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## Transition from preclinicals to clinicals: Difficulties faced by students

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### Abstract

**Introduction:** The aim of this study was assess the difficulties faced by dental students with respect to dental procedures when they transitioned from preclinical department to clinical department during their undergraduate course.

**Materials and Methods:** A self-administrated questionnaire was distributed to dental students. These students had previously attended and cleared the preclinical course in the 2nd year of their curriculum and had entered the clinical departments or had already cleared the dental program.

**Results:** Four hundred and eighty-five students (third years, final years and interns) from three different dental institutes participated in the study. Most of the dental students were faced difficulties under various conditions such as doing procedures in patients with limited mouth opening; 22.1% of participants and recording centric relation; 19.6% of participants.

**Conclusion:** More practical training, however, for the most difficult procedures are highly recommended. Exploring the trainees' perceptions regarding the education process plays an important role in discovering the associated problems and, therefore, improving the academic learning curriculum or syllabus.

**Keywords:** Study, questionnaire, curriculum, education process

### 1. Introduction

Dentistry is a profession of science, craftsmanship and fine engineering. It requires a skillful mindset about how to orient the theoretical and practical aspects of the subject and a fine dexterity to apply it courteously. Self-reliance is considered to be a strong forte for dental undergraduates performing various procedures, be it bleaching procedure or any other intricate treatment modes<sup>[1]</sup>.

The transition period is profoundly stressful for a freshman who has just entered clinical exercise because of varied reasons such as the vast diversity in the training environment, the need to adopt new learning maneuverings, to meet patient expectations, etc. This is why preclinical training using simulators is beneficial to improve the ingenuity of the students which helps in a smooth transition from preclinical to clinical<sup>[2]</sup>. On the other hand, apart from a lack of knowledge, the reasonably very low conviction among dental students will negatively reflect on the nature of treatment bestowed to the patients<sup>[3]</sup>.

This study is intended to address concerns about what difficulties students perceive during their gaining of factual knowledge and remolding it into clinical erudition to enhance their skill set. Feedback from dental undergraduate students concerning their discernment of assorted aspects of the dental subjects helps in enhancing the active dental inclination process at a university level<sup>[1]</sup>. This study evaluates a student's response when confronted with a clinical scenario.

### 2. Materials and Methods

A cross-sectional study was conducted among third year and final year students and interns in three private dental colleges in Chennai city. The purpose of the study was explained to the concerned authorities and prior permission was obtained from them. Again the participating students were explained about the study and informed consent was obtained from them. A self-administrated questionnaire containing 20 questions related to several dental procedures and

clinical situations experienced throughout a students' training curriculum. The difficulty level was enumerated based on options provided in the survey questionnaire. The difficulty level ranged from frequent to never. The choice "frequent" insinuated the lack of expertise in that particular dental treatment aspect [1].

The collected data was subjected to statistical analysis using SPSS software.

### 3. Result

The study was conducted among 485 participants. The age of the study participants ranged from 19 years to 26 years, mean age being 21.86±1.14. Majority of the participants were females 364(75.1%) and the rest 121(24.9%) were males. (Figure 1)

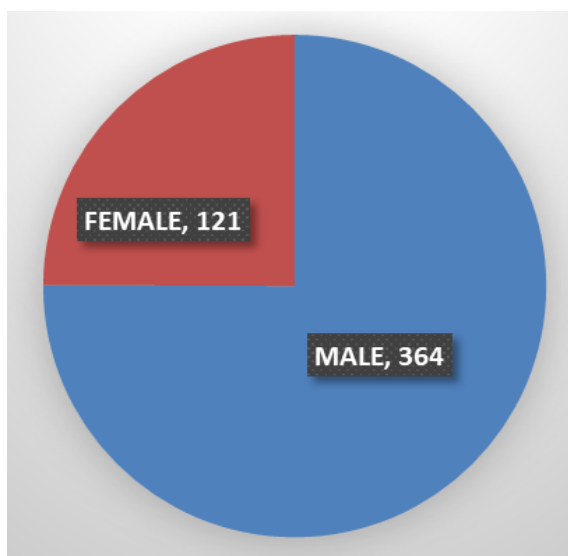


Fig 1: Distribution of study participants according to gender

Majority of the participants were pursuing their internship; 245 (50.5%), 172(35.5%) were final year students and 68(14.0%) were third year students. (Figure 2)

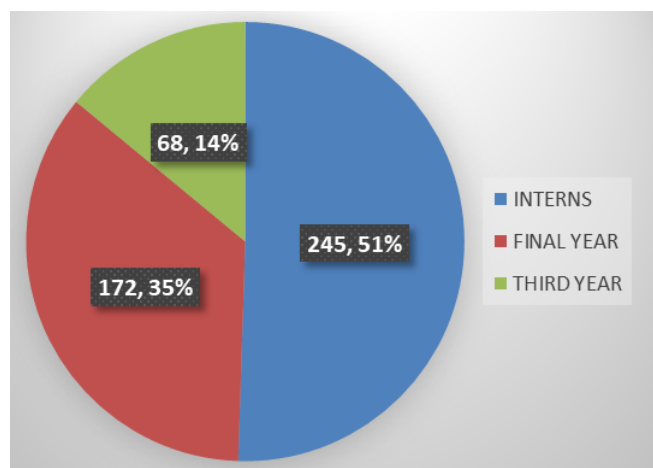


Fig 2: Distribution of study participants according to their year of study

The descriptive analyses of the percentage of subjects having difficulties in certain procedures in clinical situations is shown in table 1.

It was seen that about 3.3% of students only found it difficult to interpret subjective and objective symptoms. Students had minimum difficulty in reading radiographs; 7%. In establishing a correct diagnosis wherein 12.6% faced difficulties frequently followed by which 10.7% of students faced difficulties with formulating a proper treatment plan for a particular diagnosis. In convincing the patient regarding the betterment of the treatment 9.3% appeared to had difficulty in addressing it duly. Surprisingly only 20% of the students had never encountered any difficulty in maintaining a clean operating field. While placing rubber dam, 37.7% of students sometimes faced difficulties. In terms of chair position and indirect vision while doing procedures, 11.3% of students had difficulties. Many participants i.e., about 36.9% had difficulty sometimes in following the principles of cavity preparation while performing restorative procedures. About 39.2% of students very rarely had any difficulty or dilemma towards the choice of base material for the required restoration.

Table 1: Distribution of study participants according to the difficulties faced by them in clinical situations

S. No	Question	Difficulty Grading%			
		Never	Rare	Sometimes	Frequent
1	Difficult in interpreting between subjective and objective symptoms	148(30.5)	129(26.6)	192(39.6)	16(3.3)
2	Difficulty in reading the radiographs	39(8.0)	178(36.7)	234(48.2)	34(7.0)
3	Difficulty in making correct diagnosis	85(17.5)	111(22.9)	228(47.0)	61(12.6)
4	Formulating a proper treatment plan	73(15.1)	157(32.4)	203(41.9)	52(10.7)
5	Difficulty in convincing the patient regarding the betterment of the treatment	91(18.8)	140(28.9)	209(43.1)	45(9.3)
6	Maintaining a clean operative field	97(20.0)	137(28.2)	192(39.6)	59(12.2)
7	Difficulty in rubber dam placement	111(22.9)	99(20.4)	183(37.7)	92(19.0)
8	Chair positioning difficulties during procedure	80(16.5)	170(35.1)	180(37.1)	55(11.3)
9	Indirect vision (visibility and accessibility while doing procedures in maxillary arch)	96(19.8)	117(24.1)	217(44.7)	55(11.3)
10	Following the principles of cavity preparation during restorative procedures.	93(19.2)	135(27.8)	179(36.9)	78(16.1)
11	Dilemma towards the choice of base material for the required restoration	167(34.4)	190(39.2)	98(20.2)	30(6.2)
12	Handling pain management in hysterical patients	55(11.3)	133(27.4)	243(50.1)	54(11.1)
13	Difficulty in choosing the appropriate impression material for recording the tissues of the oral cavity.	141(29.1)	194(40.0)	139(28.7)	11(2.3)
14	Having difficulties with manipulation of the impression	113(23.3)	136(28.0)	204(42.1)	32(6.6)
15	Difficulty in recording the undercuts properly	67(13.8)	134(27.6)	201(41.4)	83(17.1)
16	Difficulty in preventing gag reflex	73(15.1)	144(29.7)	195(40.2)	73(15.1)
17	Doing procedures in patients with restricted mouth opening	46(9.5)	117(24.1)	215(44.3)	107(22.1)
18	Difficulty in recording centric relation	37(7.6)	120(24.7)	233(48.0)	95(19.6)
19	Difficulty in adapting the acrylic denture into the patients' mouth.	66(13.6)	146(30.1)	217(44.7)	56(11.5)
20	Difficulty in educating patients regarding post insertion denture maintenance.	143(29.5)	91(18.8)	179(36.9)	72(14.8)

About 40% of students rarely found it difficult in choosing the appropriate impression material for recording the tissues of the oral cavity. It was observed that 42.1% of students sometimes faced difficulties in manipulating impression material and 41.4% of students had difficulty sometimes in recording undercuts. Also, 40.2% of students had difficulty sometimes in preventing gag reflex. When doing procedures in patients with restricted mouth opening approximately 44.3% of students sometimes had difficulty. Almost half of the student population i.e. 48% had difficulty in recording centric relation. Again 44.7% of the student population had difficulty sometimes in adapting the acrylic denture into the patients' mouth. When it came to educating patients regarding post insertion denture maintenance 36.9% sometimes had difficulties.

#### 4. Discussion

The intention of this study was anchored to traverse the difficulty level subjected to numerous procedures amidst dental undergraduate students which they faced in transition from the preclinical training program to the clinical disciplines.

From the result, it implied that difficulties confronted during procedures concerning patients with limited mouth opening, while recording centric relation, rubber dam placement and chair position happened to be the principal concerns. About one fourth (22.1%) of the participants had frequent inconvenience in doing procedures on patients with limited mouth opening. While only 9.5% of them were confident in doing this procedure. According to a study conducted by Karim Chebi *et al.* [4], this was presumably due to the shortage of theoretical erudition and/or practical application of these procedures during academic life. Thus, the individuals may be inclined to adopt certain modified impression methods which brought about the desired output. Examples of such were the technique of flexible impression trays, the sectorial system of the commercial impression tray with securing screws, the individual dental tray with pins and the locking latch technique [5].

Around 19.6% of participants found it difficult to record centric relation in edentulous patients while barely 7.6% of them were extremely confident in recording it. Contrasting with the study conducted by Vinothkumar Sengottaiyan *et al* [6] the given data is more or less similar. Also declaring the fact that clear understanding among dental students is lacking. This might be because it was not a part of the training in the preclinical preparation period.

About 19% of participants perceived it difficult in placing a rubber dam. This might be due to a lack of cooperation between the students and the patient as described in the study conducted by Whitworth *et al.* [7]. Sometimes isolation of anterior teeth or poorly intact tooth or rotated tooth might be the reason [8]. According to the study conducted by Mirza B *et al* [9], this situation can be handled by introducing obligatory rubber dam placement in all preclinical endodontic exercises and also granting supplementary training such as a split dam technique with various clamps that are accessible. But one of the detriments of this initiative was the high cost.

Also, 19% of the participants had dealt with difficulties in chair position for proper accessibility which was chiefly because some of them were still fresh with the academic information-theoretically.

With more clinical training and experience the students would be able to overcome these difficulties and use additional

means to improvise their clinical practice to have a promising future. Also, recurrent evaluation and feedback from the undergraduate trainee will be useful to alter and enhance the curriculum and rectify the errors.

#### 5. Conclusion

The results gathered from the present study suggest that extended practical preparation, for the most difficult procedures, is highly recommended. Traversing the students' sagacity regarding the education process plays an important role in determining the associated problems and, consequently, improving the academic learning curriculum. The students' rejoinder to certain treatment aspects serves as a guideline marker for the augmentation of the curriculum.

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