

Cumulative Effects of Histology Course on Pathology Curriculum: A Dental Student's Perspective

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ABSTRACT

Aim: The way students perceive and express their thoughts significantly influences their success in academics. The purpose of this study was to investigate how the first-year general histology course influences medical students' perceptions of pathology in the second year of dental school. The survey assessed students' perspectives on studying the body, their opinions on their initial year's histology and subsequent year's pathology courses, and their sentiments regarding the integration of these classes.

Method: It was a cross-sectional study conducted using a questionnaire. A five-point likert scale was used. 250 questionnaires were distributed among the dental students of private and government dental college from 2nd year. Out of 250 questionnaires that were disturbed 220 were responded. Sampling type was convenient sampling. Dental students perspective was the main objective hence target population were 2nd year dental students. Pre- tested questionnaire was utilized. SPSS version 20 was used to analyze the data.

Result: The data was collected from second year students of private and government dental colleges. Questionnaire was generated using Goggle Forms. A 30 items, self-administrated questionnaires was used. Out of the 220 students 99 were boys (45%) the rest 121(55%) students were girls. The mean age of the participants was 20.12 years (SD = 0.86). Out of which 165 (75%) students recognizes the importance of histology and pathology course. 57% participants considered that the integration of these two courses will bring about a positive change. The integration of histology and pathology into the curriculum in the first year needs to be evaluated, as demonstrated by our experience for a better understanding of the course.

Conclusion: It is important to examine the first-year curriculum's integration of histology and pathology, and some suitable steps must be taken to improve students' interest in general histology and histopathology.

Keywords: Histology, Pathology, Integration, Dental students, Syllabus.

INTRODUCTION

Histology and Pathology hold great importance within the field of dentistry for students(1,2). They are the foundation of their knowledge about oral health and disease(2). These subjects help students understand the small and large parts of tissues, so they can learn about the structure of the mouth and its related systems. By learning about medical conditions, students can diagnose and treat oral diseases to provide the best care for patients(3). Histology helps us understand how tissues are usually structured, so we can identify any abnormalities. This information helps dentists to find and recognize early signs of problems like pre-cancer or strange growths. As a result, when pathology and histology are included in dental education, it helps future dentists provide excellent and thorough oral healthcare(4).

Students' perspectives are integral to shaping an effective dental curriculum as they bring a firsthand understanding of the learning process. Their insights help bridge the gap between theory and practice, ensuring real-world relevance and enhancing clinical training. By valuing students' input, dental institutions can cultivate a curriculum that aligns with evolving industry trends and equips future practitioners with the skills they truly need(5).

When two curriculums are combined, students can learn more effectively because they can understand difficult ideas from different perspectives. This method encourages different areas of knowledge to be connected, improves how we solve problems, and gets students ready for real-life challenges(6). By combining different subjects, students can develop a wide range of skills that can be easily adjusted and are more suitable for the constantly changing needs of the modern interconnected world(7).

Nevertheless, our understanding of the particular difficulties students encounter in identifying alterations in diseased tissues remains limited. Not much has been done to find out what dental students think about histology and pathology course and the integration of these two courses in the curriculum. Histology teaches the normal cell structure and pathology teaches any abnormality. It is hard to define abnormal if, what is normal is

unknown(4). It is imperative to confront these obstacles in a structured approach.

MATERIALS AND METHODS

This cross-sectional study was carried out at all private and government dental universities in Peshawar using convenient sampling. After receiving ethical permission, second-year dentistry students were sent the questionnaire via email using Google form and more than 220 students responded. The survey included inquiries about students' preferences for anatomic pathology, the challenges they encountered when studying histopathology slides, their evaluations of the retention of their practical histology knowledge, and their opinions of how histology and pathology are combined in integrated courses. A five-point Likert scale was employed. Questionnaire was adapted from a pre-tested questionnaire(8). The questionnaire included questions about their interests for anatomic pathology, the difficulties they came across when examining histopathology slides, their evaluation of practical histology knowledge retention, and their attitudes toward the integration of the two courses.

RESULTS

The data was collected from second year students of private and government dental colleges. Questionnaire was generated using Goggle Forms. A 30 items, self-administrated questionnaires adopted by a study conducted by Saluja et al (9) was used to collect data of the present study. Out of the 220 students 99 were boys (45%) the rest 121(55%) students were girls. The mean age of the participants was 20.12 years (SD = 0.86). Out of which 165 (75%) students recognizes the importance of histology and pathology course. 176 (80%) students thinks that histology is one of the subjects that are the foundation of clinical curriculum and practice.

Of all the students who responded 99 (45%) did not find histology to be interesting at all while the rest 121(55%) considered histology to be interesting subjects out of which only 14(6%)

wanted to consider perusing histology as a degree in future. When asked about the reason of this perusing it as a degree only 2(10%)

participants responded that they would like to teach it.

Table 1: participant's responses on pathology and histology teaching methods

Serial#	Question	yes	no
1	In the first year, it is preferable to limit the histology lab material to what has to be contrasted with common pathologic situations	66%	34%
2	It is preferable to view specimens of the same tissue type in both normal and pathological states simultaneously	84%	16%
3	In histology, drawing tiny images is more effective	52%	48%
4	Images are less useful than a microscope for teaching microscopic morphology in pathology.	59%	41%
5	More lab sessions and effort from instructors are required for practical histology than what you received	63%	37%
6	In the pathology lab sessions of the introductory course, you remembered more than 50% of the slides that represented the normal tissue counterparts.	53%	47%
7	Your ability to recall practical histology from the pathology introductory course served you well in practical pathology.	57%	43%
8	It is preferable to teach histology and pathology together than to teach each topic separately in the first and second years.	64%	36%
9	It is preferable to include case studies that combine histology and pathology.	82%	18%

Table 2: student's perception on the how pathology and histology courses are using a likert scale

SNO	Question	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1	Learning pathology was easy	7(3%)	105(48%)	84(38%)	14(6%)	11(5%)
2	Lab session of pathology is fascinating	66(30%)	4(2%)	105(48%)	29(13%)	16(7%)
3	Histology practical is more challenging than the theory	18(8%)	16(7%)	32(17%)	121(55%)	29(13%)
4	Lab session of histology fascinating	11(5%)	37(17%)	84(34%)	29(13%)	68(31%)

In the section where there were questions regarding pathology 143 (65%) responded that they consider pathology as a clinical subject rest 77(35%) considered it to be a non-clinical subject. 84 (34%) found pathology very interesting as a subject 136 (66%) thought it is a boring subject. 143(77%) thought that general pathology is not related with dealing with patients while 77 (23%) knew pathology is related to patients. 116(47%) considered pathology interesting. In those 37(17%) thought they might be interested taking up general pathology as a degree in future. 70(32%) students out of 220 felt that pathology laboratory and practical are interesting. The alarming number was the 136(66%) students who thought for practical pathology, the professors will need to put in more lab time and effort than they did in their previous courses.

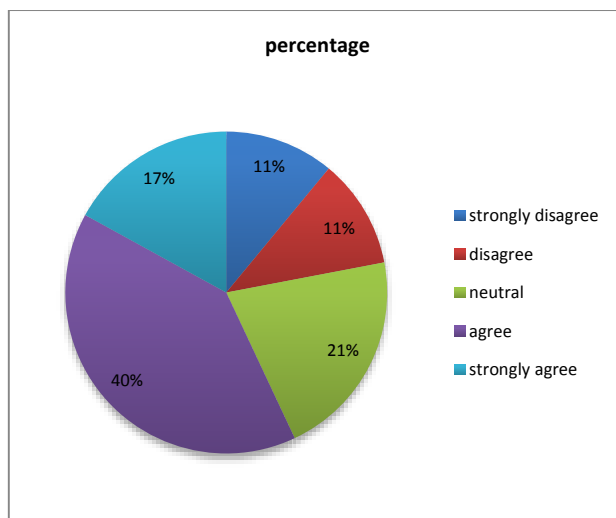


Figure 1: showing the response to the question if students think that course of histology and pathology should be taught in integration

The data collected revealed that 57% students agreed that histology and pathology should be taught in an integrated curriculum manner.

DISCUSSION

Since histology and pathology are two fundamental medical fields that heavily rely on images, numerous techniques were employed to improve students' comprehension and memory. Students at

institutions in Pakistan finish general histology in their first year and general pathology in their second year. Their syllabus closely related and not much work was done to know what student think about integration of these two very important subjects.

Medical schools are currently engaged in curriculum reforms with the adoption of horizontal and vertical curricular integration after realizing the flaws of the old teaching approach.(10) Information must be actively processed during active learning, not only received. Integration improves cognitive abilities and results in a deeper comprehension of the subject(11) Integrated curricula have been proven to increase medical students' satisfaction and comprehension when teaching laboratory medicine(12). In a similar study 85% participants responded positively to the integration of pathology and histology curriculum (8). Where as in our study 57% participants considered that the integration of these two courses will bring about a positive change.

Unlike our study a study conducted in Al Balqa university Jordan (72.9%) students considered pathology to be very interesting and (60%) considered histology to be very interesting(8). In our study (38%) thought pathology was interesting, (46%) thought histology was interesting. Although, choosing these subjects as a career choice, was somewhat similar as in our study and the one conducted in Jordan as, the rate of participants responding positively was low. In our study (8.5%) though they might pursue histology in future and (17%) thought they might pursue pathology. Similarly, the study in Jordan proposed 15.4% responded positively to choosing pathology and 17% choose histology.

A key learning objective that improves students' knowledge and comprehension is the correlation between the normal histology of organs and the morphology of illness(13). It also has to be examined how well this integration works with modern teaching and learning techniques like virtual microscopes(14). Additionally, case studies were successful, and the microscope is still the best tool for teaching microscopic morphology(15). However, there is more work to be done to boost students' interest in anatomic pathology(16).

CONCLUSION

The integration of histology and pathology into the curriculum in the first year needs to be evaluated, as demonstrated by what we have learned. Teaching histology and pathology in an integrated curriculum manner might increase the retention and interest in the former course. In addition, case studies were successful, and the microscope is still the best tool for teaching microscopic morphology. However, there is still more work to be done to boost students' interest in anatomic pathology.

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