

A study of orientation of students towards anatomy of eye in 3rd year after finishing anatomy learning in first year MBBS

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Abstract

Background: Anatomy forms the core of the Medical Subjects. It is said that Anatomy forms the heart of every subject in Medical Education. It's mandatory for the first year MBBS to study Human Anatomy. Anatomy of the eye is also dealt as a part of curriculum. Students who take fifty percent are eligible to pass on to second year where they are taught other three para-medical sciences subject and if they clear this they will land in phase-III when the Ophthalmology will be taught to them. But how much Anatomy of the eye do they actually remember is the question that we face. So this study puts in a sincere effort to find the answers and also discusses of possibilities of measures that can be taken to ensure good education.

Aims and Objectives: To study and understand the orientation of students towards anatomy of eye in 3rd year MBBS.

Materials and Methods: This study was done in the students who entered third MBBS. One hundred twenty students participated in the study. They were divided into two groups and the study was conducted.

Results: Anatomy knowledge of eye was not retained which reflected very poorly in the pre-test scores and it was found that teaching Ophthalmology was much better after the reinforcement class of Anatomy which reflected in the second scores.

Conclusion: Anatomy and other pre and para medical subjects have to be taught in tandem with clinical subjects or at least a revision is needed for effective understanding of the clinical subjects.

Keywords: Orientation, anatomy, knowledge, ophthalmology

Introduction

Medical students learn the bulk of anatomical sciences either at the beginning of the first year or throughout the first 2 years of their medical education. Anatomy forms the core of the Medical Subjects. It is said that Anatomy forms the heart of every subject in Medical Education. It's mandatory for the first year MBBS to study Human Anatomy. Anatomy of the eye is also dealt as a part of curriculum. Students who take fifty percent are eligible to pass on to second year where they are taught other three para-medical sciences subject and if they clear this they will land in phase-III when the Ophthalmology will be taught to them.

Practical applications do not take place usually until clinical exposure, which may be months or years later, making knowledge retention an issue of concern. Opinions of poor retention of anatomical knowledge have been reported in the literature ^[1,2]. The majority of clinicians feel that the current anatomical education of medical students is inadequate and below the minimum necessary for safe medical practice ^[3]. Surgical specialists have a significantly lower opinion of the anatomical knowledge of medical students compared to medical specialists ^[4]. Students also acknowledge the retention problem. In a 3-year cohort study conducted at the University of Birmingham, only 14% of final-year students felt confident in their knowledge of anatomy ^[5]. A more recent study conducted at Penn State College of Medicine supports the notion that anatomical knowledge transfer from the classroom to the clinic is perceived as a difficult task by the students ^[6]. Despite opinions of both faculty and students regarding the lack of anatomical knowledge retention, no studies have been conducted to assess the actual knowledge content gap of third-year medical students prior to entering the surgical clerkships. The literature does, however, suggest means of addressing this problem. But how much Anatomy of the eye do they actually remember is the question that we face. So this study puts in a sincere effort to find the answers and also discusses of possibilities of measures that can be taken to ensure good education.

Aims and Objectives

- To study and understand the orientation of students towards anatomy of eye in 3rd year MBBS.
- To understand the need of reinforcement of the already taught knowledge.

Materials and Methods

This study was done in the Department of Ophthalmology, Kanachur Institute of Medical Sciences, Mangalore.

This study was done from June 2021 to Oct 2021.

Inclusion criteria

- Students who have freshly entered third phase.

Exclusion criteria

- Students who did not consent.

Methodology

A pre-test was taken in which all 120 students participated. The test consisted of four option MCQs and Visual picture based MCQs. The answers were corrected and the scores were noted in an excel sheet.

Then the students were divided into two groups consisting of equal number of students. The first group were taught concerned Anatomy of eye first and then the concerned Ophthalmology was taught. The second group were taught directly the concerned Ophthalmology. Five such sessions were conducted. At the end of the five sessions a four option MCQ exam was conducted and the student's papers were corrected. Care was taken that each batch had the same question paper on Ophthalmology. The scores were then noted in an excel sheet.

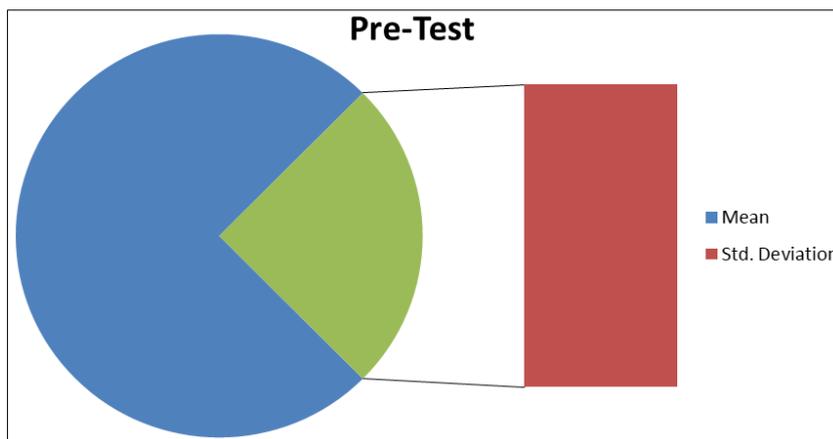
Statistical analysis

Paired and unpaired t test was used.

Results

Table 1: Pre-test Scores

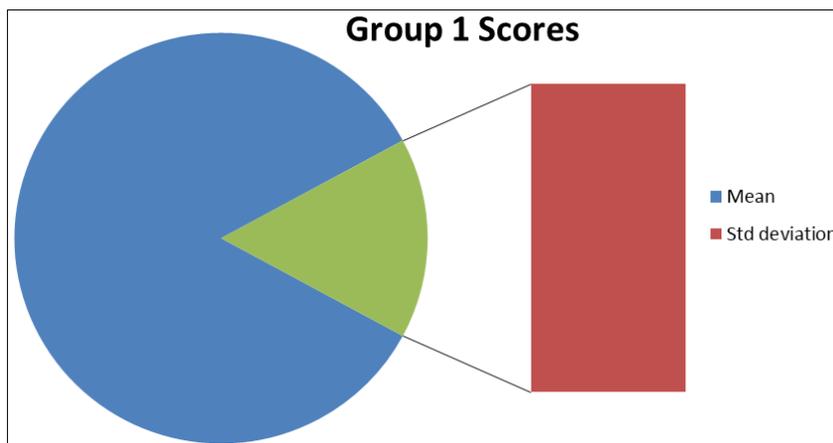
	N	Mean	Std. Deviation
Pre-Test	120	3.14	1.05



Graph 1: Mean OSCE Scores with standard deviation

Table 2: Scores in Group 1

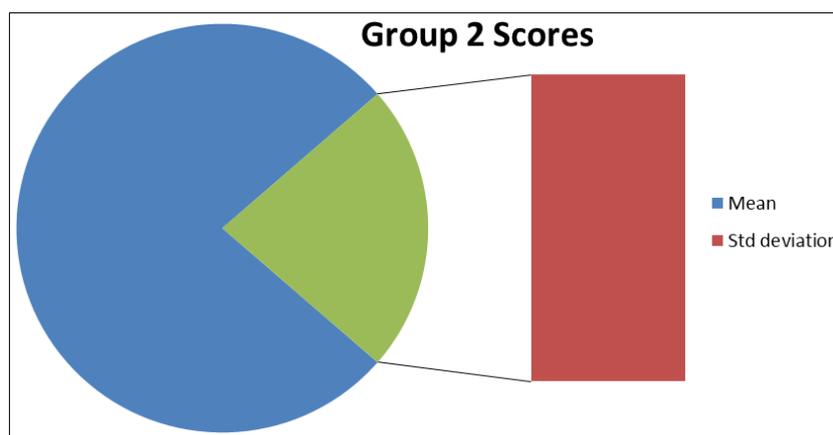
	N	Mean	Std. Deviation
Group 1	60	8.05	1.51



Graph 2: Scores in Group 1

Table 3: Scores in Group 2

	N	Mean	Std. Deviation
Group 1	60	3.52	1.04



Graph 3: Scores in Group 2

Table 4: Comparison between the two groups (Unpaired-t test)

Group	N	Mean	Std. Deviation	P value
Group 1	60	8.05	1.51	<0.001
Group 2	60	3.52	1.04	

Table 5: Comparison between pre-test and the final scores (Paired t test)

	Mean Scores	Std. deviation	P Value
Pre-test	3.14	1.05	<0.001
Final score Group 1	8.05	1.51	
Pre-test	3.14	1.05	Not Sig
Final score Group 1	3.52	1.04	

Discussion

There is widespread support among clinicians and students for more vertical integration of anatomy teaching throughout the undergraduate curriculum [3]. One promising model is in place at The Cleveland Clinic Lerner College of Medicine of Case Western Reserve University, where anatomy review sessions were introduced during the clinical third year using prosected cadavers in two half-day sessions [7]. This approach is referred to as nesting [8]. However, a nesting strategy such as this is somewhat general and does not target the specific needs of various specialties at the beginning of each rotation. It also has the limitation of not incorporating a variety of instructional approaches and methods to appeal to different styles of learning. In order for a nesting approach to cater to the needs of medical students, faculty first needs to assess the specific knowledge gaps. Observations of a general anatomical knowledge gap among third-year medical students are similar at the authors' institution to those reported in the literature: Gaps are perceived but have not yet been quantified or specified. The hypothesis was that anatomical knowledge retention declines in third-year students by the time they start the Ophthalmology subject. At present, the curriculum at the institution is being revised to integrate basic science and clinical knowledge and adopt active learning approaches. An important step in this integration is identifying exactly what is and what is not being retained before blindly repeating or nesting such content. The purpose of this study was to assess anatomical knowledge retention of medical students prior to Ophthalmology and thus shed a light on the whole curriculum.

Conclusion

Reinforcement of the Human Anatomy knowledge is a must before teaching Ophthalmology. The teachers should incorporate Anatomy before they start the actual Ophthalmology teaching. Another way is the curriculum committee should take proper steps to ensure that the vertical integration needs to take place. This holds true for other surgical prances also. A good practice would be to reinforce the pre and para-medical knowledge whenever a clinical topic would be taught.

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