AVAILABLE CHOICES for STUDYING ANATOMY AND FACTORS AFFECTING UNIFORM LEARNING IN DISSECTION

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ABSTRACT

OBJECTIVE: To compare the use of available choices for studying anatomy and factors affecting uniform learning in dissection.

STUDY DESIGN: An observational study

PLACE AND DURATION: Islamic International Medical College Rawalpindi. The study was conducted during 1st March 2011-31st March 2012.

METHODOLOGY: Questionnaires were completed by one of the authors. 90 students from first year MBBS of medical college were included in the study. They were labeled as group 1 and 2 respectively. Each group comprised 45 students.

RESULTS: When group - II was compared with group - I; 28 students of group - II were involved in dissection as compared to group I in which 32 students of group - II were interested in prosecuted materials and 03 spent their time in studying models. There was no statistically significant difference among the two groups. Individual variability in dissection activity was very high: time devoted to active dissection ranged from 0% to 82% of daily course time within the same group. Only one teacher and one body were available for dissection. The teachers of group - I were more involved in learning of students as compared to group - II.

CONCLUSION: The available choices for studying anatomy are dissection, prosection and models. The attitude of teachers as well as students is important in order to produce a uniform learning in dissection.

KEY WORDS: Dissection, Prosection, Choices in dissection

INTRODUCTION

Anatomy as a subject has been source of criticism by many people involved in medical teaching. The special criticism has been on time spent on dissection in medical schools. The human dead body is used for dissection, research and teaching. There are queries both religious and ethical about the permissibility of using and dissecting the human dead. All over the world advanced technology for making models and better access to internet has raised the suspicion that dissection is no more of help in studying medicine. In some medical schools dissection has been purposely abandoned and students are asked to use models and specimen instead of dissection.

Many dissected images are available on net and models have been manufactured in such an excellent way that dissection seems to be of little importance. Another aspect is that active participation of students in the dissection process is also becoming less. On the other hand the supporters of dissection argue that dissections not only teaches concepts relating Anatomy, but it also highlights the actual orientation of students regarding different organs of body and also helps students to compare internal anatomical features of different species.

There is not only is the importance of content of knowledge of anatomy learned through dissection, but it also unreveals the skill of cutting open a human without disturbing its organs, highlighting the relations of the different organs and identifying the internal parts. The content knowledge learned through dissection activities can be gained by other means of dissection, such as simulations or the use of models but the skills learned to carry out the physical activity such as during dissection are also important. Although the modern curriculum gives the students an option to choose their own method but it does not challenge the importance of real life dissection. And, even more important, the participation of students is also not measurable. Some students actually perform dissection while some only observe the dissection process. The data of research into the outcome of cadaver-based teaching methodology versus cadaver-free methods of anatomy teaching is lacking to date. Studies comparing the dissection and the prosection approaches have been largely inconclusive, partly because of methodological issues. Keeping all these facts in mind this study was done compare the use of available choices in dissection and factors affecting uniform learning in dissection. This study was conducted to find out choices available for studying anatomy and factors affecting uniform learning in dissection.

METHODOLOGY

This observational study was conducted during 1st March 2011-30th March 2012 at Islamic International Medical College Rawalpindi. The inclusion criteria compress of in the study 90 students of first year MBBS who volunteered to participate. The students not performing the dissection were excluded from the study. Questionnaires were completed by one of the authors.
The study was conducted during the musculoskeletal module. 90 students from first year class of Islamic International College 2011 were involved in study respectively. These were subdivided into groups - I and groups - II. Each group comprised 45 students. Also care was taken that each group did dissection of upper limb only during the dissection time. The time allocated for dissection was 2 hours /day during the entire module of 8 weeks. All students were expected to engage in hands-on real dissection and to study the specimens and models during course time and/or extra study times. Attendance was obligatory. One table was supervised by one teacher who aided in the dissection process and explained anatomical details where necessary.

**Questionnaire filled by the observer:**

<table>
<thead>
<tr>
<th>How much time spend in dissection</th>
<th>Did prospected specimen and models were used to study anatomy</th>
<th>Did teachers helped in exploring and identifying structures</th>
<th>Did teachers explained relations of structures</th>
<th>Duration for which students were involved in dissection</th>
</tr>
</thead>
</table>

**TABLE - I: CHOICES AVAILABLE FOR STUDYING ANATOMY (N=90)**

<table>
<thead>
<tr>
<th>Groups</th>
<th>Real dissection (done by the student)</th>
<th>Prosection (specimen)</th>
<th>Models</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group - I</td>
<td>32</td>
<td>10</td>
<td>03</td>
</tr>
<tr>
<td>Group - II</td>
<td>28</td>
<td>15</td>
<td>02</td>
</tr>
</tbody>
</table>

**TABLE - II: FACTORS AFFECTING UNIFORM LEARNING IN DISSECTION**

<table>
<thead>
<tr>
<th>Groups</th>
<th>Number of teachers</th>
<th>Number of bodies</th>
<th>Help in dissection by teacher</th>
<th>Anatomical details were explained by teacher</th>
<th>Variation in Time spend in dissection</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>1</td>
<td>1</td>
<td>90% of allotted time</td>
<td>85% of allotted time</td>
<td>0-80%</td>
</tr>
<tr>
<td>II</td>
<td>1</td>
<td>1</td>
<td>25% of allotted time</td>
<td>30% of allotted time</td>
<td>0-45%</td>
</tr>
</tbody>
</table>

**RESULTS**

Thirty two students of group I and twenty eight of group - II were engaged in dissection. There was no statistically significant difference among the two groups as regards the number of students involved in dissection But the individual variability was there some students spend 80% of time doing dissection while some were present and never performed dissection in group - I while in group - II the highest limit was 45% utilization of time. Ten students of group - I and fifteen students of group - II utilized prospected material for studying anatomy. Only a small number of students used models. The teachers of group - I explained the relationship of anatomical structures and helped students in identifying the anatomical structures for almost 90% of the allotted time but students of group - II were not satisfied as the teacher was not skilled enough to guide them with the process of dissection (Table - II).There was one body and one teacher available for dissection for each group (Table - II).

**DISCUSSION**

In this study it was observed that there are individual variations within one large group. Some students were involved in active dissection whereas other liked prospected material. Medical students just before graduation linked gross anatomy with the dissection course and understood clinical concepts by performing dissection 14. The data collected from this study has shown that the actual time allocated for dissection is not uniformly utilized by the students. Although the results showed that there were a large number of students participating from both the groups but individual variations within the two groups during the same dissection course was also seen(Table - II). The student’s individual interest was more toward prosected material as compared to doing dissection themselves. The more interest of students towards prosected material also puts a question mark toward active dissection. Those who are in favor of active dissection proclaim that dissection enhances the interest of students towards surgery and also reinforces the knowledge of relationship of different organs 10. Other studies have shown that there is variation in interest of students for dissection with respect to region being dissected. Dissection of the limbs generated the highest levels of active dissection, dissection of the body cavities generated medium levels, and head, neck, and brain dissection generated the lowest levels 11. In our study, 45 students are grouped for the dissection of one cadaver; it would be interesting to see whether activity patterns would differ if fewer students were assigned to one cadaver. As given in questionnaire the teachers’ role is important. Until the teacher explains the different structures dissected and helps in identifying the structures the purpose of dissection is not served. Different teachers also have different approaches while conducting different course atmospheres, a factor that is however difficult to measure 12. Some teachers are not trained about importance of dissection so how they cannot motivate students to participate in active dissection. More important is variation in participation of students 13. Some students think that
by doing dissection they will memorize the anatomical structures and also the relations are seen in real bodies\(^5\). Although we found students who reported virtually no active dissection at all, others reported spending more than 80% of their course time with hands-on dissection. The charm of clinical practice is history taking to discover facts; interpretation of findings to develop a diagnosis\(^5\).

With the help of dissection we can also recognize and distinguish structures from unknowns but this process involves keenness and teamwork that may help to involve more students towards active dissection\(^5\). Although it was assumed that individual teachers will have an influence on student behavior, we did not ask students to evaluate the attitude of individual teachers or to rate the amount of work done to convince students to participate in dissection. Overall in a given period of an anatomical dissection course, our study suggests that students create their own learning experiences, which are far from uniform learning across the students as a group.

**CONCLUSION**

The available choices for studying anatomy are dissection, prosection and models. The attitude of teachers as well as students is important in order to produce a uniform learning in dissection.

**REFERENCES**