



CONFIDENCE LEVEL IN PERFORMING ENDODONTICS TREATMENT AMONG UNDER GRADUATE DENTAL STUDENTS

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ABSTRACT:

Students perception of their dental College experience is an essential measures of success of dental education. Concept of conservation and preservation of tooth structure most important procedure in dentistry. The Dental students after completing four years followed by one year of Rotational internship in Bachelor of dental surgery program is expected to be proficient in theoretical knowledge, clinical experience and interpersonal skills. Therefore this study is design to determine self confidence level among the dental student in performing Endodontic Treatment procedures from MIDSR Dental college, Latur. **AIM** :To

Determine The Confidence level in performing Endodontic Treatment Among UG Dental students. **OBJECTIVES:**1)To explore the confidence level of undergraduate dental students when performing Root canal treatment. 2)To investigate the amount of experience dental student have in the number of root canal treatment undertaken. 3)To explore

the confidence of dental student when carrying out anterior versus posterior root canal treatment. **MATERIALS AND METHODOLOGY:**-A cross-sectional study will be conducted in 202 students of the internship dental student of MIDSR institute Latur which was carried out with the help of 15 questionnaires. The self constructed

questions were created in Google form and were distributed to internship students through WhatsApp, electronic mail and social mass media and analyse by using collected data . **Result:** Out of total Interns participated in the present study ,there were total 202 participants in which frequency of male participants was 28 i.e 13.8% and frequency of female participants 174 i.e 86.13% , which responded for the collection of sample for the respective study. **Conclusion:** According to the present we concluded that It is essential that interns should develop good self assessment of their clinical competence and more clinical exposure, and it is recommended to enhance the self confidence level in interns for performing endodontic treatment.

Keyword: confident level, Root canal treatment, undergraduate dental students, Endodontic

INTRODUCTION:

Dental students generally believe that dentistry is one of the most difficult programs. In addition, it includes stressful factors such as frequent examinations, maintenance of a sound patient-student relationship and successful clinical application of theoretical knowledge. Therefore, their perspectives on the educational experiences are an essential component of curriculum planning, which can direct program changes that enhance the learning process.

Endodontology is the aspect of dentistry that focus on the health and the disease status of dental pulp and periradicular tissue,the aim of the treatment is to restore the health of periradicular tissue, the most common way of doing this is by performing root canal treatment. Students perception of their dental College experience is an essential measures of success of dental education. Concept of conservation and preservation of tooth structure most important procedure in dentistry.

The most common error reported in Root canal treatment perform by undergraduate student were furcation, perforation, Apical perforation, ledge

formation .It is essential to assess the operator's level of confidence prior to treating a patient and work on enhancing their competency. Low self confidence affect the daily practice of health professionals. Endodontic Treatment are complex difficult and stressful because of anatomy of root canal system responsibility towards patients and low self confidence level.

Confidence levels in performing various dental procedures independently are expressed by new graduates at the completion of house job. This can be a measure to assess their capability to provide comprehensive and quality dental health services in the future when they will start working as independent dental practitioners. Gaining skills and subsequently confidence plays an important role in controlling dentists' stress during dental treatments.

On the other hand, dentists who have less work experience and training express higher levels of stress while treating patients. It is postulated that this may be due to a number of reasons including the inherent difficulty of the technical procedures, a lack of understanding of the principles and aims of treatment, poor remuneration for the time required to complete such procedures, and inadequate teaching at undergraduate level. For students to reach such level of skill, they must be exposed to a sufficient number of endodontic cases of variable difficulty. However, different dental schools have varying prerequisites for graduation in each dental discipline, and endodontics is no exception. The number of endodontic treatments a student is obliged to complete to be eligible for graduation differs from school to school E and various factors such as the proportion of patients available to the number of enrolled clinical students per dental school may have an impact on this difference.

The Dental students after completing four years followed by one year of Rotational internship in Bachelor of dental surgery program is expected to be proficient in theoretical knowledge, clinical experience and interpersonal skills. Undergraduates, feed back and suggestions are very Important for

Improving students clinical experience and confidence level of performing Endodontic Treatment in one year internship and has job to train dental students in various aspects of diagnosis, formulating reasonable treatment plan and carrying out safe and quality treatment. During this period dental students get opportunity to gain skills and treat various patient of various under the supervision of department staff.

Undergraduate dental students and general dental practitioner consider endodontic as one of most difficult and stressful discipline in dentistry. This might be due to complex anatomical variations expansion in terms of clinical management of pulpal and periapical diseases, recent advances in equipment, technology material and lack of self confidence. To acquire necessary skills, students must achieve the competencies that are required to perform endodontic treatment independently after graduation.

Most of the students feels inadequate in treating molar tooth and upper tooth in Endodontic Treatment. Self confidence play important role in providing Endodontic Treatment. Feedback and suggestions from undergraduate student are important for Improving University curriculum and learning methodology. Therefore this study is design to determine self confidence level among the dental student in performing Endodontic Treatment procedures from MIDSR Dental college, Latur.

Undergraduate endodontic education has experienced Considerable variations in current years, inspired by variations in knowledge, methods, and materials as well as educational styles. It is anticipated that freshly graduated dentists acquire the expertise and awareness to treat the majority of the cases that they may face in private practice!! This comprises of executing root canal treatment (RCT) of straightforward single as well as multirouted teeth, detecting and handling dental emergencies, comprising of pulpal origin, and handling trauma in deciduous as well as permanent dentitions .

However the present study have explored the self confidence level of students while executing various steps of endodontic therapy. Considering

this aim of the present study was to access the undergraduate dental students self perceived confidence level while performing different stages of endodontic treatment.

MATERIAL AND METHODOLOGY:

In the study 202 consent interns were taken from M.I.D.S.R. dental college Latur, formed the study sample, and consent was taken from all the participants and every individuals informed consent was taken compulsory .

The cross-sectional survey was conducted after obtaining ethical approval from institutional review board of M.I.D.S.R Dental College Latur. The study was conducted in the district of Latur, Maharashtra, India .The study subjects were selected based on convenience sampling.

A 15 self constructed questionnaire was developed for the study. The self constructed questions were created in Google form and were distributed to internship students through WhatsApp, electronic mail and social mass media and analyse by using collected data.

All the questions was compulsory to answer ,and the questions were based on confidence level in performing Endodontic Treatment among under graduate dental studens . then the date was collected for a period of 6 months.

Ethics: The Institutional Ethics Committee of the Maharashtra Institute of Dental Science and Research Latur has approved the study.

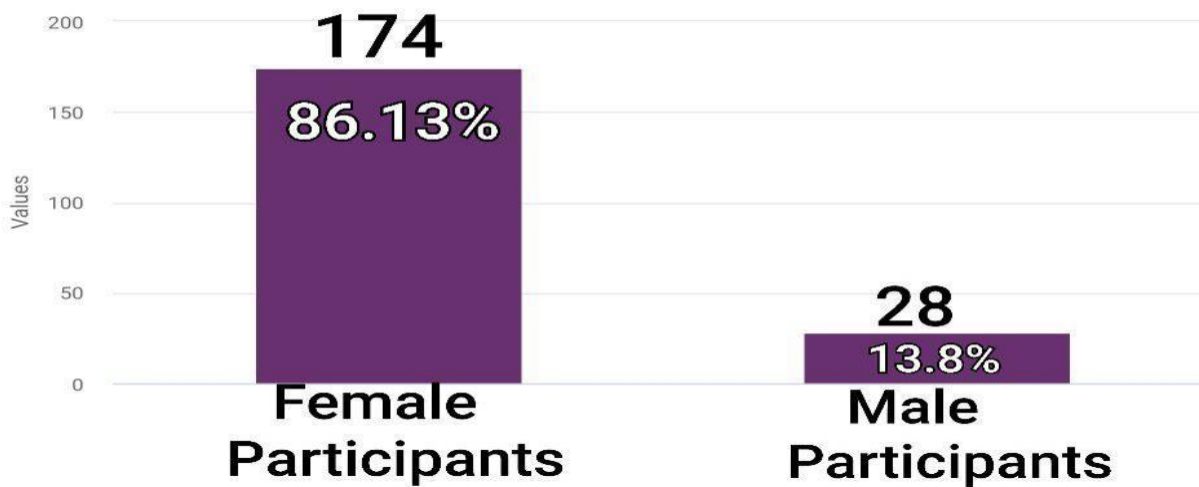
RESULT:

The main purpose of study was to determine the confidence level during performing the Endodontic cases among the UG Dental student .the total No of 202 participate from the district of Latur, India state of Maharashtra has participated in the study which helped in collecting the data , patients concern was taken before taking the

response on the self constructed questionnaire. After collecting the sample for the presented study we have the result given below

Bar chart no .1

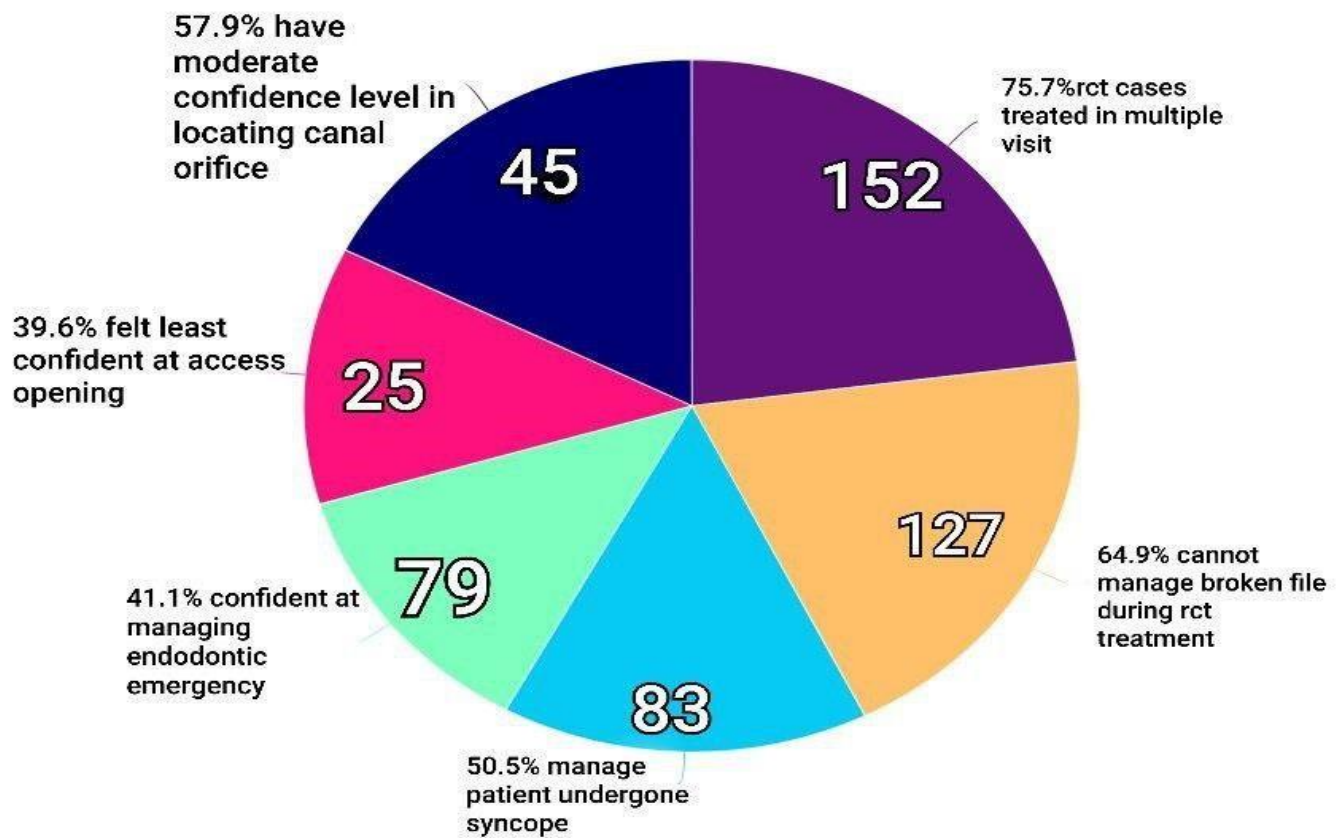
demographic Profile



Out of total Interns participated in the present study ,there were total 202 participants in which frequency of male participants was 28 i.e 13.8% and frequency of female participants 174 i.e 86.13% , which responded for the collection of sample for the respective study.

Pie chart showing the differential Percentile count of the participants ,which responded when the questionnaire were asked , 57.9% said they have moderate confidence level in locating canal orifice, 75.7% said they treat root canal treatment cases in multiple visit ,64.9% said they cannot manage broken file during the treatment, 50.5% said they can manage patients undergone in syncope, 41.1 % confident at managing endodontic emergency,39.6% felt least confident at doing access opening.

PIE CHART No. 1 : Showing response



Questions	Responses			
	Single visit	Multiple visit	No preference	
1) Do you routinely treat your endodontic cases in single or multiple visits?	12.40%	75.70%	11.60%	
2) On average how many endodontic cases do you treat in your department per month?	(1-5) 15.80%	(6-10) 34.20%	(11-15) 32.70%	(16-20) 17.30%
3) Which type of cases do you routinely treat?	Anterior 15.30%	Bicusped 45.50%	Molar 33.70%	Retreatment 5.40%

Table No . 1 : Showing Response

In Table No.1 When asked that do you routinely treat your endodontic treatment in single visit or multiple visit then 12.40% Interns said they do t/t in single visit,75.70% said they do it in multiple visit and there were 11.60%

has no preference (Q.1). When asked how many endodontic cases do you treat in your department per month then 15.80% Interns said (1-5), 34.20% said (6-10), 32.70% said (11-15) and 17.30% said (16-20) cases they treated per month.(Q.2).When asked which type of cases do you routinely treat then they responded that 15.30% said anterior,41.50% said bicuspid, 33.70% said Molars and 5.40. % said Retreatment (Q.3)

Questions	Response			
	Always	Usually	sometimes	Never
4) How often do you use rubber dam isolation?	16.80%	25.20%	31.70%	26.2%
5) Have you ever confidently managed broken file during root canal?	Yes	No		
	35.10%	64.90%		
6) Is the adjacent tooth being damaged by you while using bur?	yes	No		
	34.20%	65.80%		

Table No. 2 showing responses

In Table no.2 When asked how often do you use rubber dam isolation then they responded that 16.80% said always, 25.2% said usually, 31.7% said sometime, 26.2% said never (Q.4). When asked Have you ever confidently managed a broken file during the root canal then they responded that 35.1% said yes and 64.9% said no (Q.5). When asked Is the adjacent tooth being damaged by you while using bur then they responded that 34.2% said yes ,65.8% said no (Q.6)

Questions	Responses			
	Yes	No		
7) Have you managed patient undergone syncope during clinical procedure?	49.50%	50.50%		
	Little confident	Neutral	Confident	Very Confident
8) Are you confident at managing and understanding endodontic emergencies?	21.30%	30.70%	41.10%	6.90%
	Little confident	Neutral	Confident	Very Confident
9) Are you confident at diagnosis of cases needing endodontic treatment?	15.30%	23.30%	52.50%	8.90%

TableNo.3 Showing responses

In Table No.3 shows When asked if you have managed a patient undergone syncope during clinical procedure then they responded that 49.5% said yes and 50.5% said no (Q.7). When asked Are you confident at managing and understanding endodontic emergencies then they responded that 21.3% said little confident, 30.7% said neutral, 41.1% said confident, 6.9% said very Confident (Q.8). When asked Are you confident in the diagnosis of cases needing endodontic treatment then they responded that 15.3% said little confident, 23.3% said neutral, 52.5% confident, 8.9% said very Confident (Q.9)

Questions		Responses			
		Yes	No		
10)	Have you practiced RCT on extracted teeth before doing patient?	74.30%	25.70%		
		Easy	Moderate	Difficult	Very Difficult
11)	Your confidence level in making an access opening is?	34.70%	41.10%	19.30%	5%
		Access Opening	cleaning and Shaping	Obturation	
12)	Which out of three stages of RCT you felt least confident?	28.20%	39.60%	32.20%	

Table No.4 Showing Responses

In Table No.4 When asked Have you practiced RCT on extracted teeth before doing a patient then they responded that 74.3% said yes and 25.7% said no (Q.10). When asked Your confidence level in making an access opening then they responded that 34.7% said easy , 41.1% said moderate, 19.3% said difficult, 5% said very difficult (Q.11). When asked Which out of three stages of RCT you felt least confident then they responded that 28.2% said access opening, 39.6% said cleaning and shaping, 32.2% obturation (Q.12).

Questions	Responses			
	15min or less	16 to20 min	31 to 45 min	60 min or more
13) Estimate the time you take to prepare access opening,?	24.30%	45.50%	22.80%	7.40%
	Easy	Moderate	Difficult	Very difficult
14) Confidence level in locating the canal orifice?	22.30%	57.90%	16.30%	3.50%
	Little confident	Neutral	Confident	Very Confident
15) Are you confident at determining the working length of each canal using an electric apex locater?	25.20%	37.60%	27.20%	9.90%

Table No. 5 Showing Responses

When asked to Estimate the time you take to prepare access opening then they responded that 24.3% said 15 min or less ,45.5% said 16 to 20 min, 22.8% said 31 to 45 min, 7.4% 60 min or more (Q.13). When Asked Confidence level in locating the canal orifice then they responded that 22.3% said easy, 57.9% said moderate 16.3% said difficult, 3.5% said very difficult (Q.14). When asked Are you confident at determining the working length of canal using an electric apex locater then they responded that 25.5% said little confident, 37.6% said neutral, 27.2% confident, 9.9% said very Confident (Q.15)

Discussion:

Numerous studies have been conducted to assess the quality & the outcome of endodontic treatments by dental students.

However, few of the study shows their confidence level in performing the endodontic treatment therefore, this research was done to know the knowledge about the confidence levels of interns.

Endodontic treatment considered to be the most stressful procedures for dental students. This procedure is most important in dental practices as nowadays there is high number of patients which go through this dental problem. Hence it is very important that dental students should have good confidence level in theoretical knowledge & clinical skills for performing endodontic treatment, so to determine the confidence level among interns we have conducted this survey.

In the present study, the maximum level of confidence was found in treating endodontic cases were in multiple visit i.e (75.70%) & minimum level of confidence was in single visit i.e

(18.40%) this might be due to lack of clinical experience, on average maximum no of Interns (34.20%) were treated by 6-10 endodontic cases per monthly and 5-10 no of cases were treated by (15.80%) interns per month it is reassuring that by the time students started to reach the end of their clinical teaching during 5 years, every student felt confident in performing anterior RCTs (15.30%) & (45.50%) felt confident in performing bicuspid cases, 33.70% felt confident in performing posterior RCTs this is expected result which is congruent with studies done by Honey et al & Patel et al (3 4).

In this study, 16.80% interns were always applying rubber dam both in anterior and posterior tooth which is in congruent with studies done by Awooda et al and Tanalp et al (9 12) and 31.70% interns were use rubber dam very rarely this is because of low confidence level of students in placement of rubber dam due to limited availability of rubber dam in the department, it's underuse and due to its difficult application. In this study, 35.10% of interns was having the high level of confidence in managing broken file during root canal treatment and 64.90% of interns were found low confidence in managing broken file. 65.80% interns were never damaged adjacent tooth, while using bur and 34.20% of interns were damaged adjacent tooth this might be due to inadequate clinical practice.

An accurate diagnosis is a gateway to determine a proper treatment plan. In this study, majority of the interns were confident in diagnosing the cases which required endodontic treatment i.e 52.50% ,the result revealed that, there is a high confidence level of interns i.e 50.50% who managed patient undergone syncope during clinical procedure. In the present study, intern dentist were not so confident regarding the management of flare ups. Similar results were found by Awooda etal and Tanalp etal. There is low confidence level in the management of endodontic emergencies was due to failure of students to give prior information regarding flare ups and unable to manage it due to an unscheduled visit by a distressed patient (9 12).

A study revealed that, the recommended improvements for future endodontic teaching comprised higher number of staff supervision and added endodontic RCT practice on extracted teeth 74.30% prior to meeting patients, as stated by the majority 41.10% interns ,they felt high confidence level in making an access opening proper which is properly due to the high exposure level to endodontic cases, abundant and direct supervision similar finding were reported by Shetty etal (1). Overall confidence in completing the individual stages of RCTs were different between different interns. Again showing that confidence increased with clinical practice. 28.20% interns were felt least confident in access opening and 39.20% interns were confident enough in cleaning and shaping the root canal systems using hand files. And 32.20% in doing root canal obturation, which is in contrast to the study done by Doumini etal.(8)

This study estimate time taken to prepare access opening by 45.50% Interns in 16 to 20 min and 7.40% Interns need 60 min or more. 22.30% interns were having high confidence level in locating canal orifice. 3.50% interns were finding it very difficult to locate regarding the working length determination using electronic apex locater, The interns were showing little confidence (25.20%) which is similar to the study done by Qamar e tal Murray e tal (6 7) this low level of confidence highly attributed to unavailability of the device

for interns in collage and technique sensitivity associated with its use. Interns practice the radio graphic method frequently for working length determination in contrast 29.90% interns were found high confidence in determining working length using an electronic apex locater, which to similar to study done by Mathew etal (5).

Conclusion

_Within the limitations of present study it can be concluded that dental interns were confident in performing a majority of the normal endodontic treatment, however they were found to have low confidence in performing difficult procedures like use of electronic Apex locater ,rubber dam application , assessment of quality of endodontic treatment ,treating patients in single visits, RCTS on posterior teeth.

It is essential that interns develop good self assessment of their clinical competence and more clinical exposure is recommended to enhance the interns self confidence level in endodontic treatment

<i>QUESTIONN</i>	1) Do you routinely treat your endodontic cases
<i>AIRE:</i>	in single or multiple visits? a) Single visit

b) Multiple visits

c) No preference

2) On average how many Endodontic cases do you treat in your department per month?

a) 1-5

b) 6-10

c) 11-15

d) 16-20

3) Which type of cases you routinely treat ?

a) Anterior

b) Bicuspid

c) Molar

d) Retreatment

4) How often do you use rubber dam isolation?

a) Always

b) Usually

c) Sometimes

d) Never

5) Have you ever confidently managed broken file during root canal treatment?

	<p>a) Yes</p> <p>b) No</p> <p>6) Is the adjacent tooth being damaged by you while using bur?</p> <p>a) Yes</p> <p>b) No</p> <p>7) Have managed patient undergone syncope during clinical procedure?</p> <p>a) Yes</p> <p>b) No</p> <p>8) Are you confident at managing and understanding Endodontic emergencies ?</p> <p>a) Little confident</p> <p>b) Neutral</p> <p>c) Confident</p> <p>d) Very confident</p>
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- 9) Are you confident at diagnosis cases needing endodontic treatment?
- a) little confident
 - b) neutral
 - c) confident
 - d) very confident
- 10) Have you practiced RCT on extracted teeth before doing patient?
- a) Yes
 - b) No
- 11) your confidence level in making access opening is?
- a) easy
 - b) moderate
 - c) difficult
 - d) very difficult
- 12) which out of three stages of RCT you felt least confident ?

	<p>a) access opening</p> <p>b) cleaning and shaping</p> <p>c) obturation</p> <p>13) estimate the time you take to prepare access opening?</p> <p>a) 15min or less</p> <p>b) 16 to 20 min</p> <p>c) 31 to 45 min</p> <p>d) 60min or more</p> <p>14) confidence level in locating canal orifice?</p> <p>a) easy</p> <p>b) moderate</p> <p>c) difficult</p> <p>d) very difficult</p> <p>15) Are you confident at determining working length of each canal using an electric apex locator?</p> <p>a) little confident</p> <p>b) neutral</p> <p>c) confident</p>
	<p>d) very confident</p>

References

1. Shetty N, Kundabala M, Shenoy R. Attitude and perception of undergraduate dental students toward endodontics as a specialty in India. *J Edu Ethics Dent* 2014;4:8-11.
2. Davey J, Bryant ST, Dummer PMH. The confidence of undergraduate dental students when performing root canal treatment and their perception of the quality of endodontic education. *Eur J Dent Educ* 2015;19:229-34.
3. Patel J, Fox K, Grieveson B, Youngson CC. Undergraduate training as preparation for vocational training in England: a survey of vocational dental practitioners' and their trainers views. *Brit Dent J*. 2006
4. Honey J, Lynch CD, Burke FM, Gilmour AS. Ready for practice? A study of confidence levels of final year dental students at Cardiff University and University college cork. *Eur J Dent Educ*. 2011 May ;15(2):98-103.
5. Mathew S. Evaluation of dental students perception and self confidence levels regarding endodontic treatment. *Int J Dent Health Sci*. 2015;(4):712-21.
6. Murray CM, Chandler NP. Undergraduate endodontic teaching in Newzealand: students experience, perceptions and self confidence levels. *Aust Endod J*. 2014 Dec;40(3):116-22.
7. Qamar R, Noor N, AIN QU, Jalees M, Manzoor MA, Abbasi S. evaluation of house officers confidence level in performing endodontic treatment. *Pak Oral Dent J*. 2018 Jun 30;38(2).
8. Doumani M, Habib A, Alhababi A. The internship dentists self confidence levels during root canal treatment procedures. *Intl J Dent Res*. 2017;5(2):121-4.

9. Tanalp J, Guven EP, Oktay I. Evaluation of dental students perception and self confidence levels regarding endodontic treatment. *Eur J Dent* 2013 Apr;7(2):218.
10. Madfa AA, Senan EM. Perception and confidence levels among dental students and interns in performing various endodontic procedures. *J Oral Res.* 2019 Jun 30;8(3):185-95.
11. Alrahabi M. The confidence of undergraduate dental students in Saudi Arabia in performing endodontic treatment. *Eur J Dent.* 2017 Jan ;11(1):17.
12. Awooda E, Mudathir M, Mahmoud A. Confidence level in performing endodontic treatment among final year undergraduate dental students from the University of Medical Science and Technology, Sudan (2014). *Saudi Endod J.* 2016;6:26-30.

