Journal of Morphological Sciences
J Morphol Sci
Brazilian Society of Anatomy

Case Report
J Morphol Sci 2023;40:269-271

Why we Should Preserve and Promote Anatomy Education and Research (and How) in This New Frontier. The Mozambican Experience

Mahomed Sidique Abdul Cadar Dadá[1,2], Abdul Habib Mahomed Dadá[1,2,3]

[1]Anatomy Service, Eduardo Mondlane University, Maputo, Mozambique.
[2]Instituto Superior de Ciências e Tecnologia de Moçambique, Maputo, Mozambique
[3]Escola de Formação DentalCare, Maputo, Mozambique

Disclose and conflicts of interest: none to be declared by all authors

ABSTRACT

Introduction: anatomy is a very old discipline and the basis of all other disciplines in the medical course. At present, it is being marginalized. Nowadays the acquisition of cadavers is more and more difficult and must obey strict acquisition criteria. The cadaver donation programs are flourishing in many parts of the world, but in Africa, it is very premature to institutionalize them for cultural reasons. The objective of this work is to present the various challenges that anatomy currently has and why we should preserve and promote anatomy education and research (and how) in this new era of anatomy. It is a study on the challenges of anatomy in this era. Conclusion. Anatomy will continue to be an important.
Keywords: Gross Anatomy; Medical Education; Mozambique.

Introduction

Mozambique is a country in the eastern coast of southern Africa, with a population of 27 909 798 people(Instituto Nacional de Estatistica, 2020).The Eduardo Mondlane University (UEM) was founded in 1962, during the colonial era and it is the oldest and the largest university in the country, with a student population of UEM 39078 (*Universidade Eduardo Mondlane*, 2020).

The Faculty of Medicine of the Eduardo Mondlane University offers a degree in Medicine since 1963 and has already trained more than a thousand doctors for the country. Until the mid-1990s, it was the only institution in the country responsible for training doctors. Today there are other public and private institutions that are also dedicated to the training of doctors (*Universidade Eduardo Mondlane*, 2020).

The aim of this work is to present the various challenges that anatomy currently has and why we should preserve and promote anatomy education and research (and how) in this new era of anatomy.

Case report

Being a doctor in the 21st century has become a great challenge. Based on the redefinitions that have occurred in recent years, regarding the conception of the doctor's role in society, the need for changes in their training that accompany the new professional profile and that help to implement the health care model has been reinforced. In this sense and despite the scientific and technological evolution and the benefits it offers, the anatomy must remain relevant to the health medical courses, offering knowledge to all medical subjects. Knowledge of Human Anatomy is the cornerstone of medical knowledge.

Gross anatomy is a mandatory and fundamental discipline in all health courses, taught at the beginning of the course, it is a prerequisite for the other disciplines of the medical course, and the first contact with the human body provided bases for the future professional and health. It is the only discipline that forces students to use anatomic language in the first year of the course. This knowledge deeply helps in clinical life, during anamnesis, objective examination and in choosing the best means of diagnosis to reach a solid diagnosis. Anatomical language is no more than medical language. The same language that the professional future will use throughout his life.

In our university, the gross Anatomy is taught by theoretical e practical classes that include seminars and dissection sessions. The use of prosections specimen is most common procedure.

Like all medical school, the first contents of the course take into account the need of getting a pattern in the study of the human body. Thus, the anatomical position is a theme that is learned on the 1st day of anatomy class in the Medical Course of Gross Anatomy in UEM, along with terms of relation and movements and ways of studying anatomy, is a standard common point of reference that allows all who study the human body to discuss the parts of the body within the same frame of reference and experience.

DOI: 10.51929/jms.40.269.2023
ISSN 2177-0298

These contents are used for the health professional's whole life, when a patient is observed. Similarly, the anatomical position and the first anatomical terms accompany the future professional forever in your life. Anatomical plans are used in the doctor's daily routine, when necessary, in a determined slice on the tomography or MRI scan. Inspection, palpation, percussion, auscultation and radiological studies are the doctor's daily routine and were also learned in the 1st days of class, moving a patient to another doctor or needing to elucidate a process to a patient or your family members.

The goals of the knowledge of human anatomy, whatever the context of the Curriculum must be a learning process that corresponds to a complete knowledge of the anatomical content of the human body, so that the new doctor can be able to diagnose and treat changes in organs and structures.

Anatomy is divided into 4 subjects studied from the theoretical point of view (books, texts, CD animations, figures, etc.), and practical with participation in practical laboratories (dissection) with the opportunity to approach the human body through manipulation of corpses and anatomical parts.

The study of Anatomy is carried out in four semesters with the designation of Anatomy I, Anatomy II, Anatomy III and Anatomy IV or Clinical Anatomy, with 80 hours each semester, 18 theoretical and 62 practical's. In this learning, students must be able to make use of anatomical terminology, describe the general anatomical structures of the human body, their normal relationships and their functional anatomy.

The Clinical Anatomy studied in the 4th semester and which corresponded to an adaptation of topographic anatomy to the clinic, has the purpose of taking students to apply anatomical knowledge to clinical practice and to develop anatomical thinking in a context of clinical competence. This anatomy study model aimed to explain the anatomical foundations of the main clinical processes of normal physical examination; interpret, according to the anatomical basis, normal and altered radiological images and the most frequent clinical and surgical disorders. The teaching of Anatomy in this system, sought to be student-centred, but it consisted of theoretical classes (magistrals), practical classes (dissection, prosections specimen), theoretical practical classes (illustrated with images and maps) and seminars.

The study of Anatomy should be applied to the various technical procedures and daily routines in the exercise of the medical profession.

Anatomy should not be seen as a basic discipline, but as knowledge that must accompany all areas of medical knowledge across the board, intersecting its various aspects, with relative depths in each of the areas and moments of the study.

Medical and mainly surgical errors result from ignorance of anatomy. A good knowledge of the structure, its surrounding relations and points of reference are essential for surgery.

Anatomy is a discipline that needs a lot of memorizing, a dislike to students. However, it is the teacher's obligation to teach this subject with passion, teaching students to read atlas images and applying them to radiographs, tomography or resonances, creating mnemonics that help students post the material, trying to explain the logic of some knowledge and above all showing the usefulness of anatomy in the clinical field, always giving anatomy applied to each theme at the end of the class.

Anatomy must be taught using new technologies, but showing the structures in the cadavers and anatomical parts. This is what makes the difference between competition and other subjects: the practical part of the course. It should be used to the fullest. The student must have three-dimensional and local knowledge of the structures.

The greatest challenges for our school are obtaining corpses. The body donation system does not apply to African reality, where the corpse is venerated and must be buried. The unclaimed bodies after 15 days and without embalming, are already, by themselves, an impractical body for dissection. The storage of cadavers is expensive.

The large number of patients with HIV is also a limiting factor in the acquisition of bodies.

The best option is the preparation of parts by teachers who already have experience of dissection to avoid accidents with needles and not to destroy the few existing parts.

The study with cadaver allows the dispelling of the fears that some students have. The touch with the anatomical pieces and the feeling of the structures is a unique experience in the student's life and should not be exchanged for new technology. This experience attracts the student and makes him closer to anatomy.

The high incidence of AIDS in the Mozambican population makes routine examinations of all bodies that enter the Department mandatory for reasons of biosafety. However, this requires a large financial cost. The Faculty of Medicine of UEM receives exclusively unclaimed bodies after 15 days of death. The disadvantage of this process is: 1. Reception of rigid cadavers, which are not optimal for teaching. 2. Eventual complaint from the family after the 15-day period. It is also unethical and viable to inject embalming solution in corpses that have not reached the period established by law. Therefore, dissection of cadavers for learning Anatomy started to be unusual.

Currently, surgeons in general and ENTs in particular are training without dissecting, and then we see a weak ability to dissect during live surgery. Surgical specialty schools no longer have training in cadaver, fresh or embalmed, in their curricula. The notion of the neighbourhood of anatomical structures was lost with the new generations.

Unfortunately, anatomy is currently seen as a dead discipline and there are few people interested in pursuing this career, who have suffered budget cuts from the faculties and increasing pressure to decrease their hours and even merge with other disciplines such as physiology or histology. What we see today is anatomy teachers who are good at technology and zero in the dissection.

Discussion

There are already health courses, such as pharmacy and nutrition, which are done without the anatomy subject. Some anatomical notions are given in the physiology subject.

The subject of anatomy today has lost the real value of a nuclear chair, because the new anatomy professors are not really anatomists and do not give it of being passionate, but also because the other professors of clinical subjects despise the subjects of the basic cycle.

The student actually is only concerned with having the slides of the teacher and does not want to study through traditional textbooks. This situation decreases the student's ability to search for information, being on the teacher's premises and often a bad teacher.

The classic method of teaching anatomy with a board has been replaced by PowerPoint presentations. More and more teachers are adopting this method that is very much appreciated by students. The lessons on the board are an art demonstration with the teacher making anatomy drawings. The new teachers do not use this education system and thus future doctors are formed without the ability to outline a health problem, such as a tumour occupying an organ.

Anatomy is art and should be studied with a passion. Students and teachers should draw for a better retention of the material, because a picture is worth more than 1000 words

Conclusion

Anatomy will continue to be an important discipline in the life of medical students and doctors. The use of cadavers will continue, because despite all existing technologies, it remains the only essential tool

Acknowledgements

The authors acknowledge **Dra Zulaikhah Mahomed Sidique Dadá** for reviewing the English.

References

Instituto Nacional de Estatistica. (2020). Instituto Nacional de Estatistica. http://www.ine.gov.mz/
Universidade Eduardo Mondlane. (2020). https://www.uem.mz/

Mini Curriculum and Author's Contribution

1. Mahomed Sidique Abdul Cadar Dadá- MD, ENT; MSc, Phd. Associate Professor, Anatomy Service, Eduardo Mondlane University, Maputo, Mozambique. Contribution: Effective scientific and intellectual participation of the study, responsible for literature review on database, Writing of case report and critical review and final approval. ORCID: 0000-0001-8864-3219

2. Abdul Habib Mahomed Dadá-DDS. Intern Assistant, Anatomy Service, Eduardo Mondlane University, Maputo, Mozambique. Contribution: Effective scientific and intellectual participation of the study, responsible for literature review on database, preparation and draft of the manuscript, critical review and final approval. ORCID: 0000-0001-7392-3998

Received: January 24, 2023
Accepted: March 3, 2023

Corresponding author
Mahomed Sidique Dadá
E-mail: motiar786@gmail.com