Artigo Original

# BIOETHICAL ANALYSIS OF THE USE OF THE NEWLY DECEASED IN MEDICAL TRAINING

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**ABSTRACT**
Bioethical analysis of the use of the newly deceased in medical training.
**Objective.** The objective of this study is to carry out, a discussion on the subject of bioethics and cadavers based upon a critic review of literature.
**Methods.** Literature review based on a survey of articles published between 1977 and 2007 on websites Biblioteca Virtual de Saúde, PubMed and SciElo, using the following keywords: newly deceased patients, newly dead patients, simulators. The review was complemented by books on ethics and bioethics, as well as a critical evaluation of the subject.
**Results.** The utilization of the newly deceased to learn invasive procedures is very common and seldom admitted. Procedures are usually carried out secretly, without family knowledge or consent, often without proper supervision from professors. In Brazil, moral and legal regulations do not back these practices, and their ethical aspects should be more widely discussed in undergraduate medical training.
**Conclusion.** It essential that the ethics of using the newly deceased to learn invasive procedures be discussed in academia (by professors and students alike) and be extended to practices as well. Performance of these procedures by students should always require authorization from family members. Simulators should be the first step in medical training.

Key words: Medical education. Bioethics. Simulation. Cadaver.

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## Introduction

Medical training is a complex process, involving the acquisition of a specific professional culture, including specialized cognitive groundwork, as well as professional skills, competences, and values.[1] Currently, the *Diretrizes Curriculares Nacionais para os Cursos de Graduação em Medicina*[2] (National Curricular Guidelines for Undergraduate Medical Education Courses) counsel diversification in practice scenarios so as to train physicians capable of working in various levels of medical care, prevention and surveillance, following debates about integration and interdisciplinarity in the Medical Sciences.

In various scenarios, the practical training process involves the fact that medical students do not learn simply from books and lectures, since some technical skills need to be learned at various levels of the system.[3] At first, those skills can be divided into (1) those every physician must have, and (2) those expected from various specialists. Though there is no formal consensus about discriminating the two skill sets, some procedures are widely regarded as an expected part of overall medical training, i.e., of generalists: cardiopulmonary resuscitation, simple sutures, puncturing and draining abscesses. Other, more specific skills, such as pericardial punctures, tracheostomies, lumbar punctures, among others, though they need to be taught to many professionals, may or may not be part of the skill set of all physicians. This is a polemic subject: after all, which skills should every medical school graduate have? What should every generalist know how to do? This certainly a debate for medical education fora. The issue is especially connected to the debate about the practices students utilize to learn such skills, practices which often involve the newly deceased, i.e., individuals who only recently passed away. Those practices, often considered routine and not ethically complex by physicians and medical students, actually open up a series of ethical quandaries upon

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close examination. From that standpoint, the main question in this study becomes particularly relevant: in an educational environment, how to provide opportunities for students to develop medical skills without losing sight of ethical and humanist technical aspects? The objective of this article is to reflect about these subjects, focusing especially on the ethical issues surrounding the use by medical students of the newly deceased in invasive procedures.

## Methods

This study surveyed debates about the morality of using the newly deceased to learn invasive procedures and skills inherent to medicine. Thus, to make the article more easily accessible to readers, we chose to contextualize the primary aspects of medical training, continuously discussing and challenging the moral aspects of medical students using the newly deceased in their learning, ultimately approaching alternative paths to the acquisition of the necessary practical skills.

This reflection is supported by a review of the literature found in the following websites: BVS (Biblioteca Virtual em Saúde [*Virtual Science Library*]), PUBMED (U.S. National Library of Medicine), and SCIELO (Scientific Electronic Library Online). We searched for articles from between 1977 and 2007 containing the following keywords: newly deceased patients, newly dead patients, simulators, recém-cadáveres, simuladores. After critical analysis of article abstracts and titles, we selected those concerning the ethical or legal aspects of using the newly deceased in teaching and learning. From this sample, we also analyzed articles listed as *related articles*; these were likewise selected for their relevance to the primary subject of this study following critical analysis of their content. The review also included reading books and complementary bibliography focusing on ethics and medical education, followed by critical assessments of the subject.

## Results

The content of the text selected for the review was divided into three primary subjects: (1) *The context of practical training in Medicine,* (2) *Ethical aspects of using cadavers in practical training in Medicine* e (3) *The context of practical training in Medicine.*

### The context of practical training in Medicine

The unequivocal need for psychomotor skills training is the starting point for a historical reflection about the practice of medicine. It is widely known that medical training activities used to take place in charity or public hospitals.[4, 5] In both environment, subjects tended to be poor and dependent on public or charitable aid. Currently, medical care is seen as a fundamental constitutional and human right in Brazil,[6] so patients treated by Brazil's Sistema Único de Saúde (Unified Health System, the public health care system) are increasingly seen as citizens and as moral subjects,[7] requiring medical care[8] and integration, based on article 198 of the Brazilian Constitution.

Knowledge of the theory supporting and guiding procedure applicability are critical requirements for learning medical techniques and practicing the skills necessary to perform them. The issue of how to handle the training of young medical professionals stands on its own as an important subject of medical education. The possibility of learning a technique correctly, without guidance and supervision from a professor during practice, is usually of doubtful value. Professors have a widely recognized strategic role as learning facilitators and guides in this process.

An important aspect is often overlooked in debates about practical training: the consequences and implications for individuals on whom said techniques are applied. Who receives those early procedures? In what conditions? Especially when considering the training in invasive procedures, particularly those concerning the treatment of critical patients, what kind of compromise in quality can occur and what outcomes can we expect? A study from the 1990s found an 18 percent rate of oral trauma in endotracheal intubation performed by students.[9] How, then, to diminish the likelihood of injuries? How, indeed, to be ethical during this educational stage and allow for professional training without compromising quality of care? We should even consider that useless treatment is sometimes provided, with patients undergoing procedures solely to satisfy family requests or to provide training opportunities.[10] Should all students learn all invasive procedures? Should any student learn those procedures initially and directly on human subjects? Is it ethical to provide therapies and procedures without any benefit to patients? These issues require careful consideration on the part of medical professionals.

In the past few years, Brazil has witnessed increasing concern with the ethical education of new physicians,[5] focusing on the logic of humanizing health care and health services.[11] However, in general, reflections about ethical quandaries directly involved with practical training are seldom systematic in medical courses and critical training moments.[5] This fact also leads us to recognize that many students focus only on their immediate interests and are often self-interested, dismissing, ignoring or simply missing opportunities to develop their moral competences and sensitivity, as if a good doctor does not necessarily require those qualities.[12] American studies show that even in the US, where the doctrine of consent is ethically and legally consolidated, neither students nor hospitals effectively request consent from patients before performing procedures.[13] Indeed, many students do not volunteer their level of training and expertise at performing procedures, while others do not even identify themselves as such, afraid patients will refuse and they will lose the opportunity.[14] What students think of identification is an even greater cause for concern: in time, they not only cease to identify themselves, they also come to believe doing so is unnecessary, most likely considering themselves capable of caring for patients without supervision from more experienced professionals, even in complex situations, without the patient knowing. The fact is that refusals, though below expected levels, do not justify this

course of action. Santen[15] remarked to that effect in a study in which 102 of 114 patients gave their consent to a procedure, acknowledging they were to be performed by a student. The same is true for a study by Benfield,[16] in which 73 percent of parents in a Neonatal Intensive Care Unit gave their consent. However, patients from another Emergency unit in a study by Hemphill[16] were unaware of the roles and responsibilities of students. This winds up supporting the disrespectful and unethical actions of students, who do not reveal their roles and formal training levels. How to reverse this scenario, recognizing the importance of having patients know the training level of their physicians us a mode of behavior that shows patients the respect they are due?[18]

**Ethical aspects of using cadavers in practical training in Medicine**

The issue of using the bodies of the newly deceased to teach invasive procedures is an example of routine practices mostly ignored by systematic reflection about the training process.[19, 20, 21] Though frequent in student reports about colleague behavior, the practice is seldom admitted. It is also as common in Brazil as abroad.[22, 23, 24] We should also consider that many physicians may have taken this route to learn procedures such endotracheal intubation, deep vein puncture, thoracotomy, tracheostomy, pericardiocentesis, and lumbar and articular puncture; procedures performed secretly, behind screens in public emergency rooms. What does the general public think about these facts? Do communities actually debate it? A 1998 survey by Tachakra[25] shows that people want to know about the performance of such maneuvers and procedures, as well as to be consulted before the fact. They want procedures to be done quickly and respectfully towards the dead. Having acknowledged these facts and the established opinion of those possibly involved, we move to a reflection about the morality of such practices.

Initially, we should characterize two different scenarios: the clinical scenario, in which there is an emergency and patient death is imminent; and that in which death is very recent, i.e., the patient is newly deceased. Setting aside the specific scenario of learning at the moment of cardiopulmonary arrest (when patients are still considered viable and procedures are still being tried to reverse their clinical status, despite the fact that the concept of viability and of death itself are not without controversy[26,27]), the analysis in this study concerns itself with scenarios in which the body is already lifeless and all resuscitation attempts have been made. We can finally state the question: is it right to use the newly deceased as a way to learn the motor skills of medicine, especially invasive procedures? Does the answer change if the student is an undergraduate or a physician with their own diploma?

The first issue is why the practice exists, but the answer is not easy. In principle, every physician should know how to perform at least some procedures that enable them to save lives in emergency situations, especially endotracheal intubation, needed for advanced life support.[28, 29] Learning and maintaining those skills is a major challenge for the medical profession.[30, 31] In and of itself, learning in live patients who actually need the procedure has explicit risks to the welfare and survival of patients. At that instant, both speed and quality of care are critical for success, and success can mean the difference between life and death. However, as mentioned above, having an inexperienced student try a procedure in which he is not fully trained surely adds to the risk, since the opportunity to perform procedures seen by students as essential are rare during their training.[32]

Based on the clear pertinence of learning the procedures, we can then argue that learning them in cadavers does not cause any additional harm to the deceased,[33, 34] thus justifying the use of the body and grounding it in medical tradition.[35, 36] However, the body can suffer new damage, and the family may suffer from the perception that unnecessary procedures are disrespectful to the deceased.[37, 38] Therefore, some harm would be caused, but to relatives. The issue then is if this harm represents a moral prohibition on this practice. Are there any specific regulations?

Searching the Federal Board of Medicine's database did not reveal specific regulations about the issue, and the Code of Medical Ethics did not provide reports or resolutions either. However, an article from the Brazilian Penal Code[39] is relevant. Article 212, chapter two, title five, Of Crimes Against Religious Sentiments and Against Respect for the Dead, criminalizes the practice of desecrating cadavers or their ashes, to be punished by fine and one to three years of incarceration. The only legal sanction for the use of cadavers in medical training can be found in Law number 8501, from November 30, 1992, which does not apply to the specific subject of this article, since it comprehends cadavers donated to science and dead at least thirty days.[40]

Therefore, we can understand that religious sentiments are the source of the legal prohibition of using cadavers for training in Brazil, as Zirkin states.[43] Identifying religion as the source is reasonable, especially when we consider that the three major monotheistic religions had a key role in enforcing the prohibition when they had the power to. Significantly, in Europe, cadavers could not be opened before the Renaissance, a prohibition grounded on the belief in the resurrection of the body and that man was made in God's image. Later, with the gradual secularization of European society, the conditions emerged to allow for the dissection of bodies. The practice came to be recognized as *essential* to medical practice, to the point that Bichat's 1801 defense of dissecting cadavers became famous: "Open up a few corpses: you w'ill dissipate at once the darkness that observation alone could not".[42]

We should also inquire whether a prohibition based on religion should or should not have power over a whole society. In principle, any religious prohibition should hold only for people who subscribe to said religions. It cannot, therefore, be imposed on a secular, democratic society like Brazil, or at least like Brazil aspires to. Indeed, we can ask if there is a secular reason behind using the bodies of the newly deceased to the ends described above. The first reference to be considered is Kantian ethics: "Act in such a way that you always treat humanity, whether in

your own person or in the person of any other, never simply as a means, but always at the same time as an end."[43] Thus, if your acts could not benefit someone who has just passed away, they would be prohibited as mere training mechanism, even if they could benefit all of mankind. We should, however, offer the following caveat: is a cadaver worthy of the same consideration as living person? If personhood implies the possibility of sentience, a cadaver can no longer be considered a person and is therefore no longer worthy of whatever consideration are granted to people in general. Of course, reflection does not stop there; after all, every deceased has their history, their social relations. The people that they were can merit respect, as well as what their bodies represent to the people they established relations while living.

This approach should be based on the fact that the debate around that established a policy of presumed consent for organ donation (i.e., everyone is an organ donor, since bodies belong to the State, not to individuals) caused a strong reaction in the press and among physicians themselves.* There was a vigorous defense of the principle that the family inherits all decision rights over the fate of the newly deceased. Nothing can be done without the express consent of family members. Thus, we can state that the *ethos* of Brazilian society includes this notion of who is competent to decide on what to do with a body. Therefore, considering the legal prohibition and the perception that society at large validates the prohibition, it would be unreasonable to have disrespect to that rule as standard. That means that using the newly deceased in learning activities is unacceptable and irregular, despite the fact that the prohibition comes from religious sentiments, which should be guaranteed in terms of individual, not necessarily collective, decisions.

However, we can still debate a new aspect of this issue when we consider the family as a new active subject in deciding the future of the cadaver.[47, 45] Is using the body of the newly deceased still unacceptable when the family authorizes the procedure beforehand, considering informed consent is a routine practice in Medicine and is held as one of the pillars of modern medical ethics?[46] Studies such as Olsen's[47] show that even for invasive procedures such as cricothyrotomy, 39 percent of families authorize using the newly deceased as subject. However, the question remains: Does family consent authorizes training with the newly deceased? Can we justify submitting the family to the stress and suffering from this request, even for procedures such as endotracheal intubation,[48] or should requests be made in each and every case?[49] Some have proposed a policy of presumed consent for certain procedures, unless refusal is clearly and explicitly stated beforehand.[50] And which procedures should be allowed? How could refusal be provided, considering the family is usually not consulted and individuals are unaware of what sort of thing can happen after they die? Could we establish a pre-authorization program, as is seen for organ donation in various countries as proposed by Morag?[51] But for what procedures? Who would teach the general public?

* For further information about this debate, see: Brasil. Lei 10.211, de 23 de março de 2001. Disponível em http://dtr2001.saude.gov.br/sas/dsra/lei10211.htm

On the other hand, society wants physicians to be capable of performing all indispensable procedures for good technical practice. How to reconcile these apparently conflicting interests? This issue should be the subject of further discussion.

**Seeking solutions: the use of technology in practical training in Medicine and selecting content**

The first requirement is recognizing that there technological resources that can replace humans and animals in the first stages of learning. Medical simulators were first introduced for training clinical skills in the mid-1960s,[52] and currently allow us to efficiently teach and learn most procedures essential for medical practice.[53] Incorporating simulators into training should be a routine part of medical education curricula. They should be the rule, not the exception, allowing students to encounter faithful reproductions of emergency scenarios and preparing them for real life.[54] It is widely known that the use of simulators need not be restricted to undergraduates and should be extended to medical professionals in *lato sensu* graduate education programs and medical residency,[54, 55] as well as recent graduates from medical schools.[56, 57] Some hypothesize that simulators would aid learning for various reasons:[58]

(1) students may practice as much as they need;

(2) mistakes can be spotted and corrected;

(3) no individuals (patients) are disturbed or harmed.

We can also see that students in training believe it is better that a technique be learned before it is applied to patients, so the use of simulators is an excellent way of having large numbers of students practicing skills in sufficient number.[59] Training with simulators thus becomes an appropriate solution to provide adequate training to (professional) neophytes.[32].

But even after previous training with dummies, there is always a first time with an actual human being. How do patients feel about that exposure is an issue to be considered. In his analysis of emergency room patients, Graeber found that, depending on the procedures, there is only little refusal to perform procedures previously tried on simulators.[60, 61] Therefore, the quality of practice is fundamental and determining, and should be strictly supervised by a competent professional that would follow and guide the student during the procedure, which would require that training supervision cease to be pro forma, as it so often is,and become actual supervision. Despite what the Federal Board of Medicine says in Resolution CFM number 663/75 1, which "determines that physicians keep procedures performed by medical students on sick patients under constant supervision,"[40] and likewise expressed in consultation-process CFM number 4.650/96 PC/CFM/number 13/97, which states that "the physician preceptor is exclusively responsible for the medical acts performed by interns,"[62] supervision in extracurricular internships is especially problematic, requiring concrete action from sanitation, professional and educational authorities.

Taking the use of simulators in training as granted, could we completely ban the practice of learning with the newly deceased? Probably not. We can, yes, accept it ethically, considering as *prima facie* condition that those socially recognized as having the authority to determine the fate of the bodies of the newly deceased, i.e.,

family members, give their consent. We are thus morally compelled to request family members to authorize the practice. This is also justified by how understanding relatives can be[63, 64, 65] and the high rates of acceptance for procedures among relatives.[66, 67, 68].

**Final considerations**

The issues discussed in this article are far from producing a consensus, thus requiring further theoretical and empirical research to widen the discussion.

As we sought to show throughout this article, it would be reasonable to adopt mandatory formal consent from patients' relatives and to distinguish between procedures that can be applied in the newly deceased and those causing mutilation. However, other issues remain unanswered. If we adopted the (apparently adequate) decision of limiting student practice to dummies, more than of all graduates from Brazilian medical schools, who have no access to already overcrowded graduate programs, would first experience the procedures directly in humans, possibly without supervision by experienced professionals.

Thus, a reasonable solution would be to restrict student practice to nonmutilating procedures, under strict supervision, and after obtaining the family's consent, preferably after training with simulators and restricting more invasive (mutilating) procedures to specialist training. Following recent warnings,[69] we should stress that we are not referring to the concept of legal guardians, but rather explicitly to relatives, a clear parallel to Brazilian rules about transplant scenarios.

Only a secular society based on diversity of opinions and attitudes can reach, or at least try to reach, democratic consensus on subjects about which law and rules are not sufficient responses, such as the matter at hand. As individuals involved in human and professional education, we should continuously bring the situation to the fore and reflect about it.

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