

ANATOMY CURRICULUM DELIVERY TRADITIONAL VS MODULAR (INTEGRATED) BASIS

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ABSTRACT

Background: The main objective to introduce the anatomy in the medical profession is aims at providing comprehensive knowledge of the gross and microscopic structure and development of human body and to provide a basis for understanding the clinical correlation of organs or structures involved and the anatomical basis for the disease presentations. Since the decades right from the birth of medicine to till now anatomy is considered as a core subject and its knowledge is very essential to get into the medical profession. As per the very recent updates in medical curriculum, tremendous changes were taken place in the delivery of anatomy curriculum especially to the undergraduate students, curriculum delivery gradually changing towards the traditional (Regional) to the modular basis (Integrated). This paper aims to differentiate the various fit falls in the traditional and modular delivery of the curriculum especially in relation to anatomy.

KEY WORDS: Problem based learning (PBL); Traditional Anatomy; Computer Aided Learning (CAL); Self Directed Learning (SDL); Directed Self Learning (DSL); Integrated Approach (Modular

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INTRODUCTION

Change is inevitable, it's a human nature and medical curriculum delivery didn't except from this. It is forced to adopt the many approaches that includes modernization, involvement of computer based learning and various other new techniques such as computer aided learning, Self directed learning, Directed self learning, problem based learning and continuous review of medical curriculum results in anatomy curriculum delivery to the undergraduate medical students is in the midst of a downward spiral. The traditional anatomy education based on topographical structural anatomy taught by didactic lectures and complete dissection of the body with personal tuition, has been replaced by a multiple range of special study modules,

problem-based workshops, computers, plastic models and many other teaching tools. In some institutions, dissected cadaver-based anatomy is no longer taught. Changing the undergraduate medical curriculum has taken place without any research into the key aspects of knowledge necessary or comparing methods of teaching. There is no agreement on a common standard core curriculum and as a result, numerous new curricula have been introduced. No external audit or validation is carried out, so medical schools have been free to teach and assess their own work themselves. There is a great divergence in medical schools across the different continents in curriculum delivery especially in anatomy.

Published data on the impact of these changes is very minimal. The reduction in undergraduate teaching and knowledge of anatomy has caused great concern, not only for undergraduates but also to postgraduate students, a marked reduction in demonstrator posts and a change in examination standards, has set up a system that is allowing the future medical doctors with a poor knowledge of anatomy to become practitioner. The place of basic science, especially anatomy in medical curriculum, must be examined. A sound knowledge of anatomy is essential if the medical practitioner is going to accurately define and successfully to treat the problem presented by the patient. The dissected cadaver remains the most powerful means of presenting and learning anatomy as a dynamic basis for solving problems.

Objectives in typical anatomy curriculum includes.

(A) Knowledge: At the end of the curriculum delivery student should:

a. Be able to comprehend the normal disposition, inter-relationships, gross, functional and applied anatomy of the various structures in the body including cross-sectional anatomy.

b. Be able to identify the microscopic structure of various organs and correlate the structure with the functions as a prerequisite for understanding the altered state in various disease processes.

c. Be able to comprehend the basic structure and connections of the central nervous system to analyze the integrative and regulative functions of the organs & systems and

he/she should be able to locate the site of gross lesions according to the deficits encountered.

d. Know the basic principles and sequential development of the organs and systems, recognize the critical stages of development and the effects of common teratogens, genetic mutations and environmental hazards. He/She should be able to explain the developmental basis of variations and congenital anomalies.

e. Understand the anatomical basis of some common clinical procedures i.e., intramuscular and intravenous injection, lumbar puncture, liver, kidney and bone marrow biopsy, pleural, pericardial and peritoneal paracentesis

f. Be able to comprehend the basic principles of different diagnostic procedures in radiology, normal plain and special X-rays of whole body and newer imaging techniques.

(B) Skills: At the end of the course the student should be able to:

a. Identify all the major structures, organs, viscera of the body and mark the topography of important organs.

b. Identify the tissues and organs under the light microscope.

c. Identify normal anatomical structures, organs and viscera in radiographs, Computerized Tomography (CT) Scan, MRI etc. and correlate with the cross sections of the body.

d. Locate ideal sites of intramuscular and intravenous injection, lumbar puncture, bone marrow, kidney and liver biopsy, pleural, pericardial & peritoneal tapping.

e. Localise important pulsation and the structures against which pressure can be applied in case of bleeding from a particular artery.

f. Demonstrate muscle testing and movements at joints.

g. Locate the site for emergency tracheostomy

h. Interpret common genetic abnormalities in karyotypes.

(C) Integration From the integrated teaching of other basic sciences, student should be able to comprehend the regulation and integration of the functions of the organs and systems in the body and thus interpret the anatomical basis of disease process.

(D) Scope of training: Basic fundamentals of human gross, microscopic, developmental and radiological anatomy are covered in this course.

Special emphasis is laid on its correlation with functional and applied aspects.

Dissection of cadaver is done by a group of students under the supervision of teacher so that they get accustomed to the structure of the human body. The dissection is preceded by lectures/ demonstrations and followed by tutorial and seminars on selected topics by the students.

Histology: A lecture is followed by practical. The students are shown demonstration microscopic slides and provided individually with slides to study under the light microscope. They maintain a workbook, which is checked by the teachers. They are introduced to electron micrographs of some selected organs.

Embryology: Lectures and demonstration of models at different developmental stages are taken. Self-learning is encouraged. The students' progress is evaluated at regular intervals and internal assessment is calculated separately for theory and practical's.

According to the study done by K.M.Patel et.al (2008) in their study concluded that the use of human cadaveric dissection gained more approval when the skills-base was considered rather than just the content (knowledge)-base of an anatomical course.

Changes in the teaching of gross anatomy results in decreasing student contact time alongside the use of new methods for teaching. Such as self directed learning and directed self learning. However, there remains controversy over teaching methods and about whether cadaveric dissection by students should remain the preferred method. Furthermore, decisions concerning changes to curricula are more likely to be taken by choosing a method of teaching rather than by proper evaluation of what are the desired learning outcomes for a course in anatomy.

A study by Esther M. Bergman et.al (2008) on Innovations in undergraduate medical education, such as integration of disciplines

and problem based learning, have given rise to concerns about students' knowledge of anatomy. His study focused on several studies investigating the knowledge of anatomy of students at the eight Dutch medical schools. The studies showed that undergraduate students uniformly perceived deficiencies in their anatomical knowledge when they started clinical training regardless of their school's didactic approach. A study assessing students' actual knowledge of clinical anatomy revealed no relationship between students' knowledge and the school's didactic approach. Test failure rates based on absolute standards set by different groups of experts were indicative of unsatisfactory levels of anatomical knowledge, although standards differed markedly between the groups of experts. Good test performance by students seems to be related to total teaching time for anatomy, teaching in clinical context, and revisiting anatomy topics in the course of the curriculum. These factors appeared to outweigh the effects of disciplinary integration or whether the curriculum was problem-based or traditional.

Another study at School of Medicine of the University of Melbourne by Samy A et. al (2007) concluded that Both first- and second-year students, regardless of their gender, academic background, or citizenship felt that the time devoted to dissection classes were not adequate. Students agreed that dissection deepened their understanding of anatomical structures, provided them with a three-dimensional perspective of structures and helped them recall what they learnt. Although their perception about the importance of dissection changed as they progressed in the course, good anatomy textbooks were perceived as an excellent resource for learning anatomy. Interestingly, innovations used in teaching anatomy, such as interactive multimedia resources such as computer aided learning (CAL) self directed learning (SDL) and Directed self learning (DSL) have not replaced students' perceptions about the importance of dissection.

CONCLUSION

Based on the objective of anatomy curriculum most of the medical educationist suggesting the modular (integrated) approach to the Anatomy, Physiology and Biochemistry, but as per the content delivery their suggestions were not up to the mark since the lecturers don't have enough time and freedom to deliver the lectures, whereas most of academicians, anatomists suggests to stick to the old curriculum where the lecturer will get enough freedom to deliver the curriculum. Later is the one satisfy/suitable curriculum delivery method to fulfill the most of the preclinical subjects.

Based on the academician suggestion many western universities readopting the traditional curriculum in preclinical practices since it will explores the human body in detail compare to the modular (integrated approach) which is concentrating more at problem based learning.

While considering various opinions of the medical school administrators and medical educational specialists, Modular (Integrated) approach is more students centered where the students will learn by them self under the guidance of the concern lecturer in addition to this, above method is only solution for the medical administrators to overcome the experts deficiency in preclinical departments.

As per my view both the curriculum got their own importance but old is gold which is already proven and produced many great hands to the medical world but the modular (integrated approach) the quality is still questionable where the students get minimum guidance from the expert hands since its more over the student centered and recommending extensive research in this area.

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