

## Histology: Perception and Attitude of First Year MBBS Students

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### Abstract

**Objectives:** It has been universally found that anatomy is the most difficult subject for first year MBBS students. In India students get only seven to eight months to complete their first year MBBS syllabus. Histology, although a part of anatomy is a subject in itself. As the numbers of hours allotted to histology teaching are much lesser as compared to gross anatomy, students generally neglect it. The present study was done to understand the attitude of first year MBBS students towards histology. **Methods:** An anonymous questionnaire comprising of both open-ended and closed-ended questions was given to students at the end of first year. Out of 100 students, 87 completed the questionnaire. **Results:** It was found that the attitude of most of the students towards histology changed over the course of one year, confusion has turned to clarity, neglect has changed to interest and finally culminated into raised confidence in himself/ herself. This paper discusses the probable reasons for the same. **Conclusion:** An honest feedback from the students helps teachers in revising teaching methodologies, for proper utilization of available time for the benefit of students and the department.

**Keywords:** Attitude; First Year; Histology; Medical Students; Perception.

### Introduction

In India, admissions to a graduate medical school are through a rigorous entrance examination called the pre medical test. This covers basics of zoology, botany, chemistry and physics. Needless to say, all these students have a thorough knowledge of basic sciences from the first day of commencement of medical education. Many times admission process is delayed and prolonged so that First year starts only in mid September as compared to commencement on first July. As the first year is over by next year April, within seven to eight months period, first year syllabus including departmental tests and internal assessment examinations have to be completed. It is difficult not only for the teachers but is also very strenuous and stressful for the students because of

relocation, change in food habits and most importantly academic demands [1,2]. Students need to digest a vast syllabus.

It has been universally found that for vast majority of students, anatomy is a very difficult subject, and considered the vastest subject of first year of medical school [3]. Of the total number of hours allotted to anatomy teaching, gross anatomy teaching is most emphasized. Even majority of the post-graduate residents think that gross anatomy is very important for mastery in their discipline [4].

Histology is the science that deals with microscopic structure of the cells, tissues and organs of the body, and is a fundamental part of medical education. It provides key information about microscopic organization of organs which is required for histopathological diagnosis of diseases [5].

In Indian Medical schools, histology is part of anatomy and taught for only 3 hours a week and seems to be a poor cousin of gross anatomy although its importance for pathology, dermatology and forensic science cannot be over looked.

Attitude is an important concept that is often used to understand and predict people's reaction to an

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object or change which influences behavior and learning [6]. As gross anatomy is overemphasized, it is found that students are slower to recognize the importance of histology and students attitude towards histology develop early in the course [7].

The present study was done to understand the attitude and perception of first year medical students towards learning histology.

## Methodology

This observational Study was conducted in the Department of Anatomy, BKL Walawalkar Rural Medical College, Sawarde in the state of Maharashtra. With Prior permission from heads of the Institute and Department a questionnaire was given to the first year medical students at the end of their academic year. First and last question was open ended and others were close- ended. Total 87 students participated in this study. The study was completely anonymous. Analysis of responses to every question was done and percentage was calculated. No statistical tests were applied for this study.

The questions asked were a combination of the student's initial impression of histology and their change in perception as the questionnaire was given at the end of the year.

The questionnaire was prepared keeping in mind Vision 2015 (MCI booklet) [8]. This is a new proposal from Medical Council of India for improving the current system of medical education for better learning of Indian Medical Graduates. A greater emphasis is to be on self directed learning by the Indian Medical Graduate.

### *Each Questionnaire Consisted of the Following Questions*

Q1. What was your understanding about histology when you joined medical course?

This was an open ended question as it was considered important that each student is able to answer freely what he/she would like instead of been given options to choose from.

Q2. Do you read the concerned chapters from the textbook of histology before you come for the practical?

(a)Yes (b) No (c) Sometimes

The practical demonstration of histology slides is done after the lecture is taken which covers the pertinent topic. The question was asked to

understand the attitude of the student towards preparedness for a practical demonstration class.

Q3. Which of these you find helpful for understanding of histology?

(a)Textbook (b) Atlas (c) Lecture Notes (d) Textbook & Lecture Notes (e) Atlas & Lecture Notes

### *Standard Textbooks and Atlas for Reference in our Department Include*

1. Histology a text and atlas by Michael H. Ross and Wojciech Pawlina, 6<sup>th</sup> Edition, Lippincott Williams & Wilkins
2. Textbook of human histology with colour atlas and practical guide by Inderbir Singh, 6<sup>th</sup> Edition, Jaypee Brothers, New Delhi.
3. Difiore's atlas of histology with functional correlations, 12th Edition, English, Paperback, Eroschenko

These are purely references as the students are encouraged to follow whatever text/atlas they are comfortable reading even if they are not those prescribed.

Q4. Do you draw the diagrams in your histology practical journal in the practical itself?

(a)Yes (b) No (c) Sometimes

The two hour practical time includes a briefing of the lecture for about 15 minutes followed by demonstration slides that can be seen by all students. Then slides are shared by a group of six students, but they have individual microscopes to see. Simultaneously clearing doubts, making diagrams and correction of the previous week's diagrams is done.

Q5. At the end of the year, how confident are you about answering histology questions in the exams?

(a) <50% (b) 50-75% (c) >75%

This question aimed at how their understanding improved with time. Although one year of study is not ideal for a subject as vast as histology, it was hoped that at least a basic understanding would develop due to teaching and learning.

Q6. What are your suggestions for improvement of histology teaching in the department?

This was again an open ended question as this was our first batch of students in BKL Walawalkar Rural Medical College and it was aimed at helping us, rather than the students as feedback is always necessary for improvement.

### Observations

**Table 1:** Questionnaire with percentage of responses

1.	What was your understanding of histology when you joined medical course?	This was open-ended question		
2.	Do you read the concerned chapters from the textbook of histology before you come for the practical	Yes: <b>8%</b>	No: <b>26.4%</b>	Sometimes: <b>64.4%</b>
3.	Which of these you find helpful for understanding of histology?	Textbook: <b>8%</b> Textbook and Lecture Notes: <b>1.1%</b>	Atlas: <b>12.6%</b> Atlas and Lecture Notes: <b>19.5%</b>	Lecture Notes: <b>54%</b> All combined: <b>3.4%</b>
4.	Do you draw the diagrams in your histology practical journal in the practical itself?	Yes: <b>47.1%</b>	No: <b>3.4%</b>	Sometimes: <b>49.4%</b>
5.	At the end of the year, how confident are you about answering histology questions in the exams?	<50%: <b>6.9%</b>	50-75%: <b>73.6%</b>	>75% : <b>19.5%</b>
6.	What are your suggestions for improvement of histology teaching in the department?	This was open-ended question		

### Discussion

Student's feedback is a powerful tool for improving quality of education and understanding the difficulties faced by the students in the initial few months of joining the medical course [9]. Unfortunately the first year of a medical student is always difficult as there is an ongoing struggle between adjustments to a new environment, age related hormonal changes in the body and the huge academic burden he/she has to deal with [1]. In such a scenario, the attitude of students towards academics goes a long way in determining their final academic result.

In the present, histology training is given for 3 hours in a week and comprises of 1 hour lecture preview followed by 2 hours of light microscopic demonstration. The students are expected to identify tissues and organs to understand the structural basis with their functional correlation.

It is well documented that motivational dimension of any educational process is important because of its influence on students learning behavior [10]. Motivation affects the decision to begin, persevere and end a specific learning behavior [11].

In addition, inclination towards a particular specialty is determined by personality of an individual, quality of teaching in the medical college and clinical competence and role model influence [12, 13].

As the first year of medical course forms the basis of all other years to come, the attitude of students towards learning affects their academic and social performance.

The study was done for histology in particular as it is a difficult and novel subject for the students.

Knowledge of normal structure of organs and tissues is essential, as organ function cannot be assessed only by external appearance. Effects of toxins, pathogens, drugs, environmental hazards could be better understood by sound knowledge of cells and tissues [7].

In the beginning of the course, for most of the students who participated the survey, histology was something blue and pink under the microscope, although before joining the course they had a basic idea about epithelium, glands and bone structure.

Many of them did not understand the concept of histology and thought that it was optional or an allied subject.

It was only before the first part completion test, that they realized that it is a compulsory part of anatomy and has weightage in exams. They then became serious and as teachers we saw a change in them as they started paying more attention in lectures and demonstrations. We also observed an increase in the interaction between the students and us especially during practicals after about 4 months of the commencement of the course.

The first part completion test which was conducted after completion of general histology showed dismal results in histology. As the realization that histology is to be studied had come just before the exams, most of the students did not prepare/ had not paid due attention in class. Their attitude underwent a sea change and most of them (64%) started reading the chapter pertinent to the practical before coming for the practical.

As the students became more attentive in class, their lecture note taking improved and we presume that this is the reason that 54% of them found lecture notes helpful for understanding the subject.

There have been many views on effective and productive time management of two hours of histology practicals [9,14]. In our Institute we encourage students to draw the histology diagrams in the practical itself such that their time is well utilized. By the end of the year about 47% of the students could complete their drawing work in the practical itself showing their seriousness towards the subject. Many told us that they had developed an interest in the subject by itself and although it was important to do well in exam, they were happy reading it on its own merits too.

The examination pattern in histology in the first professional for Maharashtra University of Health sciences is as follows. Theory- Paper I & II- microscopic anatomy is sub question for long answer question. In addition to that one short note is asked in each paper I. Out of total 100 marks; microscopic anatomy is asked for 10 marks. More weightage is given in the practical examination. Out of 40 marks of practical 10 marks are for histology; 6 marks for spotting and 4 marks for slide discussion.

About 74% of the students were confident that would be able to answer at least 75% of the questions correctly by the end of the first year. We credit this to both our teaching methodology and their improving attitude towards histology. Overall first year medical students show positive attitude towards histology.

We asked for their suggestions for improvement. Although curriculum planning and teaching methodology are decided by the senior faculty members at university and departmental level, an opinion from the students needs to be taken in order to decide on a curriculum which brings out the best in them [15].

The students asked for frequent revisions in the form of spotting and viva before any exam. Need more discussion. We asked them to be more regular with their studies and we also decided that from next batch we plan to hold revision of the previous practical in the next in the form of spotting of previous slides. This will help in regular revision and better utilization of time of histology practical. We plan to add a photographic atlas of the slides that we use for teaching in the department as a practical manual for better teaching next year.

The journey in histology laboratory of a first year MBBS student is an interesting one, as by the end of the first year, confusion has turned to clarity, neglect has changed to interest and finally culminated into raised confidence in himself/ herself.

As this is the first batch of MBBS students in this new medical college, it has been an enriching

experience for us teachers also. Through the honest feedback, we have now a greater empathy towards the next batch of first year MBBS students, as we are armed with improved teaching methods that will help us in better utilization of histology time, resulting in better understanding of students.

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