Also it has been said that the dental education systems, and the health care delivery systems that it were created should be based on the need of our patient rather than the need of the system [15,16]. To remain viable, the dental curriculum should not remain static, but must develop in the light of both the present and anticipated needs of the community [17]. The dental education in Saudi Arabia started in 1979 with the commencement of the dental college, which is an integral part of collegiate system of King Saud University in Riyadh city. It is the largest and oldest dental college in Saudi Arabia. It is government-supported and admits Saudi students only. Regarding Riyadh colleges for Dentistry and Pharmacy, it was established in 2004 in Riyadh city [18], it is a private college and admits both Saudi and non-Saudi students. Both colleges admit students based on their high school performance and other standard admission exams. Dental curriculum in both colleges comprises preparatory year and five years or ten semesters followed by internship year. They include two parts: preclinical years (1,2) and clinical years (years 3,4,5). Both curriculums taught are similar to dental curriculums in most western countries and most of teaching staffs were graduates from USA and other western countries. Therefore, the dental education and training were provided at a standard expected to be comparable to those of American and European dental colleges. The curriculum of Riyadh Colleges of Dentistry and Pharmacy is a competency based curriculum, it enjoys a balance of problem-based, self-directed, traditional and hands-on learning approaches, while that of KSU' dental college depends essentially on traditional hands-on learning in addition to a combination of problem-based and self-directed approaches [18-20].

The aims of the present study were to identify and compare the self confidence level in performing variety of essential dental skills among final year dental students at two Saudi colleges; King Saud University and Riyadh College of Dentistry and Pharmacy, to take insight at the dental school's curriculum to draw recommendation to improve future educational training, in addition to those, to investigate the relationships between the confidence level, gender and GPA.

Subjects and Methods

A formal ethical approval was obtained from the Research Center in the College of Dentistry at King Saud University (KSU). A letter was also sent to Riyadh Colleges for Dentistry and Pharmacy (RCsDP) asking their permission to conduct the study. The questionnaire had a cover letter explaining the objectives, nature of the study, and that the participation in the study was voluntary. The 42 list of dental procedures were developed from the documented statement of the objectives of the dental schools, and adopted from previous studies which were obtained from the general dental council (GDC) document: "the first five year" [7,21]. The questionnaire was written in English and divided into demographic data questions, including college attended, gender and general point average (GPA). The survey was based on 42 lists of essential dental skills. The rating was on three points scale for confidence self-assessments, 1-(not or little confident), 2-(neutral), 3-(confident). The survey was intended for final year dental students at KSU 133 (females 43 and males 90) and RCsDP 116 (females 60 and males 56). The pilot study was conducted on a group of dental students of final year to insure the clarity of the questions.

Data Collection

Questionnaires were individually distributed to all the students and then collected at the same day, giving a sample size of 249.

Statistical Methods

The data were coded and entered into a computer. Statistical Package for Social Science (SPSS ver. 20) was utilized to calculate means, SD, and statistical tests. Paired t-test was used to determine statically significant differences in means of confidence between the two groups with various factors such as type of college and gender. One -way analysis of variance (ANOVA) followed by a Tukey test, were used to determine statistically differences in means with regard to comparison between students' levels of confidence with their GPA. Significance levels were set at $p \leq 0.05$.

Result

A two hundred out of 249 of all final year students at both colleges responded to the questionnaire (81.12%). One hundred and three (103) out of 133 from KSU responded (77.4%), whilst 99 of 116 from RCsDP responded (85.3%). Self-reported confidence levels were presented in (Table 1). Procedures were ranked in order of the highest overall mean confidence to the lowest overall mean confidence level. Oral hygiene instruction (OHI) and fissure sealant were the procedures that the students were most confident in (2.95) followed by PRR (2.94), prophylaxis and scaling (2.93) and single RCT (2.92). While Inlay and Onlay (1.90), veneer (1.88), vital and non-vital tooth bleaching (1.89, 1.86 respectively) and managing physically disabled patients (1.94) were the dental procedures that the students at both schools felt least confident.

*Procedures	†Mean (SD)
OHI	**2.95** (.268)
Pits & fissure sealant	**2.95** (.250)
Preventive resin restoration	**2.94** (.266)
Prophy & Scaling	**2.93** (.316)
Single RCT	**2.92** (.312)
Rubber dam placement	2.92(.313)
Caries detection	2.91 (.348)
Simple posterior restoration	29.1 (.334)
Bicuspid RCT	2.89 (.334)
Diagnosis of periodontal diseases	2.89 (.363)
Diagnosis of tooth wear	2.88 (.340)
Anterior composite restoration	2.88 (.368)
History & Examination	2.87 (.369)
Post & Core	2.86 (.429)
Pulp therapy (pulpotomy)	2.85 (.421)
Single crown preparation	2.85 (.447)
Treatment planning	2.84 (.433)
Radiographic interpretation	2.81 (.463)
Extraction of fully erupted tooth	2.81 (.466)
Complete denture construction	2.79 (.519)
Stainless steel crown	2.76 (.531)
Partial denture construction	2.76 (.522)
Root planning	2.74 (.542)
Fixed partial denture preparation	2.74 (.568)
Extraction of remaining root	2.67 (.594)
Behavior management of child patient	2.63 (.605)
Space maintainer	2.61 (.634)
Diagnose and classify malocclusion	2.60 (.627)
Molar RCT	2.48 (.701)
Retreatment of failed RCT	2.48 (.722)
TMJ disorder diagnosis	2.40 (.722)
Diagnose interceptive cases	2.34 (.716)
Repair & relining of existing denture	2.32 (.768)
Managing of medically compromised patient	2.22 (.786)
Requesting medical report	2.19 (.789)
Suturing	2.13 (.586)
Treat a simple malocclusion using removable	1.99 (.845)
Managing of physically disabled patient	**1.94** (.831)
Inlay & Onlay	**1.90** (.843)
Vital tooth bleaching	**1.89** (.827)
Veneer	**1.88** (.822)
Non-vital tooth bleaching	**1.86** (.812)

Table 1: *List of the skills, the mean and standard deviation of self-reported confidence levels for students at both colleges (maximum scores = 3).*

**Procedures are ranked in order from the highest overall mean confidence to lowest overall mean confidence.*

† The highlighted cells represent the highest five and lowest five overall mean of confidence.

Comparison between two colleges

There were statistically significant differences on 23 procedures. KSU students were found more confident in caries detection, rubber dam placement, preventive resin restoration, anterior composite restoration, suturing, stainless steel crown, space maintainer ($p < 0.01$), diagnosis of tooth wear ($p < 0.05$), complete and partial denture construction ($p < 0.01$ and $p < 0.05$ respectively) than RCsDP students. While RCsDP students were more confident in TMJ disorder diagnosis, Inlay and onlay, veneers, vital and non vital tooth bleaching, re-treatment of failed RCT, behavior management of child patients treat of simple malocclusion using removable appliances and repair and relining of existing denture ($p < 0.01$), managing of physically disabled, and medically compromised patients and diagnose of interceptive cases and classify malocclusion ($p < 0.01$ and $p < 0.05$ respectively) (Table 2).

Procedures	University				
		KSU	RCsDP		p-value
	N	Mean (SD)	N	Mean (SD)	
Suturing	102	**2.30** (.806)	99	1.95 (.873)	.003
Caries detection	103	**2.98** (.197)	99	2.84 (.445)	.004
Diagnosis of tooth wear	102	**2.93** (.254)	99	2.83 (.405)	.033
Rubber dam placement	102	**2.98** (.139)	99	2.85 (.413)	.003
Preventive resin restoration	103	**2.99** (.099)	98	2.88 (.359)	.003
Anterior composite restoration	102	**2.96** (.195)	99	2.80 (.473)	.002
Stainless steel crown	102	**2.86** (.399)	97	2.66 (.627)	.008
Space maintainer	102	**2.75** (.516)	95	2.45 (.711)	.001
Complete denture construction	102	**2.89** (.396)	99	2.68 (.603)	.002
Partial denture construction	102	**2.84** (.439)	99	2.68 (.586)	.024
TMJ disorder diagnosis	102	2.26 (.730)	99	**2.54** (.690)	.008
Managing of physically disabled patient	101	1.76 (.789)	99	**2.12** (.836)	.002
Managing of medically compromised patient	99	2.10 (.802)	99	**2.33** (.756)	.037
Inlay & Onlay	103	1.66 (.748)	99	**2.14** (.869)	.000
Veneer	102	1.63 (.730)	99	**2.14** (.833)	.000
Vital tooth bleaching	100	1.59 (.698)	99	**2.19** (.841)	.000
Non-vital tooth bleaching	99	1.57 (.688)	98	**2.16** (.821)	.000
Retreatment of failed RCT	102	2.33 (.749)	99	**2.63** (.664)	.004
Behavior management of child patient	102	2.50 (.686)	98	**2.76** (.478)	.003
Diagnose interceptive cases	98	2.12 (.722)	98	**2.56** (.643)	.000
Diagnose and classify malocclusion	100	2.51 (.674)	97	**2.70** (.562)	.032
Treat a simple malocclusion using removable appliances	103	1.64 (.815)	98	**2.35** (.719)	.000
Repair & relining of existing denture	102	2.19 (.780)	99	**2.46** (.733)	.010

Table 2: *Procedures with significant differences in mean self-reported confidence levels between KSU and RCsDP (maximum score =3).*

t-test, $p < 0.05$; $p < 0.01$

Confidence in relation to gender

Comparisons of self-reported confidence levels between male and female students in both KSU and RCsDP colleges were found statistically significant on 14 procedures. Male students felt more confident in suturing, managing of physically disabled patients, requesting medical report and inlay, onlay ($p < 0.01$), molar RCT, veneer, radiographic interpretation, and non-vital tooth bleaching ($p < 0.05$). While females were more confident in caries detection, rubber dam placement and simple posterior restorations ($p < 0.01$), preventive resin and retreatment of failed RCT ($p < 0.05$). Both genders were less confident in veneer, non-vital tooth bleaching but the females felt the least confident ($p < 0.05$) (Table 3).

Procedures	Male		Female		p-value
	NO	Mean (SD)	NO	Mean (SD)	
Radiographic interpretation	119	**2.87** (.381)	82	2.72 (.551)	.029
Suturing	119	**2.26** (.818)	82	1.94 (.880)	.009
Managing of physically disabled patient	119	**2.11** (.800)	81	1.69 (.816)	.000
Requesting medical report	116	**2.31** (.762)	81	2.01 (.798)	.009
Inlay & Onlay	120	**2.03** (.845)	82	1.71 (.809)	.008
Veneer	120	**1.99** (.835)	81	1.72 (.778)	.019
Non-vital tooth bleaching	118	**1.96** (.841)	79	1.72 (.750)	.045
Molar RCT	120	**2.58** (.602)	81	2.33 (.806)	.019
Caries detection	120	2.87 (.429)	82	**2.98** (.155)	.012
Rubber dam placement	119	2.87 (.389)	82	**2.99** (.110)	.001
Preventive resin restoration	120	2.91 (.317)	81	**2.98** (.156)	.049
Simple posterior restoration	120	2.85 (.423)	82	**3.00** (.000)	.000
Retreatment of failed RCT	119	2.39 (.760)	82	**2.61** (.643)	.026

Table 3: *Procedures with significant differences in mean self-reported confidence levels by gender at both colleges (maximum score = 3).*

t-test, $p < 0.05$; $p < 0.01$

Comparison of confidence levels between male and female students at KSU was found statistically significant different in 7 dental procedures. Females were more confident with anterior composite restoration, vital tooth bleaching, space maintainer ($p < 0.05$), and retreatment of failed RCT ($p < 0.01$), while the males were more confident with radiographic interpretation, requesting medical reports ($p < 0.05$), and managing physically disabled patients ($p < 0.01$) (Table 4). However at RCsDP, statistically significant differences between genders were observed on 16 procedures. Male students felt more confident with suturing, managing of physically disabled patients, inlay, onlay procedures, veneers, and vital and non-vital tooth bleaching ($p < 0.01$), requesting medical report and repair and relining of existing denture ($p < 0.05$). While females at RCsDP were more confident in caries detection, simple posterior restoration and rubber dam placement ($p < 0.01$), preventive resin, prophylaxis and scaling, pits, fissure sealant, and space maintainer ($p < 0.05$) (Table 5).

	NO		Mean (SD)		
Procedures	Male	Female	Male	Female	p-value
Radiographic interpretation	66	37	**2.86** (.346)	2.62 (.594)	.027
Managing of physically disabled patient	65	36	**1.91** (.805)	1.50 (.697)	.012
Requesting medical report	63	37	**2.21** (.786)	1.86 (.855)	.045
Anterior composite restoration	65	37	2.94 (.242)	**3.00** (.000)	.045
Vital tooth bleaching	66	35	1.48 (.640)	**1.80** (.759)	.026
Retreatment of failed RCT	65	37	2.11 (.773)	**2.73** (.508)	.000
Space maintainer	66	36	2.68 (.559)	**2.89** (.398)	.03

Table 4: *Procedures with significant differences in mean self-reported confidence levels between male and female at KSU (maximum score = 3).*

t-test, $p < 0.05$; $p < 0.01$

Procedures	No		Mean (SD)		p-value
	Male	Female	Male	Female	
Suturing	54	45	**2.19** (.826)	1.67(.853)	.003
Managing of physically disabled patient	54	45	**2.35** (.878)	1.84(.878)	.003
Requesting medical report	53	44	**2.43** (.734)	2.14 (.734)	.048
Inlay & Onlay	54	45	**2.48** (.837)	1.37 (.837)	.000
Veneer	54	45	**2.43** (.815)	1.80(.815)	.000
Vital tooth bleaching	54	45	**2.43** (.848)	1.91(.848)	.002
Non-vital tooth Bleaching	53	45	**2.49** (.795)	1.78(.795)	.000
Repair & relining of existing denture	54	45	**2.61** (.815)	2.29(.815)	.033
Caries detection	54	45	2.74(.556)	**2.96** (.208)	.011
Rubber dam placement	54	45	2.74 (.521)	**2.98** (.149)	.002
Preventive resin restoration	54	44	2.81 (.438)	**2.95** (.211)	.042
Simple posterior restoration	54	45	2.78 (.462)	**3.00** (.000)	.001
Prophy & Scaling	53	45	2.83 (.470)	**2.98** (.149)	.034
Pits & fissure sealant	53	45	2.87 (.342)	**2.98** (.149)	.038
Space maintainer	53	44	2.61 (.603)	**2.27** (.788)	.024

Table 5: *Procedures with significant differences in mean self-reported confidence levels between male and female at RCsDP (maximum score = 3).*

t-test, $p < 0.05$; $p < 0.01$

Confidence in relation to GPA

Statistical significant differences were found on 6 procedures when comparing self-reported confidence levels and students' GPA (Table 6). Interestingly, the students with GPA = excellent (≥ 4.5) found to have more confidence with retreatment of failed root canal, simple posterior restorations and repair and relining of existing denture ($p < 0.05$). However students with GPA = average (< 4 and = 3.5) showed high confident in performing pulp therapy ($p < 0.05$) and single crown preparation ($p < 0.01$).

Procedures	GPA	N	Mean (SD)	p-value
Re-treatment of failed RCT	more than or equal 4.5	46	**2.63** (.645)	.049
	less than 4.5 to equal 4	57	2.51 (.710)	
	less than 4 to equal 3.5	54	2.24 (.799)	
	less than 3.5	21	2.52 (.680)	
	Total	178	2.46 (.730)	
Simple posterior restoration	more than or equal 4.5	46	**2.98** (.147)	.049
	less than 4.5 to equal 4	57	2.93 (.258)	
	less than 4 to equal 3.5	54	2.94 (.231)	
	less than 3.5	22	2.59 (.734)	
	Total	179	2.91 (.347)	
Pulp therapy (pulpotomy)	more than or equal 4.5	46	2.80 (.500)	
	less than 4.5 to equal 4	56	2.89 (.366)	
	less than 4 to equal 3.5	54	**2.96** (.191)	.027
	less than 3.5	22	2.68 (.568)	
	Total	178	2.87 (.403)	
Treat a simple malocclusion Removable appliances	more than or equal 4.5	46	2.17 (.709)	
	less than 4.5 to equal 4	56	1.79 (.847)	
	less than 4 to equal 3.5	54	1.83 (.885)	
	less than 3.5	22	**2.32** (.780)	.012
	Total	178	1.97 (.836)	
Single crown preparation	more than or equal 4.5	46	2.85 (.470)	
	less than 4.5 to equal 4	57	2.81 (.441)	
	less than 4 to equal 3.5	54	**3.00** (.000)	.004
	less than 3.5	22	2.64 (.658)	
	Total	179	2.85 (.425)	
Repair & relining of existing denture	more than or equal 4.5	46	**2.63** (.645)	.016
	less than 4.5 to equal 4	57	2.19 (.811)	
	less than 4 to equal 3.5	53	2.23 (.776)	
	less than 3.5	22	2.32 (.646)	
	Total	178	2.33 (.757)	

Table 6: *Presents the dental procedures where significant differences in mean self-reported confidence levels were identified between students according to their GPA.*

(ANOVA) and Tukey tests were used to determine statistically differences in means with regard to comparison between students' levels of confidence with their GPA, $p \leq 0.05$.

Discussion

Various methods have been used for assessing and monitoring the effectiveness of curricula such as competency examination, board examination, clinical output, instructor evaluations, and student confidence level surveys [8]. In this study, a survey was distributed to the final year dental students at college of Dentistry KSU, and RCsDP to gauge confidence levels. Student self-assessment survey of dental procedures considered a reliable evaluation method. It provided information on the strengths and weakness of the curriculum [5]. However it is not indicative of competency. It represented the clinical experience that the students should be acquired at the undergraduate level. The list of 42 dental procedures which were included in the questionnaires were adopted and modified from previous studies that were obtained from the general dental council (GDC) document: "the first five year" [7,21].

The results of this study for overall confidence level of the students at both colleges agreed with previous studies [7,9,21]. The results showed that students had high self confidence level in performing oral hygiene instructions, pits and fissure sealant, preventive resin restoration, caries detection, prophylaxis and scaling. This indicated that both colleges were focusing on preventive dentistry. Complex procedures such as veneer, vital tooth bleaching, managing of medically compromised patient, suturing, repair and relining of existing denture, and molar RCT were of the least confidence level. These were unsurprising findings because of limited clinical experience of dental student gained in these fields during the five academic years [22,23]. According to a recent American Academy of Cosmetic Dentistry survey of dentists in North America conducted by the Levin Group, ''Bleaching/Whitening was the most often requested cosmetic service. In the present study, this procedure ranked with low confidence, which might reflect a deficiency in the curriculum [7]. Other possible explanations were insufficient clinical exposure within the undergraduate curriculum, or the lack of appropriate patients [21].

In regard to the comparison between KSU and RCsPD colleges, the first thing to highlight was the difference in teaching strategies and objectives. The curriculum of RCsDP college was focused on a balance of problem-based, self-directed, traditional and hands-on learning approaches, while that of KSU' dental college depended essentially on traditional hands-on learning in addition to a combination of problem-based and self-directed approaches [18,19]. Some differences were found when comparing the confidence level between two colleges. KSU students were more confident in performing preventive and restorative treatment, suturing, stainless steel crown, space maintainer, and removable denture construction than RCsDP students. While RCsDP students were more confident in TMJ disorder diagnosis, and behavior management of different kinds of patients, esthetic procedures, retreatment of failed RCT. These differences were probably due to availability of cases, number of requirements, and differences in the curriculum design. Comparing the curriculum of both colleges, showed that both had the same number of teaching years (6 years), however KSU' dental college had preparatory year which corresponded to the first year at RCsDP college, and the first year corresponded to the second year at RCsDP college and so on. Almost most of the courses' numbers were the same, except for the advance clinical dentistry course at KSU, which was offered only at the last year. While comprehensive clinical dental care at RCsDP that was equivalent to the advance clinical dentistry was given for longer period (the last 2 years). This could explain the differences between the two colleges, exposing the students to comprehensive cases; give them more confidence in management and treating more advance procedures.

It would make a sense for the confidence levels to be similar between male and female students as they received the same curriculum. However there were several items where significant differences were observed between the genders. Comparing males and females in two colleges showed that male students felt more confident in radiographic interpretation, suturing, managing of physically disabled patient, requesting medical report, performing inlay, onlay restoration, and molar RCT. While females were more confident in caries detection, rubber dam placement, preventive resin and simple posterior restoration, and retreatment of failed RCT. Interestingly, these findings suggested, male students felt more confident in some of the areas that represented problem-solving and clinical skills required. This probably related to the difference in nature between male and female gender. This lower confidence level could affect illusions of incompetence instead of ability. Females might seek perfection in their work and underestimate their ability, which could affect their self-confidence. Several studies revealed that males and females were different in acquiring specific clinical skills [8,13,24,25]. While Honey., *et al*. reported, there were no obvious difference between males and females [21].

At KSU dental college, the difference between genders were less obvious than the RCsDP. Females were more confident with anterior composite restoration, vital tooth bleaching, retreatment of failed RCT, and space maintainer, while the males were more confident with radiographic interpretation, managing physically disabled patient, and requesting medical report. RCsDP dental college, male students felt more confident in radiographic interpretation, suturing, managing of physically disabled patient, requesting medical report, inlay, onlay, veneer, non-vital tooth bleaching. While females were more confident in caries detection, rubber dam placement, preventive resin and simple posterior restoration, prophylaxis and scaling, pits and fissure sealant, and space maintainer.

Surprisingly, no correlation was found between students' GPA and their confidence levels of various dental procedures, except some procedures. The findings of this study noted that students with average GPA could perform dental procedures which needed more technical skills. The results of this study indicated that students' GPA was not a true indicator nor was seen as an individual element for the students' confidence level in performing variety of dental procedures. Bartlett., *et al*. and Mavis were found no significant correlation between self-confident rating and student scores [26,27].

Limitation

Confidence level was measured by self-reported rather than attempting to corroborate result from students' clinical record books. This means that the present study assessed confidence rather than competence. The role of confidence in achieving competence should not be underestimated, and at the same time confidence of graduating students could exceed their competence. Further researches are required to determine the relationship between the confidence levels at the time of graduation with the actual performance of dental procedures in dental practice at the end of the internship year.

Conclusion

The self-confidence survey has allowed the identification of dental procedures that have been acquired by final year students at both KSU and RCsDP.

- Students were more confident in simple procedures (such as pits and fissure sealant, preventive resin restoration, caries Detection) than complex procedures (such as veneer, vital tooth bleaching).
- Males' students were found to be more confident in some clinical procedures, which needed more clinical skills.
- Students who had average GPA score showed more confidence in pulpotomy and single crown preparation than the students with high GPA score.

Regardless of the differences in confidence among students, all students showed confidence in performing essential dental procedures that needed for general dental practice.

These results could provide information from which to plan both skill record and an assessment schedule, to monitor students' progress in clinical experience throughout their undergraduate years.

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