Assessment of the Clinical efficiency of Final Year Female Dental students

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Abstract: Effective student learning requires excellent educational environment, and it is fundamental to the effective student learning. Aim of the study is to investigate confidence, experience and avoidance of dental specialties among senior female dental students studying in Riyadh Colleges of Dentistry and Pharmacy, Riyadh, Saudi Arabia. A descriptive cross-sectional study was conducted among a sample of senior level female dental students studying in RCsDP. Structured, close-ended and self-administered questionnaires were distributed to dental students and responses were collected and analyzed. A total of 160 female senior dental students (2016 and 2017 batch) having mean age of 23.54±1.23 participated in the study. Results showed that 71% of students were confident performing dental procedure and 78% agreed for the difficulties in the clinical practice and only 18% had enough clinical experience to undertake complicated dental cases. A high level of confidence and experience was observed with periodontics, restorative dentistry and pedodontics specialty practices. However lower level of confidence and experience was found with Removable partial denture (RPD), fixed partial denture (FPD) and endodontic specialty practices. In clinical practice, students need more information and training in some specialities to be more professional. Each student should focus more on the least confident, least experienced and most avoided dental specialty to become more competent dental professional.

Keywords: Clinical efficiency, female, dental students, Final year, confidence, experience

Introduction

Last few decades have witnessed numerous educational theories in of teaching and learning in higher education. Since then, variety of initiatives have been undertaken to enhance student’s educational experience [1]. Dental education is considered as a complicated, demanding and stressful process. Undergraduate student enrolled in the programmes for 4-6 years duration are needed to achieve distinctive diverse collection of competences [2].

Effective student learning requires excellent educational environment, and it is fundamental to the effective student learning. Moreover, environmental influence has direct impact on student’s attitudes, professional advancement and personal and social well-being [3]. Hence there is a need for dental educators to subtle and receptive to the concerns of the dental students. Therefore, dental schools should be responsible for providing supportive environment that promotes learning in a positive way [3].

Quality teaching refers to the utilization of pedagogical approaches to produce learning outcomes for students. It has numerous scopes, including the effective design of curriculum and course content, a variety of learning contexts obtaining and using feedback, and effective assessment of learning outcomes. It also involves well-adapted learning environments and student support services. Previous data showed that nurturing quality teaching is a multifaceted. Support for quality teaching takes place at institutional level, program level and individual level [4].

In spite of the major differences in educational structures, viewpoints, methods and resources available globally, dental students’ opinions regarding their education seem to be relatively similar. Role of educational environment in dental schools is excessively assessed at different times with an international scale [2].

Evaluation component of the dental curriculum mainly gives importance to students acquiring technical skills in dentistry. However, self-confidence and competence in clinical and
technical skills have given less importance [5]. It has been observed that increased confidence is associated with increased clinical competence [6].

Student self-assessments have been utilized to assess their own knowledge and skills. Further these assessments have been utilized in evaluation of courses in the dental curriculum and complete dental curriculum itself and teaching strategies [7–9].

Previous studies have reported that the dental graduates were competent history taking, clinical examination, diagnosing and treating dental caries, providing dental health education and patient referral. Restorative, radiology, and preventive dentistry were the most comfortable department liked by the respondents [10, 11]. On contrary, pathological occlusion, myofacial pain, biopsies, and temporomandibular disorders were the difficult procedures rated by the dental graduates [12].

Riyadh Colleges of Dentistry and Pharmacy (RCsDP) was one of the early private dental schools established in 2004, in Riyadh city, Saudi Arabia. It provides an opportunity to study dentistry to both nationals and foreigners. Admission to the dentistry program is based on student’s high school performance and entrance test. Curriculum at RCsDP is consisted of preparatory, pre-clinical and clinical years of training followed by one year internship program. RCsDP curriculum is competency based, consisting amalgamation of problem-based, and self-directed traditional and hands-on learning approaches. RCsDP provides dental teaching and training for male and female students in different campuses with similar resources. Periodic student evaluations provide great opportunity to reflect their educational experiences that can be used as an input for curriculum planning to influence learning and assessments.

Hence the aim of the study is to investigate confidence, experience and avoidance of dental specialties among senior female dental students studying in RCsDP.

Study subjects and methods

Ethical approval

Formal approval for the study was obtained from the research center of RCsDP.

Study setting and Participants

It was a cross-sectional descriptive study in which senior (level 11 and 12) female dental students from 2016 and 2017 batches studying in Annamuthajiya campus of RCsDP were selected based on convenient sampling methodology.

Questionnaire

Questionnaire consisted of cover letter explaining the purpose of the study and participation of the female senior dental students into the study was voluntary. Questionnaire consisted of seven questions. First four questions were close-ended associated with student’s perception of clinical practice with yes/no responses. Remaining three questions elicited responses on most confident, least confident, most experienced and avoided dental specialties by choosing more than one specialties listed below.

Questionnaire distribution

Structured, close-ended and self-administered questionnaires were individually distributed in the lecture hall to all the senior female dental students and collected after 30 minutes.

Statistical analysis

All the collected data was entered into the statistical package for social sciences (SPSS) version 21. Descriptive statistics of frequency distribution tables and graphs were calculated and compared.

Results

A total of 160 female senior dental students having mean age of 23.54±1.23 participated in the study.

Table 1: Student’s General Perception Of Clinical Practice

<table>
<thead>
<tr>
<th>Questions</th>
<th>Responses</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confident to do any simple or difficult dental procedure</td>
<td>Yes</td>
<td>114</td>
<td>71</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>46</td>
<td>29</td>
</tr>
<tr>
<td>Need more to read and take information to do any simple treatment</td>
<td>Yes</td>
<td>88</td>
<td>55</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>72</td>
<td>45</td>
</tr>
<tr>
<td>Difficulties in the clinical practice</td>
<td>Yes</td>
<td>125</td>
<td>78</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>35</td>
<td>22</td>
</tr>
<tr>
<td>Clinical experience enough to do any complicated treatment</td>
<td>Yes</td>
<td>29</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>131</td>
<td>82</td>
</tr>
</tbody>
</table>
Results revealed that 71% of the final year female dental students of 2016 and 2017 batches expressed confidence in performing any dental procedure irrespective of its difficulty. However, more than half of the students said that there is a need to read more and take information to perform any simple dental treatment. Almost 78% agreed that there are always difficulties in the clinical practice. Only 18% said that they have enough clinical experience to do any complicated dental treatment, as shown in (Table 1).

![Figure 1: Confident dental specialties (%)](image)

When enquired about the level of confidence for practicing different dental specialties among 2016 batch students, majority of them expressed their confidence in periodontics (26.8%), followed by pedodontics (20.5%), restorative dentistry (17.9%), endodontics (15.3%), oral surgery (11.6%), FPD (6.3%) and RPD (1.3%) respectively. On the other hand students of 2017 batch expressed their high confidence level in restorative dentistry (29.5%) followed by periodontics (25.17%), pedodontics (14.9%), oral surgery (12.9%), endodontics (8.5%), RPD (4.76%) and FPD (4%), as shown in (Figure 1).

![Figure 2: Experienced dental specialties (%)](image)
In 2016 batch, female dental student’s most experienced specialty was periodontics (27.3%), followed by restorative dentistry (22.1%), pedodontics (17.5%), endodontics (13.6%), FPD (9.7%), oral surgery (9.1%), and RPD (0.6%). However, 2017 batch students said that their most experienced specialty was restorative dentistry (36.04%), followed by periodontics (22.9%), oral surgery (12.3%), pedodontics (10.25%), endodontics (7.42%) FPD (6.71%), and RPD (4.24%), as shown in (Figure 2).

In 2016, RPD (42.6%) was the most avoided specialty by dental students followed by FPD (19.4%), endodontics (15.5%), oral surgery (14%), pedodontics (5.4%), and periodontics (3.1%). However, none of the dental students avoided restorative dental specialty. Similarly, in 2017 RPD (32.8%), endodontic (27.03%), FPD (22.01%), oral surgery (11.58%), pedodontics (3.09%), periodontics (2.32%), and restorative dentistry (1.16%) specialties were avoided by the dental students, as shown in (Figure 3).

### Table 2: Practice perception of final year students of academic year 2016 and 2017

<table>
<thead>
<tr>
<th>Specialties</th>
<th>2016 Confident (%)</th>
<th>2016 Experienced (%)</th>
<th>2016 Avoided (%)</th>
<th>2017 Confident (%)</th>
<th>2017 Experienced (%)</th>
<th>2017 Avoided (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Endodontics</td>
<td>15.3</td>
<td>13.6</td>
<td>15.5</td>
<td>8.5</td>
<td>7.42</td>
<td>27.03</td>
</tr>
<tr>
<td>FPD</td>
<td>6.3</td>
<td>9.7</td>
<td>19.4</td>
<td>4</td>
<td>6.71</td>
<td>22.01</td>
</tr>
<tr>
<td>RPD</td>
<td>1.3</td>
<td>0.6</td>
<td>42.6</td>
<td>4.76</td>
<td>4.24</td>
<td>32.8</td>
</tr>
<tr>
<td>Periodontics</td>
<td>26.8</td>
<td>27.3</td>
<td>3.1</td>
<td>25.17</td>
<td>22.9</td>
<td>2.32</td>
</tr>
<tr>
<td>Oral surgery</td>
<td>11.6</td>
<td>9.1</td>
<td>14</td>
<td>12.9</td>
<td>12.3</td>
<td>11.58</td>
</tr>
<tr>
<td>Pedodontics</td>
<td>20.5</td>
<td>17.5</td>
<td>5.4</td>
<td>14.9</td>
<td>10.25</td>
<td>3.09</td>
</tr>
<tr>
<td>Restorative</td>
<td>17.9</td>
<td>22.1</td>
<td>0</td>
<td>29.5</td>
<td>36.04</td>
<td>1.16</td>
</tr>
</tbody>
</table>

In 2016, RPD (42.6%) was the most avoided specialty by dental students followed by FPD (19.4%), endodontics (15.5%), oral surgery (14%), pedodontics (5.4%), and periodontics (3.1%). However, none of the dental students avoided restorative dental specialty. Similarly, in 2017 RPD (32.8%), endodontic (27.03%), FPD (22.01%), oral surgery (11.58%), pedodontics (3.09%), periodontics (2.32%), and restorative dentistry (1.16%) specialties were avoided by the dental students, as shown in (Figure 3).

Senior dental students of batch 2016 pointed out that the periodontics (26.8%) was the most confident specialty and RPD (1.3%) was the least confident specialty for them. Similar finding of most experienced specialty and least experienced specialty was found to be periodontics (27.3%) and RPD (0.6%) accordingly. However, restorative dentistry was the least avoided specialty and RPD (42.6%) was the most avoided specialty during the clinical training. On contrary senior dental students of batch 2017 were most confident in restorative dentistry (29.5%) and least confident in FPD (4%). Restorative dentistry (36.04%) was the most experienced and RPD (4.24%) was the least experienced specialty. Similarly, RPD (32.8%) was the most avoided dental specialty whereas restorative dentistry (1.16%) is the least avoided specialty, as shown in (Table 2).
Discussion

In carrying out common clinical procedures not all the senior dental students are equally confident and efficient. Present study was undertaken to understand the level of confidence, experience and avoidance of different dental specialties by senior female students of private dental school. Clinical dental specialties of restorative dentistry, periodontics, pedodontics, RPD, FPD, oral surgery and endodontics were considered in the study. However specialties of community dentistry and oral pathology were not included as they are mainly considered as non-clinical specialties.

Overall most of the dental students were confident in carrying out common clinical procedures. This suggests adequate skills and experience of students to deal with routine dental procedures associated with different specialties. This finding is in line with study reported by Cardall et al, who stated that the clinical experience of the dental students was in high level in dental practice and skills [13]. Similar finding is reported from Indian context [14]. This could be explained on the basis of student enthusiasm, behavior communication skills and social interaction, self-interest, number of cases seen by each student and influence of clinical instructor.

Present study results clearly revealed that the confidence level and experience of senior female dental students was relatively higher in practicing restorative dentistry, periodontics and pedodontics compared to the endodontics, oral surgery specialties. On contrary students were least confident in practicing RPD and FPD specialties.

Furthermore senior students of 2016 batch and 2017 batch differed in their confidence level in practicing dental specialties. Senior students of 2016 batch were most confident in periodontics specialty practice whereas 2017 batch students were most confident in restorative dentistry specialty.

Based on the results of the study its clear that the periodontics took the highest percentage as the easiest and more practicing specialty for 2016 batch students, this is because they practice it more than any other specialty. Students start with periodontics as the first step in their treatment plan. Later on they can proceed with other specialties and many dental cases require the patient to be in good periodontal health first to continue their dental treatment. Hence plenty of cases of gingivitis and periodontitis cases were seen and treated.

On contrary, for 2017 batch students Restorative Dentistry took the highest percentage. This is due to the fact that most of the patients are suffering with dental caries due to high prevalence as result many cases were treated by the students in a semester. Moreover Restorative dentistry is important specialty before patients undergoes orthodontic and prosthodontic treatment.

On the other hand removable prosthodontics took the least percentage in 2016 and 2017 as many students find it the most difficult specialty for them. This could be due to the fact that in one semester student work only in few patients that need prosthesis and this is not be enough to get the best knowledge and skills before graduating. Many cases students face are complicated for them to work on and most of patients were referred to the specialist for the treatment. Moreover, the elderly population of today is better informed and more demanding of oral healthcare from providers than previous generations and they prefer other alternatives like implant.

Students should try to overcome their fear by trying more different procedures to get better experience. Students should be self-motivated to learn by observations, watching videos, reading latest publications etc. to improve their clinical knowledge and skills. During clinical sessions students should interact with their supervisors in order to gain the depth of clinical knowledge and skills. Difficulties encountered during the clinical knowledge and practice should be reflected into periodic course evaluation and student experience surveys in order to make appropriate decisions to improve course delivery and clinical skill development.

Several limitations can be addressed in this study. These include only female students were considered in the study. However, inclusion male students have increased the scope of the study yielded more realistic picture. Only few clinical specialties were considered in the study. For social desirability most of the students might have given positive responses. It was difficult to perform inferential statistics due to the lack of other demographic variables. Study was conducted in senior female students’ of private dental school by employing convenient sampling. Generalizability of the results is cannot be done.

Conclusion

Clinical experiences in dental school incorporate wide variety of learning opportunities. This study showed that female dental students of RCsDP were qualified to do any routine dental
procedures. Regarding clinical practice, students need more information and training in some specialties to be more professional. Each student should focus more on the least confident, least experienced and most avoided dental specialty to become more competent dental professional.

References


