



Anatomy Teaching as an Impetus for Medical Student's and Graduate's Interests in the Basic Medical Services

S. S. ADEBISI, PHD

Department of Human Anatomy, Faculty of Medicine
Ahmadu Bello University, Zaria

E-mail: Sam_adebisi@yahoo.com

ABSTRACTS

Anatomy is with no controversy the bed rock of competent medical practice. A faulty beginning in medical training in the basic medical subject would tell tales in the resultant little or no interests and poor clinical performances. Lately, although for no laudable reason, the teaching of anatomy had been suffering a downward trend, a very dangerous development, if allowed, in the medical enterprises. The present work takes a look at this from the medical students' perspective with the view to raising a cautious alarm and for timely correction.

Keywords: Medical education; Anatomy; surgery.

Medical education is both highly priced and prized in Nigeria. However, in spite of the relative dearth in well-qualified teachers in human anatomy which is one of the cardinal subjects in the training of health workers, surgeons and physicians alike; anatomy is taught in Nigeria medical schools as a basic medical science course at 200L and 300L along with others; physiology and biochemistry; and in some institutions, community medicine and pharmacology are usually inclusive.

At Ahmadu Bello University, Zaria, (ABU), for instance, anatomy lectures usually include gross anatomy of upper and lower limbs, thorax, abdomen, pelvis and perineum, general and systemic histology and embryology at 200L of two semesters; and at 300L, the course is concluded as gross anatomy of head and neck, neuro-anatomy, systemic histology, and human genetics.

Continuous assessments are given to students in each components of the course at least once, prior to the main examinations. The sub and main examinations are written respectively at the end of the second semester of 200L and the third semester or 300L; which is normally the main pre-clinical or the first professional medical examination; this qualifies successful candidates to proceed to the clinical studies - 400L to 600L. Depending on their performance at each level, students are declared passed, - if passed all the

courses; re-sit- if failed for 2 courses; repeat - if failed at the re-sit; and withdrawn, if failed all the courses at first sitting or at re-sit exams.

Methods of examinations include written - essay and multiple- questions; practical- staple chase, and orals before both internal and external examiners. Considered obtainable pass mark for students in each course is 50% and above. The sum total of the percentage scores of students in each of these components determines his or her overall grade, and are declared as passed with: A-distinction, 70-100; B, 60-69; C, 50-59; D, 45-49; E, 40-44; or F, 0-39.

The present study evaluates:

1. How to possibly improve on the teaching of anatomy in the Nigeria medical schools
2. Encourage medical students, graduates interests in basic medical science subjects particularly, anatomy;
3. Possible co-teaching of pre-clinical subjects, such as anatomy and surgery, in the clinical years.

MATERIALS AND METHODS

Opinion polls were conducted from questionnaires issued to 1080 pre-clinical medical students consisting of 620 students in 200L and 460 students in 300L, from the following institutions: Federal - Ahmadu Bello University, Zaria (ABU) and Bayero University, Kano (BUK); State - Delta State University, Abraka (DELSU) and Benue State University,

Makurdi (BSU); private - Igbinedion University, Okada (IUO), reflecting the various stake holders in the venture. The students were made to complete the questionnaires free of coercion or pressure from staff or co-students, and were promptly returned and collated. Statistical analysis was done to compute and compare interests.

RESULTS

The students excitedly seized this opportunity of the questionnaire to express freely their feelings about the subjects they were made to offer in their early years in the medical schools. From the observation, contrary to the common perspectives of students about anatomy as a dreadful subjects, the following opinion polls were obtained from their responses to the questions: 72.5% (200L) and 82.6% (300L) preferred anatomy to other basic science courses; 45.1% (200L) and 72.8% (300L) indicated their interest to specialize in surgery later; 40.3% (200L) and 34.0% (300L) supported teaching anatomy in clinical years; 43.2% (200L) and 42.4% (300L) were most interested in embryology, while 31.6% (200L) and 47.8% (300L) preferred gross anatomy; and 25.2% (200L) and 9.8% (300L) showed most interest in histology. The students' interests/responses by percentages of their population to the various questions in each of the institutions cited were almost identical.

DISCUSSION

From analysis of the results, it is apparent that students' interest in anatomy is proportionate to their level of studentship; indicating their better understanding cum appreciation of the course as they advance in study. Compared to 200L, more of the 300L students preferred anatomy to the other basic courses and also chose to specialize in surgery in their latter years, since they had now realized better, the interrelationships of anatomy and surgery. Such prospective surgeons would inadvertently teach anatomy flawlessly, if given the opportunity in the future.

Little or inconsistent interests exist from the polls, between the level of studentship and the

anatomical subjects: that is, gross anatomy, histology and embryology. This could possibly be interpreted in terms of students' response being influenced by their previous performances in the subjects, for instance, continuous assessments.

Anatomy, cutting up, or dissection: now used to signify the science of the form and structure of living beings, originally is a department of biology that is divided into animal and vegetable anatomy. Animal anatomy is further divided into comparative anatomy, that is, the study of different animals for purposes of comparison, and special anatomy which studies the form and structure of a single animal, for instance, human anatomy. This last embraces the departments of embryology, the study of the formation of living beings, and morphology, the study of the form and structure. Further important divisions are: physiological anatomy, the study of parts in relation to their functions; surgical or topographical anatomy, which considers the relations of different parts, and pathological anatomy which treats of the changes brought on by disease, in various organs or tissues (Merrigan and porter, 1907).

Unfortunately, the teaching of anatomy has been confronted with several challenges and undergone dramatic changes since the early days of medical education: as the other disciplines grew in importance, the time available for anatomy was steadily reduced; cultural and religious beliefs about dissection often made the practice illegal and even when dissection was acceptable, cadavers were difficult to obtain (Ausoux, 1841).

Without much controversy, anatomy is probably the oldest medical science: although anatomy and surgery had been age-long twin medical courses rarely separable for their tight relationship and perhaps origins. In fact, in the earliest days of medical career, the surgeons and anatomists were almost indistinguishable. Surgeons' works in the earliest days in anatomy gave birth to some of the most popular textbooks of anatomy today. For instance, Henry Grays Published the first edition of Gray Anatomy, the well-reputed Anatomy Bible in 1958: the first

and the current editions of the renowned Cunningham manual of practical anatomy were published by D.J. Cunningham and G.J. Romanes respectively. (Akpuaka, 2002) while 'Grant's Atlas of Anatomy' was published by J.C. Grant in 1943.

Moreso, even till the present time, some anatomy departments and subjects are manned and taught by surgeons; although this invariably is consequent to the yet lack of adequately trained teachers in this basic medical science. This sort of development however, on the other hand could encourage medical students to pick interest in anatomy with the view of studying/teaching the subject later. Prospects in anatomy are also better enhanced by postgraduate training in the subject. For instance, at Ahmadu Bello University, this had greatly encouraged medical graduates to join the work force in anatomy department over the years, since the commencement of M.Sc and PhD programs. However, orientation and encouragement of medical students in research is also suggestive to motivate their interests in basic medical science. According to a renowned teacher, Glew (2004), observed first-hand from having taught medical students and done research at a number of teaching hospitals in different regions of Nigeria over involved himself or herself in a collaborative research project with a faculty member in serious manner during the six years they were in training; and in a word of appeal, he urged the faculty and administrators of the Nigerian medical schools to integrate a substantial and meaningful research experience into the medical curriculum so as to enhance the educational experience of the students and the Research productivity of their faculties. Moreover, paalman (2000) cautioned that lack of adequate anatomy training in education and research will eventually retard a steady and the ultimate progress in biomedical research enterprise as a whole.

However, anatomical science is just much more than teaching and dissection of cadavers, thus limiting the expertise of surgeons in the subject; in fact, according to a report, the surgeons do not even receive enough training in anatomy to practice, not even in their own

specialty (Anibeze, 2003). The report also has it that 'over 98,000 deaths occurred in one-year, in addition to even a larger number of post operative complications in surviving patients due to inadvertent surgical mishaps' possibly traceable to inadequate knowledge in surgical anatomy. In addition, a declaration by a renowned surgeon reads thus: 'as my training advanced in plastic surgery, I realized that plastic surgery requires a very precise knowledge of anatomy' (Akpuaka, 2002). It is pathetic though, the practices in some medical schools in countries such as the United State of America and Switzerland among others, where gradual erosion of anatomy teaching, particularly, dissection of cadavers is now common (Anibeze 2004). This is quite worrisome especially as such shallow knowledge in anatomy is quite inadequate for post graduate training for the prospective practising surgeons, radiologists and physicians. (Groscurth et al., 2001; Anibeze, 2003; Didia, 2004).

The present author also passionately joins in the crusade to resist these raging waves of indifference and idle teaching of anatomy from blowing over Nigeria. Since surgeons in the surgical theatre are not being aided by surgical or anatomical manual or atlas, the need for an adequate knowledge in anatomy, can not be over emphasized. The two years pre-clinical classes in anatomy seems inadequate, further training in surgical anatomy in the clinical years appears to be imminent, to salvage this noble profession: a stitch in time, saves nine.

Over the years, anatomy has maintained cordial relationship with other disciplines. For instance, radiological advances in the twentieth century have allowed scientists to make remarkable connections between anatomy and physiology, and researchers too, are integrating the study of anatomy with other disciplines, including biochemistry, genetics, and biophysics. People have always sought better ways to illustrate and understand the structure and functions of the internal body. Before the discovery of x-rays in 1895, the only practical way to see inside the human body was to observe an operation or a dissection. Physicians now have access to advanced technology such as CAT and PET scanners, and magnetic resonance imaging

(MRI), all of which go far beyond microscopy and x-rays. These techniques permit physicians to look inside the body without performing surgery, another major breakthrough in the anatomical science (Carola, 1992).

The study of anatomy as a science extends from the earliest examinations of sacrificial victims to the sophisticated analyses of the body performed by modern scientists. It has been marked, over time, by a continually developing understanding of the functions of organs and structures in the body. Methods have also advanced dramatically, advancing from examination of animals through dissection of cadavers to technologically complex techniques developed in the 20th century (Mazzio, 1997).

Anatomical research in the past hundred years had seized the opportunities of the advancing technological developments and growing understanding of sciences such as evolutionary and molecular biology to create a thorough understanding of the body's organs and structures. While disciplines such as endocrinology have explained the purpose of glands that previous anatomists could not explain, medical devices such as MRI machines and CAT scanners have enabled researchers to study the organs of living people. Progress today in anatomy is centered in the field of molecular biology since almost all the macroscopic aspects of the field have now been catalogued and addressed. (Porter, 1997).

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QUESTIONNAIRE

Please freely and sincerely answer the following questionnaires, and underline your choices of the options provided as appropriate. Your answers/choices and response shall be treated with confidence. This is a study to seek your personal view with the aim to improving the teaching of anatomy cum the specialization and the practice of surgery in Nigeria.

1. What level are you now in Medicine? (Fresh 200L) (fresh 300L) repeat 300L)
2. Which course do you find most interesting? (Anatomy) (physiology) (biochemistry)
3. Which course do you find most difficult? (Anatomy) (physiology) (biochemistry)
4. What is your attitude to anatomy? (Very interested) (Not interested) (Just to pass)
5. Are staff in anatomy practical encouraging? (yes) (No)
6. Are lecturers in anatomy encouraging (Yes) (No)
7. Which of the anatomy practical do you prefer? (Histology) (Dissection)
8. For which practical do you normally create extra time? (History) (Dissection) (All)
9. Do you personally dissect cadavers during practical periods? (Yes) (No)
10. Do you normally create extra time for cadaver dissection/study? (Yes) (No)
11. How is your performance in anatomy exams/tests so far? (Distinction) (Good) (Average) (poor)
12. What is your expected performance in anatomy? (Distinction) (Good) (Re-sit) (repeat)
13. Do you wish/propose to specialize in surgery? (Yes) (NO) (Not decided)
14. Do you wish/propose to specialize in anatomy? (Yes) (No) (Not decided)
15. Will your performance in anatomy likely to determine your proposed specialty? (Yes) (No) (Probably)
16. Will your performance in anatomy likely to encourage you specialize in surgery? (Yes) (No) (Probably)
17. Do you advise/support teaching anatomy in the clinical years? (Yes) (No) (Indifferent)