

# Dental Students' Perception on Preclinical Operative Dentistry Course

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## ABSTRACT:

**Objective:** To determine student's perception on preclinical operative dentistry course in different dental colleges of Karachi. **Materials and Methods:** This descriptive study was conducted at three different dental colleges of Karachi. Total of 130, 2<sup>nd</sup> year BDS students participated. Specially designed questionnaire including demographics was used. This research was conducted after getting permission from respective authority and verbal consent from all respondents. Analysis was done using SPSS version 17.

**Results:** Total 130 participants responded out of which 109 (86.3%) were female and 21 (13.7%) were male. The mean age of the respondents was  $20.54 \pm 1.037$  years (a range of 18-25 years). More than 80% of the students reported that preclinical course helped them in understanding the subject, increased their motivation to gain knowledge and would help them in final year respectively. 71.5% and 75.4% stated improved confidence and easier to work in clinic. 60.8% and 33.1% found that the course was adequate and extensive respectively. 54.6% of the participant perception was that every lecture should be accompanied by clinical visit. Reason to attend preclinical course included 35.4% (essential preparation for clinical dentistry), 3.8% just because of attendance. 81.5% of the students want to have structured manual of the course.

**Conclusion:** Students showed positive response regarding preclinical course in order to increase their interest and to become a successful clinician. However, some revisions need to be made in educational methods and contents.

**Keywords:** Dental education, Preclinical course, Operative dentistry, Psychomotor skills.

## INTRODUCTION:

Dental education is considered as a complex, challenging and often stressful educational procedure.<sup>1</sup> Acquisition of psychomotor skills by undergraduate students is an important step in many health professions, particularly dentistry to become a successful professional.<sup>2</sup> Before performing procedures that may be invasive and/or irreversible in patients, it is essential that the dental students should spend time to learn essential psychomotor skills through various teaching strategies during their preclinical laboratory projects to meet patient needs—either aesthetic or functional.<sup>3</sup> These projects vary from the use of traditional bench-top typodonts mounted manikins adapted to phantom heads to highly sophisticated devices, such as the virtual reality simulators.<sup>4,5</sup>

Curriculum of BDS prepared by Pakistan Medical & Dental Council (PMDC) and the Higher Education

Commission (HEC) include 25 lecture hours and 110 practical hours for pre-clinical instruction in second year and 20 lecture hours and 80 practical hours for pre-clinical operative dentistry in third year.<sup>6,7</sup> Factors affecting clinical learning include varieties of clinical cases encountered, the quality of supervision and feedback, good organization of the experiences of learners and teachers. The central concern in dental education is to prepare dental students to independently provide patient care. The learner's views of their educational experiences is important in modifying the educational process.<sup>1</sup> Students View point regarding quality and efficacy of dental education is very important because they are the main consumers of dental education and their opinions is considered as the major determinants of teaching effectiveness. For continuous improvement a feedback mechanism is required. The present study was conducted to assess the perceptions of dental students on preclinical operative dentistry course in three different dental colleges of Karachi.

## MATERIAL AND METHODS:

This descriptive study was conducted at three different dental colleges of Karachi, Bahria University Medical and Dental College (BUMDC), Karachi Medical and Dental College (KMDC) and Dow University of Health Sciences (DUHS). A specially designed self-administered questionnaire was distributed among dental students at the end of their respective lectures on the day of study. Questionnaires were answered anonymously by students and no personal information except their age and gender was obtained. The questionnaire consisted of 18 close-ended questions with different options to mark against and some were simply yes/no type questions. A total of 130 students participated in the study, out of which 109 were females and 21 were male students. Inclusion criteria include students of second year BDS. First year, third year and final year students were

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excluded. This research was conducted after getting permission from respective authority and verbal consent from all respondents. All respondents participated voluntarily in this study. Confidentiality of the response of the respondents has been maintained. Data were obtained and analysed using SPSS software (version 17.0) for statistical analysis. □

**RESULTS:**

Total 130 participants responded out of which 109 (86.3%) were female and 21 (13.7%) were male (Figure 1). The mean age of the respondents was 20.54 ± 1.037 years (a range of 18-25 years). The questionnaire was distributed among 2<sup>nd</sup> year students in three different dental colleges of Karachi, the percentage of participants from each college is shown in Figure 2. Student response regarding the academic year most suitable to teach preclinical course is shown(Figure 3).

According to 79(60.8%) students the course content was adequate, 43(33.1%) students thought it was too extensive, 6(4.6%) and 2 (1.5%) students found it too easy and inadequate respectively. Regarding question about teacher attention received by the students, 79 (60.8%) responded that they received enough attention, 33 (25.4%) chose more than enough, 15 (11.5%) were not satisfied and marked not enough. Out of total 53 (40.8%) students selected excellent and satisfactory for the ability of the teachers to clarify concepts, 17(13.1%) chose between satisfactory and not good enough. 71 (54.6 %),11 (8.5%) students suggested that each lecture should be accompanied by visits to the dental clinic to see the live procedures and separate class rooms should be available for preclinical lecture and exercises respectively. In response to question about facilities 11 (8.5%) students reported about the difficulty in getting extracted teeth, 10 (7.7 %) students mention that getting plaster model at the right time was a great problem, 10 (7.7 %) chose that there should be proper syllabus.(Table 1). Another question regarding reasons to attend the course revealed that 46 (35.4%), 37(28.5%), 20(15.4%), 14 (10.8%), 5 (3.8%) and 6 (4.6 %) responded that it was an essential part of preparation for clinical dentistry, they would not have to go directly to patients without prior practice, made them feel like dentists for the first time, genuinely interested in having the course, just because of attendance, chose more than one reason respectively. students reported that they used more than one source of study, most reported educational resources used by the students include more than one source 37 (28.5%), McCabe’s Dental Materials 31 (23.8%), lecture handouts 24 (18.5%), copied multimedia presentations 19 (14.6%) and only 6 (4.6%) used Practical Manual of Operative Dentistry (Table 1).

Majority of the students 113 (86.9%), 101 (77.7%) and 98 (75.4%) and 93 (71.5%) believed that the course had

increased their motivation in gaining knowledge about techniques, would help in better patient handling and care and would be easier to work in clinics after this course and improved confidence level for further exercise respectively. According to 83 (63.8%) students the environment was conducive to learning and 32 (24.6%) replied it was not. 86 (66.2%) students felt that they would be capable of evaluating their own work after the course, 15 (11.5%) could not and 29(22.3%) don’t know. 33 (25.4%) students responded that more topics should be added, 86 (66.2%) and 106 (81.5%) students thought no more topics should be added and a manual specially tailored for the course should be available. 111 (85.4%) students response showed that clinical rotation to observe procedures being done after every clinical exercise will be helpful (Table 2).

Figure: 1  
Gender distribution

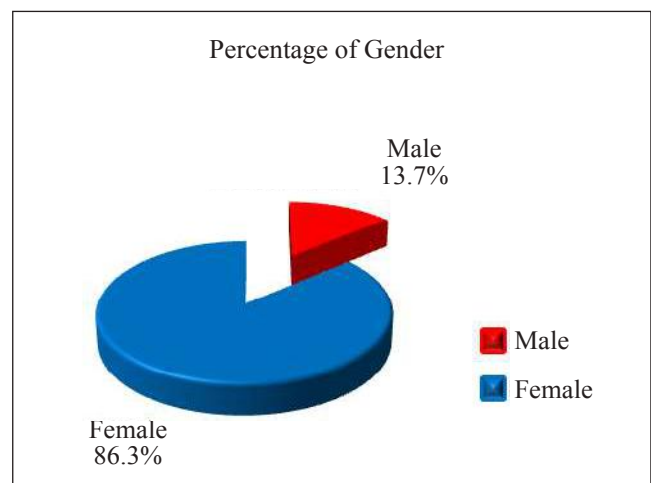


Figure: 2  
Percentage of participants from each college

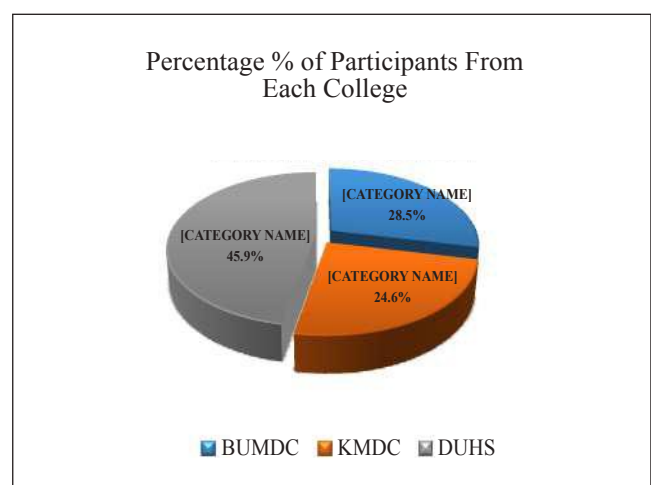


Table: 1  
Frequencies and Percentage of different variables

S.#	Questions	Options	Count (n)	Percentages %
1	Course content was	Adequate	79	60.8
		Too extensive	43	33.1
		Too easy	6	4.6
		Inadequate	2	1.5
2	Do you think you receive enough attention by your teacher	Enough	79	60.8
		More than enough	15	11.5
		Not enough	33	25.4
		Did not reply	3	2.3
3	Do you think teacher are able to clarify concepts	Excellent	17	13.1
		Between excellent and satisfactory	53	40.8
		Satisfactory	35	26.9
		Between satisfactory and not good enough	17	13.1
		Not good enough	8	6.2
4	What is your perception about facilities provided to you during your preclinical courses?	Getting extracted teeth was a great Problem	11	8.5
		Problem getting plaster models at the right time	10	7.7
		Separate classroom should be available	11	8.5
		Each lecture exercise to be accompanied by visits to the clinic to see the procedure being done	71	54.6
		Syllabus would be a good idea	10	7.7
		Did not reply	13	10.0
		More than one option	4	3.1
5	Your reason to attend preclinical course	Genuinely interested in having the course	14	10.8
		Essential preparation for clinical dentistry	46	35.4
		Made them feel like dentists for the first time	20	15.4
		Would not have to go directly onto patients without prior practice	37	28.5
		Attendance	5	3.8
		More than one reason	6	4.6
		Did not reply	2	1.5
6	Which educational resource did you use for study during your preclinical course	Notes	7	5.4
		Lecture handouts	24	18.5
		Student assignments	1	.8
		McCabe's Dental Materials	31	23.8
		Copied Multimedia presentations	19	14.6
		Practical Manual of Operative Dentistry	6	4.6
		Students reporting more than one source of study	37	28.5
		Internet/senior notes	3	2.3
		Did not reply	2	1.5

Figure: 3  
Students response about the academic year most suitable to teach preclinical course

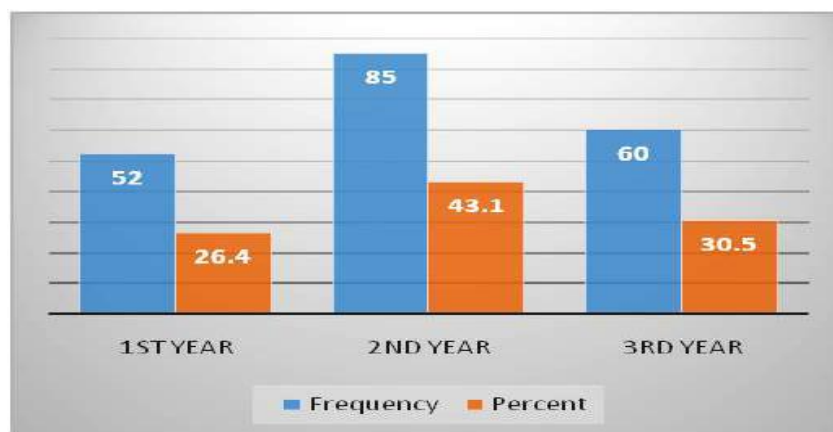


Table: 2  
Frequencies and Percentage of different variables

S.#	Questions		Options		
			YES	NO	DON'TKNOW
1.	It would help you in final year	Count(n)	106	4	20
		Percentage %	81.5	3.1	15.4
2.	Course has any role in motivating to increase your knowledge about techniques	Count(n)	113	15	2
		Percentage %	86.9	11.5	1.5
3.	It would help you in better understanding of the subject	Count(n)	112	8	10
		Percentage %	86.2	6.2	7.7
4.	It would help you in better patient handling after this course	Count(n)	101	8	16
		Percentage %	77.7	6.2	12.3
5.	It would be easier to work in clinics after this course	Count(n)	98	15	17
		Percentage %	75.4	11.5	13.1
6.	It would improve confidence level for further exercise	Count(n)	93	17	20
		Percentage %	71.5	13.1	15.4
7.	Environment was conducive to learning	Count(n)	83	32	15
		Percentage %	63.8	24.6	11.5
8.	you would be capable of evaluating your own work after the course	Count(n)	86	15	29
		Percentage %	66.2	11.5	22.3
9.	Do you think more topics should be added in your course	Count(n)	33	86	11
		Percentage %	25.4	66.2	8.5
10.	There should be structured manual of the course.	Count(n)	106	8	16
		Percentage %	81.5	6.2	12.3
11.	Going to clinic to observe procedures being done after every clinical exercise is helpful	Count(n)	111	5	14
		Percentage %	85.4	3.8	10.8

**DISCUSSION:**

There is increasing awareness that learner’s views of their educational experiences and responses are crucial in modifying the educational procedure. Therefore,

quantitative data collection methods, primarily surveys, have been widely used to evaluate dental student’s perspective on the effectiveness of courses in areas such as operative dentistry.<sup>8</sup>

Operative skills development in a preclinical setting is of importance for the training of undergraduate students.<sup>9</sup>This study aimed to explore dental student's views regarding the reason and advantages of attending the preclinical course, the learning environment, course content, quality of teaching, learning facilities and the educational resources used by the students. Student's suggestion was also taken into consideration. In our study 113 (86.9%) of the students perception was that the course had motivated them to increase their knowledge regarding techniques and 106 (81.5%) thought course would help them in final year. Ahmed reported in his study that 100% students responded that pre-clinical course had increased their motivation and would help them in final year.<sup>10</sup> More than 80% students perception was that the course would help in better understanding of the subject. Preclinical course really help students to better correlate their theoretical knowledge with clinical application and this integration increase student interest in the subject and at the same time help in better understanding of the subject. In our study 77.7% and 75.4% students perception were that after attending the preclinical course it would be easy to handle the patient and easier to work in clinic respectively. Bianca's study results also suggested that preclinical training on the typodont and in the classroom was related with clinical performance.<sup>11</sup> 11.5% of the students perception was that the course is not related to clinical success. Both Curtis<sup>12</sup> and Nunez<sup>13</sup> studies found that preclinical training was not an accurate interpreter of success in clinic. The literature is full with illustrations regarding self-evaluation which explains that self-evaluation skills of students are not accurate.<sup>14,15</sup> Expert judgement and advice is needed for accurate evaluation yet 66.2% of the second year students stated that they could evaluate their own work after attending the course. This is in direct contrast with studies evaluating the self-assessment skills of students, it showed that students were too assertive when evaluating their own self-assessment skills.<sup>16,17</sup>

In order to match the learning styles of all students learning resources should be different. In our study most of the students use more than one source of study. Some students preferred more difficult textbooks while others relied on notes and handouts. An ideal dental educational setting should aid students to acquire the necessary clinical, theoretical and interpersonal competences and expose them to 'clinical experiences' equivalent to the environment in which they are probably practicing dentistry.<sup>15</sup> In our study 85.4% responded that clinical rotation to observe procedures on patients should be included in the curriculum. 63.8% students thought that the environment was conducive to learning, 32 (24.6%) were not in favour and 11.5% students don't know. In Betsy's survey students also felt that the learning environment contributes to their learning. The working environment has to be optimal in order to get the best out of anyone, whether a teacher or a student. If it is pleasant, the final result is definitely going to be better than if the environment were to be stressful or not so

pleasant.<sup>18</sup> Among dental students the experience of severe anxiety and stress is well-recognized. Stress-related symptoms reported by the students range from mild anxiety to eating and sleep disorders, as well as poor performance, lack of ability to concentrate, aggression, sadness and other devastating effects. Commonly reported sources of stress include academic overload.<sup>19,20,21,22,23,24,25</sup> 81.5% suggested that there should be structured manual of the course. 33.1% and 66.2% students opinion was that the course was too extensive and no more topics should be added.

In this study 35.4% students thought that it is essential part of preparation for clinical dentistry, 28.5% chose they would not have to go directly onto patients without practice, 15.4% attend this course because it make them feel like dentists for the first time and 10.8% students were genuinely interested in having the course. Ahmed's survey also supported our view that it is important preparation for future clinical practice and made them feel like real dentist and increase their interest in the subject.<sup>10</sup>

Students also felt that a good student-teacher relationship facilitates student's learning and leads them to achieve their learning goals.<sup>1</sup> 60.8% students reported that they received enough attention from teacher, 25.4% responded more than enough, 11.5% were not satisfied. Majority of the students were satisfied from the teacher's ability to clarify concept but some students were not, reasons include poor attendance, communication gap between student and teacher, problem with the basic concept.

#### CONCLUSION:

It is important to understand that education is much more than gaining knowledge or training. It is essential to view dental studies from a student centred perspective. In this study majority of the students were in favour of attending the preclinical course and understand its importance in building up their confidence, better understanding of the subject and better patient handling in future dental practice. Course should also be included in first year for better understanding of dental materials. Every preclinical lecture should be accompanied by clinical visits. There should be structured manual for preclinical course for guidance along with especially trained separate teaching faculty should be appointed so that the students receive enough attention and their queries can be better responded.

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