

Knowledge of medical ethics and bioethics by medical students

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Abstract

Are our medical students leaving college with the knowledge of medical ethics and bioethics necessary to practice the profession? How do they regard the discipline of bioethics? The purpose of this study is to answer these questions based on a study carried out with medical students from the first to the fifth year of University of Western Paraná, Francisco Beltrão campus. A questionnaire with 15 objective questions was applied, with space for dissertative comments. From the analysis of the results, we conclude that changes in the subject of medical ethics are necessary so that a more human and professional training can take place, which will prepare students to deal better with the dilemmas of the profession.

Keywords: Ethics. Bioethics. Students, health occupations.

Resumo

Conhecimento sobre ética e bioética dos estudantes de medicina

Estudantes de medicina saem da faculdade munidos dos conhecimentos de ética médica e bioética necessários para exercer a profissão? Como eles veem tais campos do conhecimento? É possível propor mudanças que melhorem sua formação? O objetivo deste estudo é responder a essas perguntas com base em pesquisa realizada com alunos do primeiro ao quinto ano da graduação em medicina da Universidade Estadual do Oeste do Paraná, campus Francisco Beltrão. Os estudantes responderam a um questionário com 15 perguntas objetivas e espaço para comentários dissertativos. A partir da análise das respostas e comentários, percebe-se que são necessárias mudanças na disciplina de ética médica no sentido de tornar a formação mais humana e os discentes mais preparados para lidar com os dilemas da profissão.

Palavras-chave: Ética. Bioética. Estudantes de ciências da saúde.

Resumen

Conocimiento sobre ética y bioética de los estudiantes de medicina

¿Los estudiantes de medicina salen de la facultad dotados de los conocimientos de ética médica y bioética necesarios para ejercer la profesión? ¿Cómo perciben tales campos de conocimiento? ¿Es posible proponer cambios que mejoren su formación? El objetivo de este estudio es responder a estas preguntas en base a la investigación realizada con alumnos del primero al quinto año de medicina de la Universidad Estadual del Oeste de Paraná, campus Francisco Beltrão. Los estudiantes respondieron un cuestionario con 15 preguntas objetivas y con un espacio para comentarios libres. A partir del análisis de las respuestas y comentarios, se percibe que son necesarios cambios en la disciplina de ética médica en orden a tornar más humana la formación y para que los estudiantes estén mejor preparados para lidiar con los dilemas de la profesión.

Palabras clave: Ética. Bioética. Estudiantes del área de la salud.

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Declararam não haver conflito de interesse.

The teaching of deontology and social rights of doctors became mandatory in the faculties of medicine from the 1970s and since then the teaching has been undergoing changes in its methodology according to the needs of the time¹. Today, the main challenge of society is to adapt to the frenetic speed of progress, innovating without losing touch with the medicine of Hippocrates, who studied diseases not only to treat them, but also to care for people. Bioethics was born from this principle, having a viewpoint that cares and protects life, avoiding the placing of life in the background by a blindness that does not allow us to see and feel the other, reducing everything to the same, that is, to what the individual believes². This stance *ignores that the perfection of the conduct itself consists in keeping each one's dignity without damaging the freedom of others*³.

When talking about the training of professionals who will take care of people in the physical, psychological, emotional, social and family dimensions, one should think about the knowledge of bioethics, which gives technical and theoretical foundations to this care. Concepts of ethics – partly present in the Código de Ética Médica – Brazilian Code of Medical Ethics (CEM) and in the Brazilian Medical Student Code of Ethics – bioethics and philosophy need to be studied and assimilated with clarity, under the guidance of professionals who, in addition to theorists, are examples to their students¹.

The term “medical ethics” refers to codes which establish the rights and duties of the professional. However, one cannot understand it only in its deontological form, or as a set of punitive laws used to solve damage caused to someone, but in a comprehensive way, as reflection brought to light to prevent errors⁴.

When thinking about the current conflicts of the doctor-patient relationship one should turn one's attention to education¹. What is expected of the six years of medical training is that the student will consolidate further his or her knowledge about medical ethics each year and will also clarify his or her discernment about conducts in the face of the various situations encountered in the practice of the profession. However, this is not what a research conducted in United States demonstrates⁵: medical school senior students began to consider routine ethical problems they had already encountered in their first year in college. This worrying data leads to certain questions: what is the basis of bioethics knowledge of our medical students? Do they give the proper importance to bioethics teaching

throughout the course? Do they know the codes of medical ethics in order to act ethically?

These are doubts that feed this research, which objective is to study the ethics knowledge of medical students of the Universidade Estadual do Oeste do Paraná – State University of Western Paraná (Unioeste), Campus Francisco Beltrão, through applied questionnaires and comparison with data from articles published in national and international databases.

Materials and methods

This is an observational, descriptive, cross-sectional study whose data were collected through questionnaires with objective questions that evaluated the understanding of medical students from the Unioeste Francisco Beltrão regarding the CEM, the Brazilian Medical Student Code of Ethics and bioethical issues. The students attended the first to the fifth year of undergraduation in the year the survey was conducted (2017), and all agreed to participate in the study, previously signing the informed consent form. 128 students were randomly selected from a total of 193 to answer the questionnaire with a 95% confidence level and a 5.04% margin of error.

The first four questions of the questionnaire were related to the characterisation of the interviewee: Undergraduation period, age, sex and religion. The following two questions dealt with how the student saw the bioethics discipline: whether they considered it important or dispensable to the curriculum and how much time should be dedicated to this discipline in the curriculum.

The students were asked to follow news and updates of bioethics in the media in general in the third part of the questionnaire. At this stage, their knowledge about the CEM and the Medical Student Code of Ethics was also evaluated. Finally, the last questions demanded of the participants decisions regarding ethical conflicts, such as experiments with animals, use of the patient's image in scientific papers, medical propaganda, treatment of unaccompanied minors and medical confidentiality.

All questions were objective and only one answer could be checked off; However, there was room for discursive text if the students wanted to express themselves. Some of these comments will be mentioned later, kept in full the way they were written, without any identification of authorship. Several scientific articles related to the theme were analysed in order to support the discussion.

The data were collected from first year to fifth year undergraduate students, because Unioeste's medical course is new and at the time of the research there were not sixth year students yet. The classes of bioethics and medical ethics are offered in the first year, in a discipline called Integrative Medical Practice, which also encompasses medical psychology, scientific initiation and biostatistics.

Results and discussion

Of the 128 students, 14 attended the fifth year, 30 the fourth year, 23 the third, 22 the second and 39 the first. The sample comprises the total number of students present in the class in which the questionnaire was applied and who agreed to participate in the study. Females accounted for 64% of the total (82 students), and males 36% (46 students); 71 were catholics (55%), 13 atheists (10%), 9 evangelicals (8%), 8 spiritists (6%) and 27 marked "other" as their religious beliefs (21%).

When asked about the importance of the bioethics discipline in the course of medicine, 3 responded to consider it dispensable (2%), while 125 highlighted its importance (98%). Regarding the time that the discipline of bioethics should take, 4 reported that the ideal would be one semester (3%), 57 1 year (45%), 25 2 years (20%), 9 3 years (7%), 12 4 years (9%) and 20 6 years (16%). One of the candidates answered five years. As for the CEM, 8 read it entirely (6%), 60 had already read parts of it (47%) and 60 never read it (47%). As for the Medical Student Code of Ethics, 74 expressed knowing it (58%), while 54 did not know of its existence (42%); Among those who knew the Code, 13 read parts of it (18%) and one person read the entire document (1%).

Of the 128 students, only 4 reported accompanying news related to bioethics (3%). The students cited as sources of information the *Revista Bioética* (Bioethics Journal), which is published by the Conselho Federal de Medicina – Federal Council of Medicine (CFM), the Facebook pages of the Sociedade Brasileira de Bioética - SBB (Brazilian Society of Bioethics) and the Conselho Regional de Medicina do Paraná - Regional Council of Medicine of Paraná (CRM/PR). When asked about the use of animals in medical school, such as those used in the surgical technique, 20 stated that they did not agree (16%), 107 agreed (84%) and a student did not answer.

As for the use of images, 116 people (91%) answered that, with prior authorisation, photos of the patient may be disclosed in work or scientific

event, provided that the disclosure is indispensable. However, 104 people (81%) mistakenly chose the "yes" alternative, thinking it is possible, with prior authorisation, to use an image of the patient to disclose the technique, method or result of treatment – a procedure prohibited by the CFM Resolution 1.974/2011, with or without consent⁶.

On the permission to consult unaccompanied minors, 81 replied "yes" (63%) and 47 (37%) answered "no". Still in this same theme, 95 students (74%) have indicated that it is only possible to break the medical confidentiality for the parents/authorities in case of risk to the patient's life; 22 students (17%) consider that it is the physician's duty to disclose the diagnosis to parents regardless of the condition of the minor, 4 (3%) said that one cannot disclose it in any way and 7 (5%) did not respond.

The data presented here in part corroborate and diverge from other researches. In a study conducted with 331 medical students from the Universidade Federal da Bahia - Ufba (Federal University of Bahia)¹, for example, when questioned about what would be the most appropriate period for the study of bioethics, 28.7% responded "in the first semester", 21.4% "in all semesters" and only one student (0.3%) considered the discipline to be dispensable to training – four others responded that it should be optional.

Of the 101 professors interviewed in the mentioned survey¹, 86.2% have read the CEM in the last 10 years, at least parts of it, while 11.9% did not read the CEM. As for the students, 100% had already read at least part of the CEM, but only 48.6% read the aforementioned Code in its entirety. In the second part of the questionnaire, participants were asked to evaluate assertions on themes of the bioethical context as true or false. The most common error was to consider true the assertion that the CEM is punitive.

Another study conducted at the Faculdade de Medicina de São José do Rio Preto - Faculty of Medicine of São José do Rio Preto (Famerp)⁷ showed an increase of correct answers in questions about bioethics over the course years, despite many flaws in the teaching of the discipline, including during the medical internship, in which no increase was recorded in relation to previous knowledge. At the conclusion of the article, the authors pointed to the faculty curriculum, which limits the bioethics discipline to one year, as one of the probable reasons for the negative results.

A survey conducted at state universities in Paraná⁸ revealed that 77% of the students did not read the Medical Student Code of Ethics, and 63% did not read the CEM. Among these students, 97% considered

the discipline of bioethics important. Another article, based on an interview with 479 students from the medical School of Marília, found that there was no evolution, along the undergraduate course, of the knowledge about the CEM in relation to concepts such as responsibility and medical confidentiality⁹.

According to Siqueira¹⁰, several international surveys also reached similar results. A study conducted in the United States in 1940, with 64 medical students, demonstrated a decrease in the percentage of students who felt stimulated to become physicians by the altruistic feeling of helping others through their medicine course¹⁰. The author also refers to Robinson who, in England, came to the same conclusion; also informing that the American Association of Medical Schools indicates a significant number of medical students who underestimate the respect for patients, prevailing among future professionals the view of material gains and social success as essential values¹⁰.

Comparing all these data from the literature with those found in the present study, it is noted that few students read the whole CEM (only 6% of the sample), while 47% read it at least in part and other 47% did not read it. The number is similar to the study by Marchi and Hossne⁸ conducted in state faculties of Paraná, in which 63% of the students also did not read the code, but differs greatly from the research of Almeida and collaborators¹ in the Ufba, where 100% of the students read at least part of the document, and 48.6% read it altogether.

As for the Medical Student Code of Ethics, only one student claims to have read the entire text, while 42% of the students reported not knowing about its existence. In the study by Marchi and Hossne⁸, 23% of the students read the aforementioned code. Asked about the matter of bioethics in medical school, 2% of the Unioeste medical students considered it to be dispensable, a rate that rises to 3% in the study with the state faculties of Paraná⁸ and is only 0.3% in the Ufba¹.

The amount of correct answers according to the graduation period was measured in percentage relative to the number of students of each year who responded to the survey. The following results were obtained per year of the course (in questions 1 to 4, respectively): First year, 92%, 3%, 56% and 62%; Second year, 91%, 5%, 55% and 73%; Third year, 91%, 4%, 57% and 83%; Fourth year, 100%, 87%, 97% and 100%; and, finally, fifth year, 100%, 14%, 50% and 79%.

In general, progress or at least maintenance of knowledge over the years is noted. When considering

these data, it is worth highlighting that in the percentages related to the fifth year there is a small participation bias in the research because the internship activities are carried out in different cities, making it impossible to meet most students on the same day.

These numbers help to think about changes to improve the bioethical knowledge base of medical students. In addition to didactic measures and changes in the curriculum, it is also necessary to stimulate students to seek information on their own, in daily life, since only 4 of 128 students say they are updated in questions related to bioethics through social media and means of communication.

As mentioned, although the questions were objective, there was room for students to comment. In the question about animal use in medical school, for example, although most (83.6%) has agreed with such practice, many comments have been written to justify the answer "agree". It is noted the lack of knowledge of other means for this type of experiment, and the limited resources of the university as an argument:

"There are no synthetic reproductions that can satisfactorily simulate the human body or other animal's body";

"Equipment and devices are still very different from reality. (...) Although it is a complicated subject, it is the most effective method";

"With an addendum: I do not know other practices to obtain the same knowledge, but I would like to know so this procedure could be dispensed with";

"Sometimes, teaching exercises using animals help, but we should evaluate the animal's conditions and the damage that will be brought to it";

"I believe that there are still no other methods as effective/realistic as the use of animals in surgical techniques";

"I would not affirm that it is indispensable, but it is cheaper than technologies that are not yet part of the reality of public education";

"I do not agree with animal suffering, but I do not know of a solution that provides the same intuitive knowledge acquired using guinea pigs";

"Virtual reality technologies are very promising, but due to high costs they will still be something outside the reality of public universities for a long period."

Some students also expressed discomfort with this type of procedure, which has generated many debates both in academia and in society in general:

“Surgical technique classes do not train surgeons and submit animals to unnecessary cruel practices”;

“I agree, but I don’t like to use them”;

“Even though I am against the death and torture of animals, I see that it is currently the only means to do so. In addition, I hope that man will find other forms of study in order not to use a life for it”;

“Particularly I feel very sorry to use animals in classes, I would rather not use, but I think it would be very harmful academically if we were to use mannequins for classes”;

“In addition to the use of animals, this practice occurs without the presence of a veterinary physician, and without the assurance that the animal is not suffering”;

“Professors and students do not care if the animal is suffering, it seems that they consider animals to be inferior”;

“I disagree with the way the procedure is performed today. I believe it lacks a stricter oversight”;

“I think it’s necessary, but there should be a better preparation of both the professor and the technician at the time to anaesthetise the patients.”

The statements denote lack of knowledge within universities about alternative methods to the use of animals. In addition to the question of whether or not this use is ethically acceptable, the justifications of the students are worrying. The anthropocentric idea that it would compensate to mistreat or kill animals to save people is implicit in certain arguments. But is it possible to put lives on the scales and tell which ones weighs more? Would we have that right?

There is the idea of progress built on the pain and extermination of beings, which would be “compensated” by the healing of others, as if the statistics could measure the value of life. But it is such a corrosive concept for the dignity of both sufferers and experimenters that it is difficult to regard this situation as preferable to the said “non-evolution” of science. Is it always possible to minimise the pain and wouldn’t that be just the physician’s responsibility? Should we diminish the suffering only of people and not of all beings?

Among the alternatives is the use of cadavers of animals in surgical technique, which even brings benefits

to the student, giving him or her more time to do the procedure and, if necessary, redo it, thus facilitating the learning. Other medical schools, with means and structure to do so, use 3D programs and videos that assist in classes and avoid some tests on animals¹¹.

According to Guimarães¹² and considering economic and technical constraints, we can at least put into practice the three Rs proposed by Russel and Burch: reduction of the quantity of animals to the minimum required; refinement of the procedures with animals in research and classes, decreasing suffering; and replacement of animals, as far as possible.

Final considerations

The recurrent debate on the best way to teach ethics and/or bioethics stems from the growing concern of society in relying on technical and morally competent physicians¹³. It is essential to discuss ethics in medical education in this scenario of scientific advances, changes in education and in the very field of bioethics¹⁴.

The data collected in this study showed an increase in bioethics knowledge in the course of the medical undergraduation course of the Unioeste Francisco Beltrão. However, several failures can be identified, which leads to the conclusion that the teaching of ethics throughout the course should be improved.

Not limiting the discipline of bioethics to the first year, this way providing the teaching plan uniformly throughout the curriculum, would be a way to continue improving the students’ knowledge, especially at the beginning of practical classes when they begin to experience several clinical situations. Another important measure is to encourage students to improve their knowledge on their own, supplying possible gaps in the academic training that will affect their careers. Currently there are several sources of information about bioethics, including social media, often in a playful and easily accessible way.

The Medical school should, as far as possible, prepare students to exercise the profession by providing not only the necessary technical arsenal, but also the teaching of ethics and respect for life as well as the art of caring. This process should always be guided by the responsibility and collective construction of knowledge that give voice to different perspectives, as occurred in the elaboration of the Medical Student Code of Ethics¹⁵.

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Participation of the authors

The authors participated in an equitable way in the elaboration of the work.

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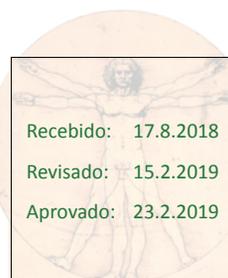
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Annex

Questionnaire

Part I

1. Which year of medical school are you attending?

- First year
- Second year
- Third year
- Fourth year
- Fifth year

2. Sex:

- Female
- Male

3. Age: _____

4. Do you belong to any Religion/Church?

- Catholic
- Evangelical
- Spiritist
- Jehovah's witness
- Umbanda
- None, I am an atheist
- Other. Which: _____

5. How do you rate the bioethics course in medical schools?

- Important
- Dispensable 16

6. How many years do you think the bioethics course should last in medical schools?

- One year
- Two years
- Three years
- Four years
- Five years
- Six years
- Other. Which: _____

7. Have you read the code of medical ethics?

- Yes, partly
- Yes, all of it
- No

8. Did you know there is a medical student code of ethics?

- Yes
- No

9. Have you read the medical student code of ethics (in any of its versions)?

- Yes, partly
- Yes, all of it
- No

10. Do you have, in any of your social networks, the Brazilian Society of Bioethics, CFM's Bioética Journal, Bioéticas, or some other bioethics news and update channel?

() Yes. Which: _____

() No 17

Part II

1. Do you agree to the use of animals in medical school class practices, such as those used in the surgical technique course?

() I agree, it is indispensable to acquire medical knowledge.

() I do not agree, there are other ways to get the same knowledge.

Any comments on the topic? _____ :

2. Is a physician allowed to disclose the image of a patient in scientific work or event when it is essential (CFM Resolution No. 1,974 / 2011)?

() yes, not requiring patient authorization because it is a scientific event/study.

() yes, provided there is prior authorization by the patient or his/her legal representative.

() No, even if having the patient's permission it is not allowed to disclose their image in a scientific event/study.

Any comment on the topic? _____

3. Is a physician allowed to disclose a patient's image to disseminate a treatment technique, method or outcome (CFM Resolution No. 1,974 / 2011)?

() Yes, even without patient authorization.

() Yes, provided they have the patient's prior authorization. 18

() No, not even with the patient's permission.

Any comment on the topic? _____

4. May an underage adolescent patient see a physician unaccompanied?

() Yes

() No

5. A capable underage adolescent patient seeks you for a consultation unaccompanied. You:

() Needs to tell parents diagnosis regardless of what it is

() Only need to communicate to parents/authorities if the teenager has told you something that puts his/her life at risk.

() Cannot tell parents/authorities what the teenager has or said even if it endangers his/her life as it is a breach of medical secrecy.