Assessment of Confidence Level among Interns of a Dental College in Performing Various Dental Procedures

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Introduction: Effectiveness of learning process can be measured by evaluation of interns’ confidence level in each of the competencies which will be helpful in their future dental practice. This study was conducted to assess self-confidence level of dental interns of a dental college in performing various dental procedures.

Methods: A descriptive cross-sectional study was conducted among 65 dental interns selected by census method. Self-administered questionnaire was provided to the study participants for assessment of their confidence level in different dental procedures. Data were analyzed in Statistical Package of Social Sciences version 20. Mean and standard deviation for quantitative data and frequency/percentage for qualitative data were calculated.

Results: Majority of dental interns had good confidence in history taking (53, 83.1%), radiography (53, 81.5%), diagnosis (39, 60%), treatment planning (34, 52.3%), scaling (42, 64.6%), preventive resin restorations (39, 60%), anterior composite restorations (35, 53.8%), posterior composite restorations (55, 84.6%), anterior endodontics (29, 44.6%), premolar endodontics (23, 35.4%), treating pediatric patients (43, 66.2%), indirect pulp capping (41, 63.1%), acrylic partial denture design and construction (33, 50.8%) and simple extractions (33, 50.8%). They had poor/least confidence in metal partial dentures design and construction (58, 89.2), bridge preparation (44, 67.7%), molar endodontics (31, 47.7%), bleaching (57, 87.7%), veneering (61, 93.8%) and surgical extractions (38, 58.5%).

Conclusions: The findings of the study concluded that the dental interns were confident in simple dental procedures and had least confidence in complex dental treatments. They need more exposure to the complex procedures during internship to enhance their confidence level.

INTRODUCTION

The assessment of the effectiveness of the curriculum is critical to ensure the achievement of dental programme goals.1 The curriculum of undergraduates contain both theory as well as...
Clinical/practical's and they must be skilled in certain competencies set up by the dental institution.2

Any health care professional including a dentist experiences stress during interaction with their patients and staffs due to problems encountered during treatment as well as their concerns regarding litigation from their patients. Self-confidence in clinical competencies and patient management skills can help to alleviate these occupational stresses to a large extent.3,4

Dental internship provides an opportunity for students to have an on-the-job training experience on various aspects of diagnosis and management of patients.5 This period is designed in such a way that the students will gain valuable exposure to skills in a semi-independent way compared to clinical years where they are supervised by the department faculty. The dental interns are expected to gain skills in wide range of topics ranging from diagnosis, endodontics, prosthodontics, minor surgical procedures, and management of complications.6 Therefore, this study was conducted to assess the self-confidence level among dental interns of Kathmandu Medical College and Teaching Hospital in performing various dental procedures.

METHODS

A descriptive cross-sectional study was conducted among 65 dental interns of two batches by from October to November 2020 after obtaining ethical approval from Institutional Review Committee of Kathmandu Medical College and Teaching Hospital. This dental hospital provided dental services through undergraduate students and dental interns under supervision, dental officers and dental faculties. Thus, dental interns were selected for study by census method after receiving informed consent from them.

Pretested structured questionnaire obtained from a similar study conducted by Wu et al.5 was used for data collection. The questionnaire consisted of two sections. The first section included demographic data and the second sections had questions regarding assessment of the confidence level in different dental procedures. The participants used a four point likert scoring system to indicate responses for their confidence level of competencies in each procedure as follows: 1=“poor”, 2= “average”, 3= “good” and 4= “excellent” The self-administered online Google questionnaire forms were provided to the dental interns via electronic mail and Viber software application. The personal information was kept confidential and the data were used only for the purpose of the study.

Data were entered in Microsoft Excel Sheet and analyzed in Statistical Package of Social Sciences version 20. Mean and standard deviation were calculated for quantitative data. Frequency and percentage were calculated for each response of questionnaire.

RESULTS

Total of 69 dental interns were provided with the questionnaire and 65 of them filled the online forms. Therefore, the response rate was 94.2%. The mean age of the study participants was 25.22±0.95 years. Out of 65 study participants, 19 (29.2%) were males and 46 (70.8%) were females. The confidence level of the study participants on different dental procedures are presented in table 1.

| Procedure                        | Poor (1) | Average (2) | Good (3) | Excellent (4) |
|----------------------------------|----------|-------------|----------|---------------|
| History and exam                 | 0 (0)    | 8 (12.3)    | 54 (83.1)| 3 (4.6)       |
| Radiography                      | 0 (0)    | 7 (10.8)    | 53 (81.5)| 5 (7.7)       |
| Comprehensive diagnosis          | 1 (1.5)  | 25 (38.5)   | 39 (60.0)| 0 (0)         |
| Treatment planning               | 1 (1.5)  | 30 (46.2)   | 34 (52.3)| 0 (0)         |
| Communication with patients      | 0 (0)    | 14 (21.5)   | 45 (69.2)| 6 (9.2)       |
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### DISCUSSION

The duration of dental undergraduate program in Nepal is of four and half years followed by one year of rotatory internship. The dental curriculum requires students to be proficient in theoretical knowledge, clinical competencies as well as have interpersonal skills. The newly passed undergraduates in the form of intern may feel employed as an apprentice with the other competent and experienced dentists for gaining confidence and additional skills which could otherwise be taught in the learning years at dental school. Self-assessment of dental interns would be helpful to draw realistic evaluation of dental curriculum. Therefore, this study was conducted to assess the confidence level among dental interns in performing various dental procedures. The study was conducted in Kathmandu Medical College and Teaching Hospital situated in Duwakot, Bhaktapur. This dental institution is affiliated to Kathmandu University (KU) and follows the University’s guided curriculum for teaching their students. The dental hospital has well-qualified full time teaching faculties and is well equipped with all the dental instruments and facilities required in different departments. It has well flow of patients sufficient for all dental students, interns, dental officers and specialists.

In this study, majority of the dental interns (53, 83.1%) had good confidence and very few (3, 4.6%) had excellent confidence in taking case history and oral examination. In contrast, a study done in Indian dental school by Lagali-Jirge and Umarani showed that 55% of dental interns were confident and 35% were very confident in eliciting thorough case history.

| Procedure                          | Confidence Level |
|-----------------------------------|-----------------|
| Appointment setting and patient management | 1 (1.5) 20 (30.8) 35 (53.8) 9 (13.8) |
| Scale and polish                  | 4 (6.2) 9 (13.8) 42 (64.6) 10 (15.4) |
| Sub-gingival scaling              | 14 (21.5) 20 (30.8) 28 (43.1) 3 (4.6) |
| Oral hygiene instruction          | 0 (0) 3 (4.6) 41 (63.1) 21 (32.3) |
| Preventive resin restorations     | 1 (1.5) 9 (13.8) 39 (60.0) 16 (24.6) |
| Fissure sealants                  | 0 (0) 6 (9.2) 39 (60.0) 20 (30.8) |
| Wedge-shaped defects treatment    | 1 (1.5) 18 (27.7) 37 (56.9) 9 (13.8) |
| Anterior composite restorations   | 4 (6.2) 24 (36.9) 35 (53.8) 2 (3.1) |
| Posterior composite restorations  | 0 (0) 3 (4.6) 55 (84.6) 7 (10.8) |
| Anterior endodontics              | 15 (23.1) 15 (23.1) 29 (44.6) 6 (9.2) |
| Premolar endodontics              | 19 (29.2) 18 (27.7) 23 (35.4) 5 (7.7) |
| Molar endodontics                 | 31 (47.7) 27 (41.5) 6 (9.2) 1 (1.5) |
| Rubber dam placement              | 19 (29.2) 32 (49.2) 12 (18.5) 2 (3.1) |
| Vital tooth bleaching             | 57 (87.7) 8 (12.3) 0 (0) 0 (0) |
| Veneer preparation                | 61 (93.8) 4 (6.2) 0 (0) 0 (0) |
| Single crown preparation          | 19 (29.2) 34 (52.3) 11 (16.9) 1 (1.5) |
| Simple extractions                | 0 (0) 11 (16.9) 33 (50.8) 21 (32.3) |
| Surgical extractions              | 38 (58.5) 24 (36.9) 3 (4.6) 0 (0) |
| Simple suturing                   | 10 (15.4) 27 (41.5) 21 (32.3) 7 (10.8) |
| Complete denture construction     | 1 (1.5) 30 (46.2) 29 (44.6) 5 (7.7) |
| Acrylic partial denture design and construction | 9 (13.8) 18 (27.7) 33 (50.8) 5 (7.7) |
| Metal partial denture design and construction | 58 (89.2) 7 (10.8) 0 (0) 0 (0) |
| Bridge preparation                | 44 (67.7) 18 (27.7) 3 (4.6) 0 (0) |
| Treatment of pediatric patients   | 3 (4.6) 18 (27.7) 43 (66.2) 1 (1.5) |

| Procedure                          | Confidence Level |
|-----------------------------------|-----------------|
| Pulpotomy                         | 24 (36.9) 30 (46.2) 11 (16.9) 0 (0) |
| Indirect pulp capping              | 0 (0) 16 (24.6) 41 (63.1) 8 (12.3) |
and setting appointment or patient management (53.8%). However, in a study done by Shirazi et al. in Pakistan, only 38.7% of the undergraduates were confident in interpretation of radiograph but most of them were confident in terms of diagnosis of dental disease.12 Similarly, a study done by Baidas et al. in Riyadh concluded that the students of two dental schools were confident in diagnosing dental caries at the end of final year.13

In the current study, most of the dental interns had good confidence in carrying out periodontal procedures like supra-gingival scaling and polishing (42, 64.6%), sub-gingival scaling (28, 43.1%) and providing oral hygiene instructions (41, 63.1%) to patients. In accordance to this study, Sadozai et al. in Lahore conducted a study where dental graduates expressed highest confidence level in simple periodontal procedures like scaling and polishing.14 A survey among general dental practitioners (GDPs) by Alblowi and Zahid in Saudi Arabia indicated a decreasing trend in confidence with increasing severity of periodontal disease where around 93% of GDPs were confident in diagnosing and treating gingivitis and initial periodontitis, whereas only 25% felt confident to diagnose and treat aggressive periodontitis.15

In this study, most of the dental interns had good confidence in placing preventive resin restorations (39, 60%), performing wedge-shaped defects treatment (37, 56.9%), anterior composite restorations (35, 53.8%), posterior composite restorations (55, 84.6%), performing anterior endodontics (29, 44.6%) and premolar endodontics (23, 35.4%), treatment of pediatric patients (43, 66.2%) and indirect pulp capping (41, 63.1%). However, majority of them had poor/least confidence in molar endodontics (31, 47.7%), vital tooth bleaching (57, 87.7%) and veneer preparation (61, 93.8%). Similarly, final year dental students in a study by Honey et al. in United Kingdom showed least confidence in complex restorative and endodontic procedures like veneer preparation, molar endodontics and vital tooth bleaching.16 The interns in this study had average confidence in rubber dam placement (32, 49.2%) and pulpotomy (30, 46.2%). However, 62.1% of internship dentists of a study done by Doumani et al. were very confident in rubber dam placement.17 The confidence level in rubber dam placement could depend upon the availability of the equipment in the department, its use and difficulty in application. It is essential to make rubber dam placement compulsory for dental students for successful restorative and endodontic treatment.

Dental interns in this study had good confidence in a prosthodontic procedure like acrylic partial denture design and construction (33, 50.8%). Meanwhile, they showed average confidence in single crown preparation (34, 52.3%) and complete denture construction (30, 46.2%). The interns had poor/least confidence in metal partial dentures design and construction (58, 89.2) and bridge preparation (44, 67.7%). In a study done by AlRumayyan et al. in Riyadh among dental interns, higher confidence level was noticed in females when treating patients with fixed partial dentures and male interns were more confident in treating patients with complete dentures.18

Nearly half of the dental interns in this study had good confidence oral surgical procedures like simple extractions (33, 50.8%) but poor/least confidence in surgical extractions (38, 58.5%). However, they had average confidence in simple suturing (27, 41.5%). Similarly, most of the vocational dental practitioners (87%) and trainers (77%) surveyed by Patel et al. in England were satisfied with undergraduate experience of non-surgical extraction of teeth. However, they agreed that undergraduate experience of surgical extractions was either ‘poor’ or ‘very poor’.19

This study has some limitations. The findings of the present study cannot be generalized due to small survey sample. The actual practice records were not obtained from the dental interns which could make a difference in their confidence level. Also, the
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study was conducted among dental interns during the period of their clinical postings and they may not have undergone rotation to some departments due to which their confidence level could be overestimated in the departments where they were posted and lacking where they were yet to attend.

**CONCLUSIONS**

The findings of the study concluded that the dental interns were confident in simple dental procedures like history taking, clinical diagnosis, scaling and polishing, restoration and simple extractions. However, they had least confidence in complex procedures like surgical extraction, veneer preparation, molar endodontics, metal partial denture fabrication and bridge preparation. The dental interns need more exposure to the complex treatments during internship to build their confidence level.

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