Original article:

Changes in perception about anatomy subject after 1st year of medical course.

Dr Ravikiran Ashok Gole¹, Dr Pritee Meshram², Dr Shanta Hattangdi³

¹Assistant professor, Department of Anatomy, Lokmanya Tilak Municipal Medical College and General Hospital, Mumbai, India
²Assistant professor, Department of Anatomy, Lokmanya Tilak Municipal Medical College and General Hospital, Mumbai, India
³Professor and Head, Department of Anatomy, Lokmanya Tilak Municipal Medical College and General Hospital, Mumbai, India

Corresponding author: Dr Ravikiran Ashok Gole

Abstract

Introduction: Study of human anatomy is the first step taken by students in the long road to become a successful medical practitioner. Students enter the medical course holding certain views about the subject of Anatomy, which changes over the subsequent one year of study. These changes are brought about by vast syllabus, limited teaching period and professional college environment. The study investigated these changes which occurred in the perceptions about the subject of Anatomy in 1st year medical students.

Methods: A 7 question survey targeted 100 students enrolled in 1st year of medical course at the beginning of the session (1st assessment). The same survey was again done at the end of the teaching year (2nd assessment) and the difference in opinion was recorded.

Results: The difficulty level of anatomy as perceived by students, decreased along the course of one year. The knowledge of Anatomy was important for clinical practice according to majority of students. The time frame of one year was inadequate to study anatomy effectively.

Conclusion: Anatomy is an important subject for clinical practice and the 1st year of medical course inadequate to cover the subject. Anatomy must be taught in the subsequent years for an effective clinical outcome.

Keywords: Anatomy, students, Dissection, Clinical practice

Introduction

Human Anatomy is the study of structure of human body. It has been the foundation of medical education since ages. It is the first subject which newly admitted students of medical course come in contact with. The study of human body even though taught at pre medical level, is superficial and follows a different outlook. There is spoon feeding type of approach in this outlook with emphasis on scoring higher grades than its application [1]. Students enter the medical course holding the same outlook and a dream of becoming a successful medical practitioner. But the professional educational environment is very much different than the traditional school and junior college environment. Medical school’s learning orientation has a solid scientific basis with its practical implementation on patients in long run [2]. In recent years, human anatomy has been slowly squeezed from the medical curriculum. The medical council of India in 1997 reduced the teaching period of anatomy to 1 year [3]. Since the last 40 years, many authors have highlighted the decline in undergraduate knowledge of anatomy.
amongst the surgical community [4,5,6]. It is very
difficult to assess objectively whether this
reduction in anatomy teaching has been excessive.
However, the few studies that have been conducted
suggest that the knowledge of the qualifying doctor
is now below an acceptable level.[7,8]

The state medical university specifies a vigorous
teaching of not less than 650 hours for the subject
of anatomy [9]. Generally the medical colleges
follow an alternate day, 7 hours of teaching human
anatomy. The students are immediately pushed in
this tight schedule as the syllabus has to be
completed in the subsequent 7-8 months which
includes one vacation period and two examinations.
The students are subsequently given a preparatory
leave of one month followed by university
examination. Apart from the exhaustive teaching
hours the students also have to deal with adjusting
and adapting to the new college and hostel life.
The teaching of anatomy includes lectures, dissection,
demonstration and histology practicals. The
medical council of India recommends that, lectures
should not be more than 1/3rd of the teaching hours
[3]. But the importance of remaining 2/3rd teaching
hours cannot be ignored. Understanding is achieved
by lectures while dissection and practical’s cement
the knowledge obtained in lectures. Lectures when
supplemented with audiovisual aids impart better
clarity and learning [10,11]. Surgeons advocate
experience with dissection not only helpful to learn
anatomical detail but to familiarize students with
the variation in anatomy [12].

Few authors have studied the changes in the
outlook of students about anatomy. The present
study was undertaken to understand the changes in
perception about the subject of anatomy from the
initial stage of excitement (early days in 1st year
medical course) to the last stage of anxiety (days
before 1st year medical university exams).

**Methods**

Permission was obtained from the concerned
authorities regarding the study. Freshly admitted
students of Lokmanya Tilak Municipal Medical
College & General Hospital were then approached
and requested to participate in the study. They
were asked to consent to the study if they were
interested. Total of 100 students were enrolled.
They were given instructions about filling the
questionnaire. No identity was to be revealed in the
questionnaire and no multiple markings were
allowed. The students were given the questionnaire
(1st assessment) and requested not to consult their
colleagues while answering and respond freely and
fearlessly. The questionnaires were collected back
and analysed. At no point were the students told
about the nature of the study.

The following questions were asked
1) Difficulty level of Anatomy.
2) Is Anatomy an interesting subject?
3) Importance of anatomy in clinical practice.
4) Importance of anatomy to understand other
medical subjects.
5) Is the time frame of 9 months adequate to learn
anatomy?
6) Preferred teaching aid in Anatomy.
7) You will study/ have studied Anatomy for.

The similar questionnaire was again given to the
students (2nd assessment) after a period of ten
months when the syllabus of anatomy was
completed and the final examinations were
scheduled in the next 15 days. The questionnaire
was collected and the difference in the options
ticked by students were analysed.
Results

The following results were obtained:

<table>
<thead>
<tr>
<th>Structured queries</th>
<th>Response</th>
<th>1st assessment</th>
<th>2nd assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Difficulty level of Anatomy?</td>
<td>Very difficult</td>
<td>72</td>
<td>07</td>
</tr>
<tr>
<td></td>
<td>Difficult</td>
<td>28</td>
<td>62</td>
</tr>
<tr>
<td></td>
<td>Normal</td>
<td>00</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>Easy</td>
<td>00</td>
<td>00</td>
</tr>
<tr>
<td>Is Anatomy an interesting subject?</td>
<td>Very interesting</td>
<td>15</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>Interesting</td>
<td>85</td>
<td>66</td>
</tr>
<tr>
<td></td>
<td>Boring</td>
<td>00</td>
<td>15</td>
</tr>
<tr>
<td>Importance of anatomy to understand other medical subjects</td>
<td>Very important</td>
<td>38</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>Important</td>
<td>62</td>
<td>65</td>
</tr>
<tr>
<td></td>
<td>Not important</td>
<td>00</td>
<td>00</td>
</tr>
<tr>
<td>Importance of anatomy in clinical practice</td>
<td>Very important</td>
<td>75</td>
<td>82</td>
</tr>
<tr>
<td></td>
<td>Important</td>
<td>25</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>Not important</td>
<td>00</td>
<td>00</td>
</tr>
<tr>
<td>Is the time frame of 9 months adequate to learn anatomy</td>
<td>Yes</td>
<td>00</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>100</td>
<td>97</td>
</tr>
<tr>
<td>Preferred teaching aid in Anatomy</td>
<td>Lecture</td>
<td>06</td>
<td>00</td>
</tr>
<tr>
<td></td>
<td>Dissection</td>
<td>92</td>
<td>80</td>
</tr>
<tr>
<td></td>
<td>Demonstration</td>
<td>02</td>
<td>20</td>
</tr>
<tr>
<td>You will study/ have studied Anatomy for</td>
<td>Use in clinical practice</td>
<td>100</td>
<td>68</td>
</tr>
<tr>
<td></td>
<td>To pass examination</td>
<td>00</td>
<td>32</td>
</tr>
</tbody>
</table>

Discussion

This study which assessed the changes in perception from a student’s perspective is the first of its kind to be conducted. At the beginning of the course the mere look of the books of gross anatomy, neuroanatomy, embryology and histology brings a perception of the subject to be very difficult. In the current study at the 1st assessment 72% of students perceived it to be very difficult which changed to 7% at the end of the course. Many studies have reported Anatomy to be a difficult subject at the undergraduate level [13,14,15]. In the current study old-style medical training was used but still the student’s perception decreased to difficult from very difficult. This was because not all that is written in the book is expected from first year medical students. The professional colleges have syllabi outlining the level of anatomical knowledge that they expect from their students when examined [16]. Some leading anatomists have put together some guidelines on an anatomy curriculum which they feel any independent medical practitioner should know.

At the first assessment all the students perceived anatomy to be interesting with 15% recording it to be very interesting. At the end of the year majority still perceived it to be a interesting with 15%
recording it to be boring. The diminished interest might be because of the traditional style of teaching and also due to external factors like load of other subjects, college and hostel life. All the students agreed anatomy to be important for understanding other medical subjects and also in clinical practice. The perception remained same in both the assessments. Many previous studies have highlighted the importance of anatomy in clinical practice [17,18]. Majority of students believed that the time frame of 9 months is not adequate to learn Anatomy. During the 2nd assessment 3% of students felt it to be adequate. Nagar et al recorded 60% of students as finding the time inadequate while Biswas recorded 90.6%.

Dissection was the preferred teaching aid in anatomy with 92% at the 1st assessment to 80% at the 2nd assessment. 6% of students reported lectures as the preferred teaching aid at the 1st assessment but it decreased to 0% at the 2nd assessment. Almost all the previous studies had reported dissection as the preferred teaching aid. Dissection enhances learning and confidence in the subject matter. Johnson J. H. [20] found that examination performance as well as personal satisfaction was enhanced on the part that was dissected. At the 1st assessment when the students were asked about the reason for studying anatomy, 100% students replied that it was for clinical practice. But at the 2nd assessment 32% of students changed their reply as, just to pass 1st year medical exam. This change in perception is due to the inadequate time frame, which compelled the students to change their method to exam oriented rather than clinical oriented.

**Conclusion**

The excitement of wearing a apron, holding a scalpel and dissecting cadavers, is short lived for students as they are bundled upon the heavy volumes of preclinical subjects especially anatomy. Even though all the studies so far have stressed the importance of Anatomy in clinical practice, it’s time frame and syllabus both have been reduced. The dream of students reading the subjects from a clinical point of view is time consuming. So the students in reality change to exam oriented reading. This indicates the need to reevaluate the curriculum and to increase the duration of time allotted to the subject. A core of knowledge must be assimilated by all students during 1st year. But the process should not stop there and should continue with the other specific subjects throughout medical school and beyond.

**References**


