

Problems Encountered by Dental Students in Understanding Oral Histology and Dental Anatomy: A Cross-Sectional Study.

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ABSTRACT

Background: Dental anatomy and oral histology as a subject need comprehensive information for its application in every wake of academic as well as clinical life. It's also the responsibility of the trainers for a brighter prospect and enhancement in their academic field. Aim and objectives of the study: To analyze the problems encountered by the dental students in understanding oral histology and dental anatomy as well as to find out the necessary solutions to overcome these problems. **Methods:** A descriptive cross sectional study will be conducted in the department of Oral Pathology, GDC Srinagar where the prepared questionnaires will be distributed to all the undergraduate students and interns of GDC, Srinagar. The questionnaire will be in the form of multiple choice questions and designed in such a way which will be simple to understand and answer. **Results:** In the present study, dental students have satisfactory knowledge of this concerned discipline of dentistry but there are still gaps between the understanding and interest for this subject in the students. **Conclusion:** In the present study, students felt problems/difficulties which are easy to handle if proper measures are taken. By making few variations in their recent curriculum, it can be make more interesting and comprehensive for the future aspirants.

Keywords: Dental education, Oral histology, Dental anatomy, Knowledge.

INTRODUCTION

With the global program towards ensuring quality in education, greater focus is involved in pursuing feedback and assessing participant's satisfaction. Students are among the key participants in the dental education course since they are the direct beneficiaries of this course. Dental mentors are likely for ensuring a positive academic knowledge for dental students.^[1,2] Special attentions on student-centered education means that the awareness of the student towards their educational atmosphere is important.^[3] Dental health courses need to be continuously evaluated and assessed in order to offer recent technical innovations of dentistry as well as the demands of optimum oral health.^[4] The aim of the professional institutions is to offer utmost educational and environmental services so that the graduate students achieve

judgments on a regular basis. This would aware the staff to difficult situations, and solve them.^[5] It is the responsibility of all dental institutions to confirm that upcoming dentists are being raised in a compassionate manner and the challenging environment encourages education in a positive way. The learning milieu is an essential element of behaviour. Milieu is perceived by students and it is judgements of environment that are associated with behaviour.^[6-8]

Dental anatomy is defined as study of the development, morphology, function, and identity of each of the teeth in the human dentitions, as well as the way in which the teeth relate in shape, form, structure, color, and function to the other teeth in the same dental arch and to the teeth in the opposing arch.^[9] Dental anatomy and oral histology as a subject require in-depth information for its application in every wake of academic as well as clinical life. It's also the duty of the teachers for a brighter prospect and enhancement in their academic field. To the best of our information and after searching various data, no studies were found to be carried out in this respect. The aim of the present study was to analyze the problems encountered by the dental students in understanding oral histology and dental anatomy as well as to find

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Srinagar. Since it is important to view and assess the students

out the necessary solutions to overcome these problems.

MATERIALS AND METHODS

A descriptive cross sectional study was conducted in the department of Oral Pathology, GDC Srinagar where the prepared questionnaires was distributed to all the undergraduate students and interns of GDC, Srinagar. The study was approved by the ethical committee of the college. The questionnaire was pretested, validated and close ended. The validation was determined using Cronbach's alpha for test-retest and its value came out to be 0.90. All the participants were clarified the objectives of the study. The questionnaire was given to each individual and the subjects were requested to respond anonymously but to mention their gender, age and educational qualification. The total study sample of 122 subjects was divided into 5 groups:-

Group I: 27 subjects of BDS 1st year

Group II: 23 subjects of BDS 2nd year

Group III: 21 subjects of BDS 3rd year

Group IV: 31 subjects of BDS Final year

Group V: 20 subjects of Interns

Those internship subjects who had done BDS from outside and postgraduate students of this institution were excluded from the study. The questionnaire was in the form of multiple choice questions and consisted of two, three and four alternatives as well as aimed in such a way which was easy to understand and answer. The questionnaire composed of three parts with part A included demographic details, part B comprised of 10 questions focusing on dental anatomy & oral histology theory as well as part C consisted of 10 questions focusing on dental anatomy & oral histology practical. The data was collected and statistically analysed with the help of SPSS

software (statistical package for social sciences) version 21.0 using Pearson chi-square test, Pearson correlation coefficient test and Cronbach's alpha reliability test. A probability value of < 0.05 was considered to be statistically significant.

RESULTS

All the 122 participants were responded to questionnaire. Out of these, 82 (67.2%) were females and 40 (32.8%). The results in [Table 1] showed 35.2% of the participants have attended all theory classes and the results were found to be statistically significant. Out of 122 participants, 45.1% of the students spent 3 days in a week in theory classes and majority of the students (82.8%) understood the topics covered in the theory classes. The results were found to be statistically significant. In this study, 42.6% of the students stated that the topics discussed in the classes will be useful in future and the results were significant. In the present study, 21.3 % of the students asked the staff to discuss the topic again, in case of problems but 54.1% of the students sometimes asked the staff for the same and the results were found to be statistically significant. A 60.7% of the students felt that the lectures taken by the staff provide an in depth view of the subject and the results were not significant. Most of the students (82%) satisfied with the teaching skills of staff with statistically significant results. A total of 57 (46.7%) students felt that internet, books and notes can be a good source of knowledge and the results were not significant. Out of 122 students, only 42 students have presented seminars with statistically significant results. In the present study, 59.8% of the students have encountered difficulties in understanding and remembering oral histology. The results were not significant.

Table 1: Questions focusing on dental anatomy & oral histology theory

S. No	Questions	Answers	Group I	Group II	Group III	Group IV	Group V	Total	Chi-square	P-value
Q1.	Have you attended all theory classes in dental anatomy & Oral histology?	Yes	5 (18.5%)	6 (26.1%)	7 (33.3%)	17 (54.8%)	8 (40%)	43 (35.2%)	9.60	0.043*
		No	22 (81.5%)	17 (73.9%)	14 (66.7%)	14 (45.2%)	12 (60%)	79 (64.8%)		
Q2.	How many days in a week do you have theory class?	3	16 (59.3%)	0 (0)	12 (57.1%)	15 (48.4%)	12 (60%)	55 (45.1%)	39.90	<0.001*
		2	1 (3.7%)	9 (39.1%)	3 (14.3%)	7 (22.6%)	3 (15%)	23 (18.9%)		
		4	5 (18.5%)	1 (4.3%)	1 (4.8%)	0 (0)	0 (0)	7 (5.7%)		
		5	5 (18.5%)	13 (56.5%)	5 (23.8%)	9 (29%)	5 (25%)	37 (30.3%)		
Q3.	Do you understand the topics covered in the theory class?	Yes	16 (59.3%)	18 (78.3%)	20 (95.2%)	29 (93.5%)	18 (90%)	101 (82.8%)	16.35	0.003*
		No	11 (40.7%)	5 (21.7%)	1 (4.8%)	2 (6.5%)	2 (10%)	21 (17.2%)		

Q4.	What type of response produced in your mind after completion of topics in classes?	Interesting and encourage further teaching	9 (33.3%)	9 (39.1%)	8 (38.1%)	10 (32.3%)	9 (45%)	45 (36.9%)	31.85	0.001*
		Difficult and think never attend the class	7 (25.9%)	1 (4.3%)	0 (0)	5 (16.1%)	2 (10%)	15 (12.3%)		
		Useful in future	9 (33.3%)	6 (26.1%)	13 (61.9%)	16 (51.6%)	8 (40%)	52 (42.6%)		
		None of the above	2 (7.4%)	7 (30.4%)	0 (0)	0 (0)	1 (5%)	10 (8.2%)		
Q5.	Have you asked your staff to discuss the topic again, in case of problems?	Yes	4 (14.8%)	3 (13%)	1 (4.8%)	12 (38.7%)	6 (30%)	26 (21.3%)	51.91	<0.001*
		No	11 (40.7%)	4 (17.4%)	2 (9.5%)	0 (0)	0 (0)	17 (13.9%)		
		Sometimes	11 (40.7%)	8 (34.8%)	17 (81%)	17 (54.8%)	13 (65%)	66 (54.1%)		
		Occasionally	1 (3.7%)	8 (34.8%)	1 (4.8%)	2 (6.5%)	1 (5%)	13 (10.7%)		
Q6.	Have the number of lectures taken by the staff sufficient to provide an in-depth view of the subject?	Yes	13 (48.1%)	20 (87%)	11 (52.4%)	20 (64.5%)	10 (50%)	74 (60.7%)	10.18	0.071
		No	14 (51.9%)	3 (13%)	10 (47.6%)	11 (35.5%)	10 (50%)	48 (39.3%)		
Q7.	Have you satisfied with the teaching skills of your staff?	Yes	17 (63%)	15 (65.2%)	21 (100%)	28 (90.3%)	19 (95%)	100 (82%)	19.35	0.002*
		No	10 (37%)	8 (34.8%)	0 (0)	3 (9.7%)	1 (5%)	22 (18%)		
Q8.	What is your basic source of knowledge about the topics?	Internet	1 (3.7%)	2 (8.7%)	0 (0)	3 (9.7%)	2 (10%)	8 (6.6%)	15.07	0.231
		Books	8 (29.6%)	15 (65.2%)	12 (57.1%)	11 (35.5%)	9 (45%)	55 (45.1%)		
		Notes	1 (3.7%)	0 (0)	1 (4.8%)	0 (0)	0 (0)	2 (1.6%)		
		All of the above	17 (63%)	6 (26.1%)	8 (38.1%)	17 (54.8%)	9 (45%)	57 (46.7%)		
Q9.	Have you presented seminars related to oral histology or dental anatomy?	Yes	3 (11.1%)	6 (26.1%)	12 (57.1%)	15 (48.4%)	6 (30%)	42 (34.4%)	14.86	0.002*
		No	24 (88.9%)	17 (73.9%)	9 (42.9%)	16 (51.6%)	14 (70%)	80 (65.6%)		
Q10.	In which subject have you encountered difficulties in understanding and remembering?	Dental anatomy	11 (40.7%)	13 (56.5%)	11 (52.4%)	9 (29%)	5 (25%)	49 (40.2%)	7.38	0.194
		Oral histology	16 (59.3%)	10 (43.5%)	10 (47.6%)	22 (71%)	15 (75%)	73 (59.8%)		

*Statistically Significant Difference (P-value<0.05) Group I: BDS 1st year, Group II: BDS 2nd year, Group III: BDS 3rd year, Group IV: BDS Final year, Group V: Interns

Table 2: Questions focusing on dental anatomy & oral histology practical

S. No	Questions	Answers	Group I	Group II	Group III	Group IV	Group V	Total	Chi-square	P-value
Q1.	How many days do you have practical classes in a week?	3	8 (29.6%)	0 (0)	2 (9.5%)	24 (77.4%)	11 (55%)	45 (36.9%)	45.503	<0.001*
		2	19 (70.4%)	23 (100%)	19 (90.5%)	7 (22.6%)	9 (45%)	77 (63.1%)		
		4	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)		
		5	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)		
Q2.	Have you attended all classes related to carving and slides?	Yes	12 (44.4%)	12 (52.2%)	11 (52.4%)	24 (77.4%)	12 (60%)	71 (58.2%)	7.47	0.113
		No	15 (55.6%)	11 (47.8%)	10 (47.6%)	7 (22.6%)	8 (40%)	51 (41.8%)		
Q3.	Do you feel difficulty in carving a tooth?	Yes	16 (59.3%)	18 (78.3%)	13 (61.9%)	7 (22.6%)	4 (20%)	58 (47.5%)	32.36	<0.001*
		No	11 (40.7%)	5 (21.7%)	8 (38.1%)	24 (77.4%)	16 (80%)	64 (52.5%)		
Q4.	How often have you	Daily	2 (7.4%)	2 (8.7%)	1 (4.8%)	5 (16.1%)	2 (10%)	12 (9.8%)	13.57	0.331

	viewed oral histology atlas?	Before practical	6 (22.2%)	6 (26.1%)	12 (57.1%)	15 (48.4%)	9 (45%)	48 (39.3%)		
		Before exam	10 (37%)	8 (34.8%)	4 (19%)	7 (22.6%)	6 (30%)	35 (28.7%)		
		Never	9 (33.3%)	7 (30.4%)	4 (19%)	4 (12.9%)	3 (15%)	27 (22.1%)		
Q5.	Do you make an effort to read and understand the tooth before you can carve?	Yes	10 (37%)	11 (47.8%)	14 (66.7%)	26 (83.9%)	14 (70%)	75 (61.5%)	33.53	<0.001*
		No	4 (14.8%)	5 (21.7%)	0 (0)	3 (9.7%)	1 (5%)	13 (10.7%)		
		Sometimes	12 (44.4%)	5 (21.7%)	5 (23.8%)	0 (0)	1 (5%)	23 (18.9%)		
		Occasionally	1 (3.7%)	2 (8.7%)	2 (9.5%)	2 (6.5%)	4 (20%)	11 (9%)		
Q6.	Have you identified the histological features seen on a slide?	Very well	1 (3.7%)	2 (8.7%)	4 (19%)	8 (25.8%)	3 (15%)	18 (14.8%)	28.86	0.003*
		Well	10 (37%)	12 (52.2%)	6 (28.6%)	16 (51.6%)	8 (40%)	52 (42.6%)		
		Sometimes	11 (40.7%)	9 (39.1%)	11 (52.4%)	7 (22.6%)	9 (45%)	47 (38.5%)		
		Never	5 (18.5%)	0 (0)	0 (0)	0 (0)	0 (0)	5 (4.1%)		
Q7.	Have you read the histology topics before you can see the slides?	Yes	17 (63%)	18 (78.3%)	21 (100%)	26 (83.9%)	17 (85%)	99 (81.1%)	11.19	0.024*
		No	10 (37%)	5 (21.7%)	0 (0)	5 (16.1%)	3 (15%)	23 (18.9%)		
Q8.	Do you draw histological diagram for each slide?	Yes	8 (29.6%)	20 (87%)	20 (95.2%)	28 (90.3%)	18 (90%)	94 (77%)	48.74	<0.001*
		No	8 (29.6%)	0 (0)	1 (4.8%)	3 (9.7%)	1 (5%)	13 (10.7%)		
		Sometimes	10 (37%)	3 (13%)	0 (0)	0 (0)	1 (5%)	14 (11.5%)		
		Occasionally	1 (3.7%)	0 (0)	0 (0)	0 (0)	0 (0)	1 (0.8%)		
Q9.	What is the main problem having you faced during practical exam?	Identification	1 (3.7%)	5 (21.7%)	7 (33.3%)	13 (41.9%)	8 (40%)	34 (27.9%)	70.53	<0.001*
		Drawing	7 (25.9%)	13 (56.5%)	14 (66.7%)	18 (58.1%)	12 (60%)	64 (52.5%)		
		Remembering	3 (11.1%)	3 (13%)	0 (0)	0 (0)	0 (0)	6 (4.9%)		
		All of the above	16 (59.3%)	2 (8.7%)	0 (0)	0 (0)	0 (0)	18 (14.8%)		
Q10.	Do you practice for histological diagrams before your exam?	Yes	11 (40.7%)	20 (87%)	20 (95.2%)	26 (83.9%)	18 (90%)	95 (77.9%)	28.73	<0.001*

*Statistically Significant Difference (P-value<0.05) Group I: BDS 1st year, Group II: BDS 2nd year, Group III: BDS 3rd year, Group IV: BDS Final year, Group V: Interns

The results in [Table 2] revealed that 63.1% of the students have spent 3 days in a week in practical classes and the results were found to be statistically significant. Out of 122 participants, 58.2% (77) students have attended all classes related to carving and slides with non-significant results. A total of 52.5% of the students have felt difficulty in carving a tooth and the results were significant. Out of 122 students, 9.8% and 39.3% of the students have viewed oral histology atlas daily and before practical respectively. The results were not significant. In the present study, 61.5 % of the students have made an effort to read and understand the tooth before carving with a statistically significant result. This study revealed that only 14.8 % of the students have very well

identified the histological features seen on a slide with a significant result. Majority of the participants (81.1%) have read the histology topics before viewing the slides and the results were found to be significant. Out of 122 participants, 81.1% have drawn histological diagram for each slide and the results were significant. Out of 122 students, 77% students have drawn histological diagram for each slide with significant results. A 52.5 % of the students felt that the greatest difficulty that they face is drawing whereas 27.9 % students felt that identification during exam is the main difficulty. The results were found to be statistically significant. Most of the students (77.9%) have practiced for histological diagram before exam with a statistically significant result.

DISCUSSION

A cross-sectional study was conducted to determine the problems/ difficulties faced by the dental students in oral histology and dental anatomy theory as well as practical classes. In the present study, 64.8 % students have not attended all theory classes in dental anatomy and oral histology as well as 40.2% participants have encountered difficulties in understanding and remembering dental anatomy. Out of 122 students, 52.5 % of the students felt that the greatest difficulty that they face during practical exam is drawing the histological slides. The performance can be enhanced by the digitalization of slides as well as students have to put an effort for making the histological diagram. In this study, dental students have satisfactory knowledge of this concerned discipline of dentistry but there are still gaps between the understanding and interest for this subject in the students. It can be due to the fact that the students consider this subject as a non-clinical having a lesser scope for practice. This can be modified by introducing 3D animation technology so as to make the classes more interactive and interesting.^[10] These innovative ideas modify the curriculum so that the students may show more interest in their studies. Learning milieu means the culture of a class, school or an institution and its governing codes & characteristics, including how students perceive that environment, as well as the way in which the teachers may organize the educational curriculum to facilitate learning.^[11,12] Thus, an effort to make and maintain a supportive atmosphere for study, without compromising on quality of teaching and this can only be accomplished through student's response and improvements in the curriculum done by the institutions. Dental mentors are responsible for good learning opportunities which act as motivators for students as well as best teaching promotes quality.^[13,14]

CONCLUSION

The present study determined that the problems/difficulties of dental students in their recent curriculum in the subject of dental anatomy and oral histology theory as well as practical classes. They felt difficulties which are easy to handle if proper measures are taken. By making few variations in their recent curriculum, it can be made more interesting and comprehensive for the future aspirants.

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