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Research Article

The Use of Autopsy as a Teaching Tool in Medicine

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Abstract

While the investigation of death in the form of autopsy has contributed significantly to advances in medical education and research, modern technology in the form of diagnostic methods has diminished the relevance of internal examination of cadavers as a valuable learning tool. The absence of realistic training models, coupled with a perception of the importance of autopsy in academic activities, has led educators and especially students to confirm the benefits observed in research, including anatomical knowledge, observational skills, the development of attitudes towards death, and improved communication skills with the bereaved. This underscores the need for a revision of current curricula and teaching guidelines.

Keywords: Autopsy; Education; Teaching; Training; Cadaver

Introduction

The investigation of death has its earliest records dating back three thousand years to Ancient Greece and gained more academic character during the Renaissance when painting served as a means of record, enabling the teaching and dissemination of knowledge produced by pathological anatomy [1-3]. However, the constant conflict with religious beliefs hindered significant advances in medical sciences, as ethical questions posed challenges. According to a study published in the Journal of Anatomy, rarely were corpses donated for anatomical dissection in England, and there were instances of selling bodies to medical students or even grave-robbing. This practice persisted in the 18th and 19th centuries [4,5].

This scenario changed around 1800 with the studies and dissections conducted by Karl Rokitansky and Rudolf Ludwig Karl Virchow, who not only popularized the investigation of death but also marked a period of scientific advancement by elucidating the pathophysiology of many diseases and enriching anatomical knowledge of the time [6-8]. Over time, this era of "direct investigation" of death gave way to modern technologies, which raise questions about the necessity of autopsies. Such thinking reflects a sharp decline in the number of autopsies in Brazil and worldwide, resulting in negative consequences for medical education, research, accurate determination of the cause of death, and assistance to the population [9,10].

Although most studies reporting the role of autopsy in medical education were published over 30 years ago, this teaching tool has remained relevant but occupies limited space in current literature [11-13]. The ethical debates of the past have transformed into skepticism in the academic community, both among faculty and students. Their perspectives on the role of autopsy in medical education highlight the need to reconsider curricula and teaching guidelines [14-16].

Objective

This review aims to fill the gap left in recent decades due to the scarcity of literature on the academic use of autopsy as a teaching tool in various medical fields. It seeks to rediscover the historical value of internal cadaver examination and its relevance in the age of modern technology.

Methodology

Study Design

A narrative review was conducted through systematic literature search using the following keywords: (autopsy) AND (education OR learning OR teaching). These descriptors were searched in major databases (MedLine, Web of Science, Embase, Scopus, and Lilacs), following the checklist proposed by Green., et al. (2001) [17].

Study Selection

The search results were compiled in the Rayyan® database. Inclusion criteria encompassed studies published between 1993 and 2023 in Portuguese, English, or Spanish, with the theme "autopsy" related to medical education. Studies in languages other than the mentioned ones, case reports, and case series were excluded. Quality assessment was performed using the Scale for the Assessment of Narrative Review Articles (SANRA).

Discussion

The autopsy has been a traditional activity in medical education, predating pathological examination for diagnosis. It provides residents and students with skills in anatomical dissection, including the ability to recognize and manipulate fresh tissues, identify dissection planes, understand anatomical relationships between organs, experience tactile feedback regarding texture and resistance of structures, and examine fluid characteristics [18,19]. Research and education are intertwined practices, and exposure to research should begin early in the academic phase, allowing students to gradually learn the necessary processes [20-22].

The cadaver, through autopsy, as an object of education, has been presented in several publications as one of the best training models for anatomy dissection. Students reported that dissection makes learning more interesting, improves retention of knowledge, and provides a three-dimensional perspective of anatomical structures [23-25]. Cadaveric dissection also deepens the understanding and lasting retention of knowledge, fostering respect for the human body under study [26,27]. This experience allows students to develop a doctor-patient relationship early in their medical training, exploring and encouraging essential professional attributes such as respect, dignity, compassion, and empathy toward suffering [28,29].

Apart from the positive perceptions of students and residents regarding the use of cadavers in anatomy education, a significant portion of the faculty, especially those involved in teaching and research, affirms the definitive role of cadaveric dissection in anatomy learning in medical education [30,31]. Challenges such as the odor of preservatives (formaldehyde) and the perceived stress of the time-consuming activity, which subjectively varies according to the student's experience, were some of the difficulties described by students [32-34].

Cadaveric dissection stimulates skills, courage, and the ability to work confidently with the human body, free from fear of future practices [35-37] These characteristics, along with others mentioned in various articles, support the recommendation of human dissection as an integral part of medical training, introducing students to the topics of death and dying, ensuring prior exposure, and guaranteeing the development of coping mechanisms [38,39].

Conclusion

Due to the long period of devaluation of autopsy as a teaching tool, the movement to emphasize its value as a useful learning tool still requires stronger advocacy for significant changes in medical education. This is justified by the well-established evidence in the literature regarding cadaveric dissection as a means of developing cognitive skills and the ability to confidently handle the human body. Furthermore, important non-technical skills such as attitudes toward death and communication skills with the bereaved can also be nurtured by this comprehensive tool in modern medical education.

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