Bioethics and medical students: teaching method transition

Richaele de Sousa Teixeira [1], Rodrigo Lemos da Silva [2], Luigi Ferreira e Silva [3], Thaynnar Laryssa Kizan da Silva Miranda [4], Renan Kleber Costa Teixeira [5], José Antônio Cordero da Silva [6]

Abstract

Active methodologies has proven to be the best alternative for medical education. However, there no research, in the literature, comparing its use in teaching ethics and bioethics. Therefore, this study seeks to compare the knowledge of medical students from two different types of teaching (traditional and active) regarding the Code of Medical Ethics. The type of teaching methodology did not show impact on the degree of reading or knowledge of the Code of Medical Ethics, in addition both types of students believed to present the same degree of knowledge. However, students of the active methodology gave more importance to the bioethics and medical ethics discipline and presented greater knowledge on one of the questions concerning the standardization of the Code of Medical Ethics.

Keywords: Bioethics. Methodology. Students. Ethics, Medical.

Resumo

Bioética e discentes de medicina: transição do método de ensino

As metodologias ativas vêm se mostrando a melhor alternativa para o ensino médico. Ainda assim, não há na literatura pesquisas que comparem sua utilização no ensino da ética e bioética. Nessa perspectiva, este estudo busca relacionar o conhecimento de alunos de medicina de duas modalidades de ensino distintas (tradicional e ativa) sobre o Código de Ética Médica. O tipo de metodologia não se mostrou impactante no grau de leitura ou de conhecimento do Código de Ética Médica, e os estudantes acreditaram ter o mesmo grau de conhecimento. No entanto, os discentes da metodologia ativa deram mais importância à disciplina de bioética e ética médica e apresentaram maior conhecimento em uma das questões sobre a normatização do Código de Ética Médica.

Palavras-chave: Bioética. Metodologia. Estudantes. Ética médica.

Resumen

Bioética y estudiantes de medicina: transición del método de enseñanza

Las metodologías activas vienen mostrándose como la mejor alternativa para la formación médica. Sin embargo, no hay en la literatura investigaciones que comparen su utilización en la enseñanza de ética y bioética. En esta perspectiva, este estudio procura relacionar el conocimiento de estudiantes de medicina de dos modalidades de enseñanza distintas (tradicional y activa) sobre el Código de Ética Médica. El tipo de metodología no se mostró impactante en el grado de lectura o de conocimiento del Código de Ética Médica, y los estudiantes creyeron presentar el mismo grado de conocimiento. No obstante, los estudiantes de la metodología activa dieron mayor importancia a la asignatura de bioética y ética médica, y presentaron mayor conocimiento en una de las preguntas sobre la normativización del Código de Ética Médica.

Palabras clave: Bioética. Metodología. Estudiantes. Ética médica.

Aprovação CEP-Uepa 975.352

1. Graduada teixeira.richaele@gmail.com – Universidade do Estado do Pará (Uepa) **2. Graduando** rodrigosilva919394@gmail.com – Uepa **3. Mestrando** luigisilva1@gmail.com – Uepa **4. Graduada** thaynnarkizan@hotmail.com – Uepa **5. Mestre** renankleberc@hotmail.com – Uepa **6. Doutor** corderobel4@gmail.com – Uepa, Belém/PA, Brasil.

Correspondência
Richaele de Sousa Teixeira – Av. Almirante Barroso, 892, apt. 407, bloco A CEP 66093-020. Belém/PA, Brasil.

Declaram não haver conflito de interesse.

Research

The discussion about medical ethics and bioethics is very important for society as a whole. It needs to be emphasized during medical training to promote the deconstruction of stereotypes and the evaluation of patient vulnerability, in addition to the clear understanding of current standards.

These issues became more relevant during the 1970s [1], when medical schools adopted medical ethics or medical deontology) as a mandatory discipline. In 2003, a study [2] conducted at 103 medical courses in Brazil showed that the teaching of ethics was an integral part of the curriculum of all the schools analyzed. The teaching methodology applied to ethics and bioethics did not change much over the ten years following the research, except for the introduction of debates and simulations; the use of videos/films; and the discussion of clinical and theoretical experiences, which consisted of idealized and tested methodologies designed to facilitate their teaching.

The new National Curricular Guidelines for the Medical Graduation Course [3] recommend the inclusion of subjects related to bioethics and medical ethics for the generalist training of humanistic and reflexive character; and the development of the critical sense of students, focusing on their professional performance based on ethical and bioethical principles. In addition, these guidelines define the highest quality standards, considering that doctors are only held liable until a solution for the health condition investigated is provided.

Their last update [4] determines the use of active methodologies centered on students, so that they can have the autonomy to consolidate their knowledge and establish an ethical, humanistic approach throughout their medical career. Article 26 establishes the medical ethics and bioethics instructor as facilitator/mediator, responsible for providing integral training [4].

Based on the current curricular guidelines, the Pará State University (Uepa) is undergoing a transition phase between two different methodologies (traditional and active). This study analyzed the two teaching modalities by comparing the overall degree of knowledge on the Código de Ética Médica – CEM (Code of Medical Ethics).

Method

This study was carried out after approval granted by Comitê de Ética e Pesquisa da Uepa (Uepa's Ethics and Research Committee), in compliance with research regulations of the National Health Council [5] involving human beings. This study is characterized as a transversal, descriptive, observational and quantitative analysis and includes interviews with medical students from the Universidade do Estado do Pará (Pará State University), Belém Campus.

Data was collected between 2013 (traditional methodology) and 2014 (active methodology). Out of the total enrollment for both periods (2013 = 101 students, and 2014 = 105 students), 50 students were selected representing each methodology and divided into two groups: traditional methodology (TM) and active methodology (AM). This definition was based on a sample calculation considering a 5% alpha error and a 10% beta error, with a minimum of 38 students identified for the TM group, and 40 students for the AM group, considering that this value has changed to 50 to increase the statistical sensitivity and standardize the quantity per group.

The two groups had the same workload (50 hours: 4 hours a week for three months), and the same content: 1) History of bioethics; 2) Ethics and citizenship; 3) Autonomy, beneficence, non-maleficence and justice; 4) Medical confidentiality; 5) Human and animal research; 6) Termination of life; 7) Palliative care; 8) Transplantation of organs and tissues; 9) Early life and abortion; 10) Bioethics and the Unified Health System (Sistema Único de Saúde); 11) Miscellaneous.

Participants included medical students regularly enrolled in 2013 (traditional methodology) and 2014 (active methodology), who were already studying the discipline related to medical ethics and bioethics offered by the regular curriculum. Those who did not want to participate in the research, did not sign the consent form or left the research protocol incomplete were not included.

The interviews were based on a protocol designed by Almeida e colaboradores [6] (Annex 1), and divided into three parts: 1) identification; 2) perception of the teaching of medical ethics and bioethics; 3) knowledge assessment of the code of medical ethics. A 1 to 5 scale was used to evaluate the importance of the subject and self-assessment of the participants, being 1 considered of minimal importance or knowledge and 5, maximum importance or knowledge. BioEstat 5.3 software was used to conduct the statistical analysis; categorical variables were compared by using Contingency tests; and numerical variables were compared by using the Anova test. A *p*-value less than 0.05 was adopted to reject the null hypothesis.

 http://dx.doi.org/10.1590/1983-80422019271295

Results

The number of males evaluated in the TM group was 24 (48%), and 21 (42%) in the AM group. The average age was 20.92 ± 2.71 years old for the TM group and 19.94 ± 3.18 years old for the AM group. There was no significant statistical difference between genders and age (p>0.05). Regarding the most sought after specialties at the time of the research, 26 (52%) students within the TM group intend to pursue a clinical specialty; 12 (24%), a surgical specialty; and 12 (24%) have not decided yet. Within the AM group, 23 (45%) students intend to pursue a clinical specialty; 8 (16%), a surgical specialty; and 19 (38%) have not decided yet. There was no statistical difference between the groups (p=0.27) for this item. In terms of internships, 41 (82%) of the students in the TM group had already been enrolled in a internship program; while in the AM group, 23 (46%) students, a significant statistical difference (p=0.0002).

Of the total number of interviewees, 40 (40%) reported having read the Code of Medical Ethics; 22 (44%) of which representing the TM group and 18 (36%) representing the AM group, with no statistical difference (p=0.55). The average degree of importance given to the discipline of bioethics and medical ethics was 4.12 ± 0.93 within the TM group, and 4.46 ± 0.70 within the AM group, which demonstrate a statistical difference (p=0.04). Regarding the degree of knowledge about the subject, the average for the TM group was 2.94 ± 0.84, and 3.16 ± 0.61 for the AM, with no statistical difference (p=0.13). Thirty-eight (76%) students in the TM group and 42 (84%) in the MA group showed poor knowledge in regards to the Code of Medical Ethics, with no difference between the groups (p=0.45).

The average number of correct answers for the Code of Medical Ethics questionnaire (Table 1) was 5.72 ± 1.12 within the TM group and 5.72 ± 0.94, within the AM, with no statistical significance (p=0.99). In terms of comparing questions, only question 1 exposed a difference between the groups (p=0,01). The AM group scored higher as compared to the TM group. The other questions (p>0.05) presented no statistical difference.

Table 1. Group comparison for right answers per question

Questions answered by the students	Traditional Methodology		Active methodology		p
	n	%	n	%	
Question 1	37	74	46	92	0.0187
Question 2	32	64	25	50	0.1655
Question 3	26	54	23	46	0.5566
Question 4	46	92	50	100	0.1175
Question 5	22	44	24	48	0.6943
Question 6	39	78	41	82	0.8031
Question 7	33	66	37	74	0.3941
Question 8	50	100	50	100	1.0000

Discussion

There were no statistical differences between the groups regarding gender, age and specialty sought after. Possibly, the type of methodology the students had contact with was an influencing factor for the knowledge of the Code of Medical Ethics. The percentage of internship participation within the TM group was higher due to the availability of spare time (morning or afternoon). The AM group had the mornings and afternoons filled with pedagogical activities.

Internship participation is a common practice among medical students, helping them to apply the knowledge gained in the classroom and decide on which specialty to pursue. Without practical training throughout the undergraduate course, students are unable to reach clinical maturity, which is extremely important to establish an efficient and stable doctor-patient relationship [7].

According to Koga Júnior [8] *et al*, students consider practical activities essential for the teaching-learning process, making it easier to assimilate theoretical concepts. Practical extracurricular activities must be encouraged. However, professionals may pass bad ethical habits onto students, who may repeat them, even if they are fully aware they are prejudicial to the practice of medicine.

Most of the interviewees had not read the Code of Medical Ethics yet by the interview was conducted, regardless of the type of teaching methodology. The percentage found in this study corroborates with the results obtained by Marchi and Hossne [9]; and Shiraz [10] *et al*, according to which, respectively, only 37% of the students representing a particular medical school and 44% of the surgeons representing a particular medical service provider had already read the Code of Medical Ethics, either fully or partially. This also shows that few doctors will read the code of ethics after graduating from college if they are not motivated to do so during the course.

Both groups recognized the importance of the bioethics and medical ethics discipline, which corroborates with the findings of Almeida [6] *et al*. They obtained an average of 4.7 points among teachers, and 4.5 among students, on a 1 to 5 scale, being 5 the best evaluation. The AM group demonstrated a higher degree of appreciation of the discipline because of the use of new methodologies and by the 6-month period allocated for the teaching of the discipline. In the case of the TM group, that period was limited to 3 months. This proves that the transition from a traditional curriculum to a more inclusive program brings benefits to the ethical training of future professionals, who come to recognize the importance of the good principles required to build a more fulfilling and less iatrogenic professional career.

Aguiar [11] presents significant competences for a non-authoritarian professional practice, focusing on the new curricular guidelines, especially the ability to discuss and adjust treatments and interventions based on the care provided to patients. According to the author, resistance to the implementation of new guidelines is still predominant, considering the fact that it is often difficult to embrace a novelty that imposes disturbing demands to the "comfort zone" of those directly involved. However, government authorities are committed to honor them by respecting the singularities of each medical school and making better use of the resources already established [11].

The results of this study emphasize the positive value of the changes made to the teaching methodology implemented at Uepa. As emphasized by D›Ávila [12], medical schools that intend to offer quality ethical-humanistic training to future professional must implement interdisciplinary programs. Thus, the program must focus not only on theoretical classes and the intellectual capacity, but also on real and simulated clinical cases, at the bedside or at round tables, including professionals from different areas. These activities stimulate learning, critical reflection, and the moral development of students.

The AM group demonstrated a higher degree of appreciation of the bioethics and medical ethics discipline. However, there was no significant difference between the groups regarding the discipline itself. Even though students declared they understood the importance of the discipline, they did not agree they knew the subject sufficiently.

A study conducted by Almeida 6 et al. including a methodology similar to the one applied to this study obtained similar results. In addition, insecurity in the face of career challenges [13] – competitiveness, labor market, life risk, contact with death, external demands on technological knowledge – usually represents a barrier faced by students entering higher education. This set of factors may partly explain the discrepancy found. Despite the relevance attributed to bioethics and medical ethics, many situations generate doubts as far as the best approach to be taken. Moreover, only experience can help students to develop full mastery of certain ethical issues.

It was found that 80% of the students witnessed teachers engaging in unethical behavior, with no statistical difference between the groups. This is worrisome as it reveals that teachers themselves are not putting their teachings into practice. The medical professor commits him/herself to at least two systems of ethical values: the doctor-patient relationship, and the teacher-student relationship, applying medical and pedagogical values based on technical and relational conduct.

Medical and pedagogical ethics can be considered as particular projections and practical applications of general ethics [14]. This dichotomy between teaching and practice could be a contemporary version of Robert Louis Stevenson's *The Doctor and the Monster* [15], considering that teaching ethics and not applying it towards everyday patients may appear to be something truly monstrous. Therefore, these findings demonstrate the need to analyze teacher commitment to the teachings of medical ethics and the promotion of knowledge on the Code of Medical Ethics [16].

As far as the answers given to questions related to the Code of Medical Ethics, similar statistical values were found in both groups. Regardless of the teaching methodology, there was no improvement of student knowledge. New studies are required in order to compare active methodologies and the

 http://dx.doi.org/10.1590/1983-80422019271295

traditional method. Studies must be conducted to compare both methodologies at the end of the course, or compare doctors graduated from schools that adopt different teaching methods.

Regarding the questions related to the knowledge on the Code of Medical Ethics, it was verified that only question 1 presented statistical difference between the two groups. This data reveals the advance brought by the change from the traditional pedagogical plan to a more inclusive method, which allows students to acquire more knowledge on ethical and bioethical principles while developing the capacity to promote and maintain good professional conduct.

In addition, the poor theoretical knowledge of students on ethics does not necessarily mean total absence of knowledge on the subject. It simply reinforces the need for theoretical subsidies for medical professionals and students [17]. This study reveals that the deficiency of knowledge in the field of ethics and clinical bioethics is a problem that affects both students and professionals, which reflects lack of interest and disregard of those involved.

Final considerations

The change in the medical school curriculum focus on the ethical-humanistic growth of future professionals by implementing ethical development programs with less emphasis on theoretical classes and intellectual capacity (reasoning, memory), and more attention to real and simulated clinical cases, at bedside or at round tables, including professionals from different areas. The idea is to stimulate not only learning but also critical reflection, improving the character and moral development of each and every student.

The type of teaching methodology (active or traditional) did not influence the reading or the knowledge of the Code of Medical Ethics, and the two groups of students believed to possess the same degree of understanding of the subject. There were statistical differences regarding the correctness of one of the questions proposed and the importance given to the bioethics and medical ethics discipline. Further research is required to better evaluate the impact of active methodologies on the teaching, practice and knowledge of bioethics and medical ethics.

Referências

1. D'Avila RL. É possível ensinar ética médica em um curso formal curricular? Bioética [Internet]. 2002 [acesso 29 jul 2014];10(1):115-26. Disponível: https://bit.ly/2PRKglt
2. Munõz D, Munõz DR. O ensino da ética nas faculdades de medicina do Brasil. Rev Bras Educ Med [Internet]. 2003 [acesso 29 jul 2014];27(2):114-24. Disponível: https://bit.ly/2L1T0zs
3. Conselho Nacional de Educação, Câmara de Educação Superior. Resolução CNE/CES nº 4, de 7 de novembro de 2001. Institui Diretrizes Curriculares Nacionais do curso de graduação em medicina [Internet]. Diário Oficial da União. Brasília, p. 38, 9 nov 2001 [acesso 29 jul 2014]. Seção 1. Disponível: https://bit.ly/1Oz2lIE
4. Conselho Nacional de Educação, Câmara de Educação Superior. Resolução CNE/CES nº 3, de 20 de junho de 2014. Institui Diretrizes Curriculares Nacionais do curso de graduação em medicina e dá outras providências [Internet]. Diário Oficial da União. Brasília, p. 8-11, 23 jun 2014 [acesso 29 jul 2014]. Disponível: https://bit.ly/2k7LtEn
5. Conselho Nacional de Saúde. Resolução CNS nº 466, de 12 de dezembro de 2012. Aprova diretrizes e normas regulamentadoras de pesquisas envolvendo seres humanos [Internet]. Diário Oficial da União. Brasília, nº 12, p. 59, 13 jun 2013 [acesso 3 mar 2018]. Seção 1. Disponível: https://bit.ly/2KeJPu8
6. Almeida AM, Bitencourt AGV, Neves NMBC, Neves FBCS, Lordelo MR, Lemos KM *et al*. Conhecimento e interesse em ética médica e bioética na graduação médica. Rev Bras Educ Méd [Internet]. 2008 [acesso 20 mar 2015];32(4):437-44. Disponível: https://bit.ly/2DVs7ga
7. Stock FS, Sisson MC, Grosseman S. Percepção de estudantes de medicina sobre aprendizagem da relação médico-paciente após mudança curricular. Rev Bras Educ Méd [Internet]. 2012 [acesso 27 mar 2015];36(1):5-13. Disponível: https://bit.ly/2P1IAkb
8. Koga Júnior M, Sena I, Lopes B, Belfor J, Silva D, Santos B. Percepções de estudantes de medicina sobre competências pedagógicas no contexto da aprendizagem baseada em problemas de universidade da Amazônia brasileira [Internet]. In: Atas do V Congresso Ibero-Americano em Investigação Qualitativa; 2016; Porto. Porto: CIAIQ; 2016 [acesso 15 out 2017]. Disponível: https://bit.ly/2P1BrjF
9. Marchi NMGC, Hossne WS. Reflexões bioéticas: o que pensam estudantes de medicina sobre o início e final da vida. Bioethikos [Internet]. 2012 [acesso 29 jul 2014];6(3):271-86. Disponível: https://bit.ly/2PVdikj
10. Shiraz B, Shamim MS, Shamim MS, Ahmed A. Medical ethics in surgical wards: knowledge, attitude and practice of surgical team members in Karachi. Indian J Med Ethics [Internet]. 2005 [acesso 7 ago 2014];2(3):94-6. Disponível: https://bit.ly/2FAaunM
11. Aguiar AC. Implementando as novas diretrizes curriculares para a educação médica: o que nos ensina o caso de Harvard? Interface Comun Saúde Educ [Internet]. 2001 [acesso 17 jun 2015];5(8):161-6. Disponível: https://bit.ly/2BuefqK

Research

12. D'Avila RL. A ética médica e a bioética como requisitos do ser moral: ensinando habilidades humanitárias em medicina. Rev. bioét. (Impr.) [Internet]. 2010 [acesso 5 ago 2015];18(2):311-27. Disponível: https://bit.ly/2wOnfHd
13. Trindade LMDF, Vieira MJ. O aluno de medicina e estratégias de enfrentamento no atendimento ao paciente. Rev Bras Educ Méd [Internet]. 2013 [acesso 4 abr 2016];37(2):167-77. Disponível: https://bit.ly/2KBjZ5f
14. Sá Junior LSMS. Ética do professor de medicina. Bioética [Internet]. 2002 [acesso 25 nov 2018];10(1):49-84. Disponível: https://bit.ly/2R9t5Z9
15. Stevenson RL. O médico e o monstro. São Paulo: Landmaek; 2008.
16. Ferreira LC, Mourão RA, Almeida RJ. Perspectivas de docentes de medicina a respeito da ética médica. Rev. bioét. (Impr.) [Internet]. 2016 [acesso 6 out 2017];24(1):118-27. Disponível: https://bit.ly/2FGHpHz
17. Seif-Farshad M, Bazmi S, Amiri F, Fattahi F, Kiani M. Knowledge of medical professionalism in medical students and physicians at Shahid Beheshti University of Medical Sciences and affiliated hospitals, Iran. Medicine [Internet]. 2016 [acesso 15 out 2017];95(45):e5380. Disponível: https://bit.ly/2DJ98EU

Participation of the authors
The elaboration, grammatical correction and revision of this article counted on the participation of all the authors.

Richaele de Sousa Teixeira
0000-0002-5327-6073
Rodrigo Lemos da Silva
0000-0001-6731-18
Luigi Ferreira e Silva
0000-0001-9974-310
Thaynnar Laryssa Kizan da Silva Miranda
0000-0002-1555-2401
Renan Kleber Costa Teixeira
0000-0002-5079-297X
José Antônio Cordero da Silva
0000-0002-4403-5665

Recebido: 10.11.2017
Revisado: 12. 9.2018
Aprovado: 18. 9.2018

Research

 http://dx.doi.org/10.1590/1983-80422019271295

Annex

Research protocol

1. Identification

   a) Age: _____ b) Gender: _____ c) Which specialty do you wish to pursue?_____

   d) Have you participated in an internship program, either as a trainee or supervised by a doctor? Yes ( ) No ( )

2. Perception on the teaching of medical ethics and bioethics

   a) Have you read the Code of Medical Ethics? Yes ( ) No ( )

   b) What is the importance of the medical deontology discipline in relation to the other disciplines included in the medical curriculum? Please assign a value from 1 to 5. A:_____

   c) What is your general knowledge on medical ethics? Please assign a value from 1 to 5. A:_____

   d) Have you ever witnessed any improper conduct that could violate the precepts of the Code of Medical Ethics by a medicine professor? Yes ( ) No ( )

3. Knowledge of the Code of Medical Ethics

   a) Does the Code of Medial Ethics normalize the relationship among physicians and other health professionals? Yes ( ) No ( )

   b) Are doctors, nurses and other health professionals required to comply with the Code of Medial Ethics? Yes ( ) No ( )

   c) Can the Code of Medical Ethics be used as a punitive measure? Yes ( ) No ( )

   d) Does the Code of Medical Ethics deal directly with professional secrecy? Yes ( ) No ( )

   e) Does the Code of Medical Ethics deal directly with doctors strike? Yes ( ) No ( )

   f) Does the Code of Medical Ethics deal directly with Aids? Yes ( ) No ( )

   g) Does the Code of Medical Ethics oppose against the cloning of human beings? Yes ( ) No ( )

   h) Do physicians violate the Code of Medical Ethics when writing prescriptions illegibly? Yes ( ) No ( )