### **Original Article**

# Perception and willingness toward oral pathology and histology as a subject and profession among Indian dental undergraduates

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#### ABSTRACT

**Background:** Oral pathology, a branch of dentistry which is often termed as a nonclinical branch deserves a better description as fundamental knowledge of oral pathology is essential to become a successful dental clinician. This study was conducted to analyze the approach toward Oral Pathology and Histology as a subject and profession among dental undergraduates.

**Materials and Methods:** A questionnaire-based, cross-sectional study was conducted among 200 students which included the 3<sup>rd</sup> year, 4<sup>th</sup> year and interns studying in a Dental College in Gurugram, Haryana. The questionnaire comprised 14 close-ended questions, divided under three parameters which included demographic characteristics, students' perception about the Oral Pathology and Histology as a subject, and willingness to choose it as a career option. The data recorded was subjected to statistical analysis using the Chi-square test. The level of statistical significance was set at  $P \leq 0.05$ .

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Address for correspondence: Dr. Charu Khurana, National Oral Health Programme, Centre for Dental Education and Research, AIIMS, New Delhi, India. E-mail: drcharukhurana@ gmail.com **Results:** Among all the participants, 53 (26.5%) were males and 147 (73.5%) were females. It was found that 33.5% of the total students find the subject interesting, but 24.5% students reported their main focus on just passing this subject. Although they reported liking toward the subject, majority of them (64%) did not express their interest to pursue it as their postgraduation specialty. **Conclusion:** The present scenario of Oral Pathology and Histology as a subject is alarming and in that scenario it should be our prime concern to change the attitude of students toward the subject who perceive it as a nonclinical subject having a lesser scope for practice with a need to broaden the scope of the specialty and to make it more practical.

Key Words: Attitude, dental students, oral pathology, scenario

### INTRODUCTION

"As is our pathology, so is our practice. What the Pathologist thinks today, the Physician does tomorrow."

-Sir William Osler

With the establishment of the American Academy of Oral Pathology in 1946, the profession of Oral

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Website: www.drj.ir www.drjjournal.net www.ncbi.nlm.nih.gov/pmc/journals/1480 and Maxillofacial Pathology officially marked its beginning. This gave recognition to those who had advanced training and education in this specialty area. There are various important and expanding roles of Oral and Maxillofacial Pathologists which have been documented including microscopic diagnosis of

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oral and head and neck disease, dental and medical education, hospital-associated practice as well as research and independent practice.<sup>[1]</sup> The specialty serves as a unique link between basic medical sciences and clinical dental practice.<sup>[2]</sup> However with time Oral Pathologists have confined themselves into only academics giving an impression that it is a nonclinical subject having a lesser scope for practice.

Oral pathologists can not only observe and identify the gross manifestations of disease but also can appreciate and understand its microscopic manifestations. The tremendous growth in molecular-based techniques, immunology, genetics and broadens scope of this branch to a great height.<sup>[1]</sup>

This subject is taught in 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> year to the students of Bachelor of Dental Surgery (BDS). It plays a very important role in laying down the foundation for dental students as the attainment of successful treatment lies in understanding the pathogenesis of the disease.<sup>[2]</sup> Thus, from the beginning of dentistry itself, positive attitude should be inculcated toward the subject among the students.

This study was undertaken with the purpose to analyze the perception and willingness of dental undergraduates toward Oral Pathology and Histology as subject and profession with an objective to understand whether the dental students study this subject with an aim to apply the knowledge at a later stage when they will practice dentistry or with perception to only pass the examinations.

### MATERIALS AND METHODS

**Study design, study setting and study population** This is a descriptive cross-sectional study conducted among dental students in a Dental College in Gurugram city, Haryana. Students belonging to 3<sup>rd</sup> year, 4<sup>th</sup> year, and internship were approached for their participation in the study.

Pilot study was conducted on 40 participants, in which 16% of them showed positive interest toward the subject. A minimum sample size of 200 came out to test the hypothesis with 95% confidence interval and 80% power to reject the null hypothesis.

### **Ethical considerations**

Ethical clearance was obtained before conducting the study from the Ethical Review Board of the Institute. Formal consent was obtained from all the students and was informed about the nature of the study, and confidentiality was assured. Students who were absent on the days of the study and who were not willing to participate were excluded from the study. The study was carried out for 3 months from August to October 2018.

#### **Study questionnaire**

A self-administered, 14-item questionnaire adapted from a study done by Chaturvedi *et al.* and Gowhar was used to collect data in the present study<sup>[3,4]</sup> [Annexure 1]. Test-retest reliability was performed to test the reliability and internal consistency of the questionnaire, it was found to be good with Cronbach's alpha 0.75. The comprehensiveness of the questionnaire was optimized using content and face validity before the main study.

The questionnaire consisted of three sections; the first section included demographic details including gender, age, and year of the study; the second section was about the perception of dental students toward the Oral Pathology and Histology as a subject and the third section was directed toward the willingness of undergraduates considering Oral Pathology and Histology as their future career. This study was completed during regularly scheduled class sessions in an average time of 10 min.

#### **Statistical analysis**

Descriptive analysis was undertaken to present the findings from this study. The collected data were entered into Microsoft Excel 2007 and subjected to statistical analysis using the Statistical Package for the Social Sciences version 20 (IBM, Chicago Inc., IL, USA). Both descriptive and inferential statistics were computed. Differences between different groups were examined using the Chi-square test for proportions. The level of statistical significance was set at  $P \leq 0.05$ .

### **RESULTS**

A total of 200 students aged 20–25 years selected using nonprobability sampling method (convenience) participated in this study. The students were divided into three groups according to their year of the study, in which BDS interns 85 (42.5%) represented a slightly larger proportion of the study population followed by 4<sup>th</sup> year students (37.5%) and 3<sup>rd</sup> year students (20%) [Table 1].

In response to the question, what do they feel about the subject; 62% students responded it as a

research-oriented subject, whereas 24.5% students chose it as a subject just to clear their  $3^{rd}$  year BDS. Although, majority of students (63.5%) felt that this subject forms the base for all clinical subjects, still 22% of them thought that classes for this subject can be missed for other curricular activities. It could be because the subject is more theoretical. Oral Pathology and Histology was reported as a boring subject in comparison to any other subject by 40% of the total students and on statistical evaluation on comparison between students based on their year of study; the result to this question was found to be very highly significant (P < 0.001) [Tables 2 and 3].

The willingness to choose Oral Pathology and Histology as a profession was also investigated among the students and the results are presented in Tables 4 and 5. There was a significant difference (P = 0.05) in response to the question if they wish to pursue postgraduation in the subject or not based on their year of studying BDS. More than half of the

### Table 1: Demographic details of dental students(n=200)

Variable	n (%)
Gender	
Male	53 (26.5)
Female	147 (73.5)
Age (years)	
19-20	28 (14)
21-22	70 (35)
≥23 years	102 (51)
Year of study	
3 <sup>rd</sup> year BDS	40 (20)
4 <sup>th</sup> year BDS	75 (37.5)
Interns	85 (42.5)

students (62%) had plan to go for Master of Dental Surgery, but if they have an option to choose majority of them (64%) would not opt for postgraduation in Oral Pathology though a big chunk (20%) was yet in dilemma and they marked it as ("may be"). When students were asked about their reason to opt this subject for postgraduation, most common cited reason was 'inability to get admission in other specialty'.

Students also reported lack of jobs and subject being not helpful in clinical work as the common reason for not opting postgraduation in this subject. Making postgraduation in Oral Pathology recognized by foreign universities (30%), inclusion of Forensic Odontology in the subject (47.5%) and separation of Dental Anatomy and Dental Histology (DADH), and Oral Pathology in two departments (22.5%) were some modifications recommended by students to make them opt this subject as their profession [Tables 4 and 5].

Oral Pathologists do not treat patients was the perception of most of the students. Majority of them reported it as a nonclinical branch and they are made to feel so by their batch mates, seniors and fellow practitioners. Overall, there was a good and significant amount of agreement (P < 0.001) among all the students over Oral Pathology subject as a nonclinical subject [Table 6].

### DISCUSSION

The prime motive for choosing future career options among dental students as found in various studies ranges from financial security, independent,

Table 2: Perception towards Oral Pathology and Histology as a subject among the students bas	sed on
gender ( <i>n</i> =200)	

Question	Options		<b>Student's</b> , <i>n</i> (%)			
		Males	Females	Total		
What do you feel about this	A Research Oriented	27 (50.9)	97 (65.9)	124 (62)	0.61	
subject?	Clinical	06 (11.3)	21 (14.2)	27 (13.5)		
	A subject to clear 3 <sup>rd</sup> year BDS	20 (37.7)	29 (19.7)	49 (24.5)		
Do you feel this Subject forms	Yes	19 (35.8)	108 (73.4)	127 (63.5)	0.04*	
base for all clinical subjects	No	9 (16.9%)	23 (15.6)	32 (16)		
	May Be	25 (47.1%)	16 (10.8)	41 (20.5)		
Do you think attending this subject	Yes	10 (18.8)	34 (23.1)	44 (22)	0.57	
classes is not very important	No	32 (60.3)	75 (51.02)	107 (53.5)		
	Sometimes	11 (20.7)	38 (25.8)	49 (24.5)		
How do you find this subject	Interesting	21 (39.6)	46 (31.2)	67 (33.5)	0.48	
comparatively to other subjects	Boring	20 (37.7)	60 (40.8)	80 (40)		
	Any Other	12 (22.6)	41 (27.8)	53 (26.5)		

Chi-square test;\*P≤0.05 (significant)

## Table 3: Perception towards Oral Pathology and Histology as a subject among the students based on year of study (*n*=200)

Question	Options		Student's, <i>n</i> (%)			
		3 <sup>rd</sup> Year	4th Year	Interns	Total	
What do you feel about this	A Research Oriented	20 (50)	45 (60)	59 (69.4)	124 (62)	
subject?	Clinical	12 (30)	7 (9.3)	8 (9.41)	27 (13.5)	0.008*
	A subject to clear 3rd year BDS	8 (20)	23 (30.7)	18 (21.1)	49 (24.5)	
Do you feel this Subject forms	Yes	27 (67.5)	48 (64)	52 (61.1)	127 (63.5)	
base for all clinical subjects	No	7 (17.5)	13 (17.3)	12 (14.1)	32 (16)	0.355
	May Be	6 (15)	14 (18.6)	21 (24.7)	41 (20.5)	
Do you think attending this subject	Yes	11 (27.5)	14 (18.6)	19 (22.3)	44 (22)	
classes is not very important	No	20 (50)	39 (52)	48 (56.4)	107 (53.5)	0.197
	Sometimes	9 (22.5)	22 (29.3)	18 (21.1)	49 (24.5)	
How do you find this subject	Interesting	23 (57.5)	28 (37.3)	16 (18.8)	67 (33.5)	
comparatively to other subjects	Boring	10 (25)	29 (38.6)	41 (48.2)	80 (40)	0.001*
	Any Other	7 (17.5)	18 (24)	28 (32.9)	53 (26.5)	

Chi-square test;\*P≤0.05 (significant)

### Table 4: Responses regarding willingness to choose Oral Pathology and Histology as a profession among the students based on gender (*n*=200)

Question	Options		Student's, <i>n</i> (%)		
		Males	Females	Total	
Do you want to pursue	Yes	40 (75.4)	84 (57.1)	124 (62)	0.72
Post graduation	No	13 (24.5)	63 (42.8)	76 (38)	
Would you like to Opt Oral	Yes	07 (13.2)	25 (17)	32 (16)	0.78
Pathology and Histology	No	41 (77.3)	87 (59.1)	128 (64)	
subject as a profession	May Be	05 (9.4)	35 (23.8)	40 (20)	
What would be the reason	Interested in the subject	05 (9.4)	21 (14.2)	26 (13)	0.61
if you choose this subject	Unable to get admission in other branches	15 (28.3)	101 (68.7)	116 (58)	
as your profession	Need a PG degree for private practice	33 (62.2)	25 (17)	58 (29)	
What do you think is	Not interested	05 (9.4)	34 (23.1)	39 (19.5)	0.03*
the reason to not to opt this subject for Postgraduation (PG)	Less consultation	05 (9.4)	38 (25.8)	43 (21.5)	
	Scarcity of Jobs	05 (9.4)	47 (31.9)	52 (26)	
	Not helpful in clinical practice	38 (71.6)	28 (19.04)	66 (33)	
What could be done to modify PG Curriculum of	Inclusion of Forensic Odontology	20 (37.7)	75 (51.02)	95 (47.5)	0.05*
	Separation of D.A.D.H. and Oral Pathology subject to create more Jobs	12 (22.6)	33 (22.4)	45 (22.5)	
this subject to make you opt it as a profession	Making PG in this subject recognised by foreign universities	21 (39.6)	39 (26.5)	60 (30)	

Chi-square test;  $P \le 0.05$  (significant)

specialized professional, job satisfaction, status, and interest to service to the common man.<sup>[5]</sup> Oral Pathology and Histology is not one of the first choices of undergraduates to pursue postgraduation after passing BDS. Though this is definitely disheartening to know, if possible requisite changes can be made in the way of delivering training in Oral Pathology, it would surely enliven the spirits of dental graduates to take up this branch as their specialty.<sup>[2,3]</sup>

Unfortunately in India, of all the various Disciplines of Dentistry, Oral Pathology, and Histology is the one which is often given least importance by dental colleges, which is evident from the paucity of postgraduate (PG) seats which are available in the country. It is because of the attraction of clinical dental specialties for dental undergraduates for various reasons.<sup>[6]</sup> The situation is slightly different in the field of medicine. Though medical students are more attracted toward clinical specialties such as surgery, obstetrics and gynecology, and pediatrics, they would consider pathology subject favorably for PG training.<sup>[7,8]</sup>

Keeping this in view, the present study was conducted and it was observed that 62% of students find it as a research-oriented subject, whereas 24.5% students feel that it is a subject just to clear their 3<sup>rd</sup> year BDS. Hence if more areas or institutions come up with a research facility, this group of students will

# Table 5: Responses regarding willingness to choose Oral Pathology and Histology as a profession among the students based on year of study (*n*=200)

Question	Options		Student's, n (%)			
		3 <sup>rd</sup> year	4 <sup>th</sup> year	Interns	Total	
Do you want to pursue	Yes	23 (57.5)	46 (61.3)	55 (64.7)	124 (62)	0.05*
Post graduation	No	17 (42.5)	29 (38.6)	30 (35.2)	76 (38)	
Would you like to Opt Oral	Yes	7 (17.5)	13 (17.3)	12 (14.1)	32 (16)	
Pathology and Histology	No	28 (70)	48 (64)	52 (61.1)	128 (64)	0.35
subject as a profession	May Be	5 (12.5)	14 (18.7)	21 (24.7)	40 (20)	
What would be the reason	Interested in the subject	6 (15)	14 (18.6)	6 (7.05)	26 (13)	
if you choose this subject as your profession	Unable to get admission in other branches	27 (67.5)	38 (50.6)	51 (60)	116 (58)	0.07
	Need a PG degree for private practice	7 (17.5)	23 (30.6)	28 (32.9)	58 (29)	
What do you think is the reason to not to	Not interested	8 (20)	12 (16)	19 (22.3)	39 (19.5)	
	Less consultation	9 (22.5)	18 (24)	16 (18.8)	43 (21.5)	0.55
opt this subject for	Scarcity of Jobs	12 (30)	20 (26.6)	20 (23.5)	52 (26)	
Post-Graduation (PG)	Not helpful in clinical practice	11 (27.5)	25 (33.3)	30 (35.2)	66 (33)	
What could be done to modify PG Curriculum of this subject to make you	Inclusion of Forensic Odontology	20 (50)	35 (46.6)	40 (47.05)	95 (47.5)	
	Separation of D.A.D.H. and Oral Pathology subject to create more Jobs	8 (20)	16 (21.3)	21 (24.7)	45 (22.5)	0.48
opt it as a profession	Making PG in this subject recognised by foreign universities	12 (30)	24 (32)	24 (28.2)	60 (30)	

Chi-square test;\* $P \le 0.05$  (significant)

## Table 6: Correlation between different responses towards Oral Pathology and histology as a non clinical subject (*n*=200)

Question	Pearson Correlation	Do you think Oral Pathologists do not treat patients	Do you made to think Oral Pathology and Histology is a non clinical branch by seniors and fellow practitioners
Do you think Oral Pathologists do	Pearson Correlation	1	0.747**
not treat patients	Sig. (2-tailed)		0.000
	n	200	200
Do you made to think Oral Pathology	Pearson Correlation	0.747**	1
and Histology is a non clinical branch by fellow practitioners	Sig. (2-tailed)	0.000	
	п	200	200

\*\*Correlation is significant at the 0.01 level (2-tailed)

definitely have an inclination toward oral pathology. Majority of the students (63.5%) felt this subject forms the base for all the clinical subjects. However, some percentage of the students (22%) finds the subject boring and feels they can miss the classes for other curricular activities. There is a need to make students understand that the knowledge of Oral Pathology can be applied in their clinical practice. Hence, should be studied with more interest and dedication.

The study showed that maximum undergraduate students are interested in doing postgraduation (62%) and they preferred clinical branches over oral pathology as they may get consultations and may have more job opportunities. However, those who are left with no choice and also have financial issues but wish to pursue postgraduation select this subject and this is due to their strong belief that in a clinical practice patients prefer a PG Doctor rather than BDS Dentist. Furthermore, we are aware that there are few jobs available and it matters when a student is deciding to opt for oral pathology. Students' financial issues and their rank is not in our hands, but if there is increase in consultation practice for oral pathologists and there is separation of DADH and oral pathology we can increase the job opportunities and this can attract more students toward this subject. Furthermore, if there is a possibility that government creates jobs at primary health center level for oral pathologists, this will create more job opportunities for budding masters.<sup>[9]</sup> Oral pathology is the epitome of research in so if we make larger area for research available with sufficient infrastructure and provide funding for research in the various Dental Institutions across the country, could definitely bring better results. Hence, research in oral pathology and histology will not remain confined to PG dissertations.<sup>[2]</sup>

Students feel that since oral pathologists do not deal directly with the patients and do not treat them, oral pathology is not interesting, but there is a need to explain to them that oral pathologists are capable of treating patients as good as other branches. However, as per the trend normally patients are treated by other departments.<sup>[9]</sup> It is important to understand that many leading practitioners in the society are oral pathologists and these examples should be quoted to them frequently.

Overall attitude toward the specialty was significantly less among male students as compared to females, which may be due to their delusion about oral pathology as a nonclinical specialty and not including clinical training and so "loss of hands" on dental practice. Other reasons regarding less interest toward oral pathology among male students may be lower income and more dependency on the job as compared to other specialties of dentistry.<sup>[5]</sup>

Thus, there is a need for discussions with our colleagues in our respective institutions and make them understand the importance of oral pathology in clinical practice so that the same message is passed on to the students as well.

Last but not the least, there is a need to reinforce among the students that majority of the questions in entrance exams are often from Oral Pathology and DADH so they should be studying this subject with more interest for their own benefit.

It is important to understand and realize that oral pathology is a rare specialty where research meets practice. We, oral pathologists meet the patients, observe them clinically, investigate the cause and then give the final histologic diagnosis.<sup>[10,11]</sup> Thus, we have the unique opportunity to conduct research and later apply the same into clinical practice. It is of no use to sit quietly and witness everything wrong happening to our subject all around.<sup>[12,13]</sup>

*"Everything is destined to fall apart unless you are determined to keep it right!!"* The Specialty of Oral Pathology is going through a very tough phase despite of being one of the most integral branches of dentistry. It seems as if there is darkness all around, but in spite of this, we need to generate a ray of new hope among our undergraduate students so that we can save our sinking ship.<sup>[14]</sup> We should stop waiting for the Newton's apple to fall on our head rather we have to start thinking now. We only need to change the attitude of our students, our fellow colleagues,

and above all ourselves. Our branch was and is well established so we just have to stay positive.

### Limitation of the study

The number of respondents in the present study is low. Due to this limitation, the present results should be viewed as preliminary. Further studies with larger sample sizes, which involve the different colleges from the entire country, are needed to know the attitude of dental students toward choosing Oral Pathology and Histology as their future career.

### CONCLUSION

To pursue specialization in dentistry has become very essential to fulfill the need for being constantly updated for professional and economic stability in today's competitive world.<sup>[15,16]</sup> Majority of the participants (64%) in this study did not want to pursue postgraduation in oral pathology and histology. Furthermore, a significant positive correlation (P < 0.001) was observed between students' and their seniors and fellow practitioners' thinking about this subject as professionals' noninvolvement in treating patients Thus, the specialty needs to be projected well among dental students to increase their interest in the discipline having lucrative career option. A high level of variation in perception toward the subject between students from different year of the study was found in our study which was also statistically significant.

### Recommendations

- PG dental education programs for specialization in dentistry should be developed on a planned basis by giving appropriate weight to factors, such as the need, and the stage of professional development and related social and economic factors in a given country
- Proper orientation on the oral pathology and histology subject from the under graduation level is the need of the hour. Prior counseling of the students who are not aware of future prospects of the subject should be done
- During the formative years (BDS); the student should be given chance to get involved into histopathological diagnosis of the lesions be it the simpler ones; so that students get acquainted with the histopathological world of diagnosis and develop their keen interest in the same
- There is a need to broaden the scope of the specialty and to make it more practical such as laser biopsy/treatment courses can be added as super specialty disciplines

• It is necessary to change the perception toward the subject from just being a lucrative teaching option in terms of financial interests, to a specialty providing oral path laboratories which is much useful to the people of the country.

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#### **Conflicts of interest**

The authors of this manuscript declare that they have no conflicts of interest, real or perceived, financial or non-financial in this article.

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### **ANNEXURE I**

### **Demographic details**

- 1. Name
- 2. Age
- 3. Gender: Male/female
- 4. Year of Study: Third year BDS/4th year BDS/Intern.

### Perception towards oral pathology and histology as subject among the students

- 5. What do you feel about Oral Pathology subject?
  - a. A research oriented subject
  - b. A clinical subject
  - c. A Subject to clear 3rd year BDS
- 6. Do you feel the Subject of Oral Pathology and histology forms base of all clinical subjects?
  - a. Yes
  - b. No
  - c. Maybe
- 7. Do you think attending this subject classes is not very important
  - a. Yes
  - b. No
  - c. Maybe

- 8. How do you find Oral Pathology and histology subject comparatively to other subjects?
  - a. Interesting
  - b. Boring
  - c. Any other.

Willingness to choose oral pathology and histology as a profession among the students

- 9. Do you want to pursue Postgraduation?
  - a. Yes
  - b. No

10. Would you like to Opt Oral Pathology and Histology as a profession

- a. Yes
- b. No
- c. May be
- 11. What would be the reason if you choose this subject as your profession?
  - a. Interested in the subject
  - b. Unable to get admission in others
  - c. Need a PG degree for private practice
- 12. What could be done to modify postgraduation (PG) curriculum of this subject to make you choose it as a profession
  - a. Inclusion of forensic odontology
  - b. Separation of Dental Anatomy and Dental Histology (DADH) from Oral Pathology subject to create more Jobs
  - c. Making PG in this subject recognized by foreign universities
- 13.Do you feel oral pathologist do not deal with patients?
  - a. Yes
  - b. No
  - c. Sometimes

14. Are you made to think that Oral Pathology is just a nonclinical branch by seniors and fellow Practitioners?

- a. Yes
- b. No
- c. Sometimes