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RESEARCH

Assessment of medical students' knowledge about medical confidentiality

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Abstract

Medical confidentiality is one of the basic principles of medicine, and it is expected that the professional in the field will always protect what is reported or discovered. This study aims to evaluate the knowledge of medical students at a private university in Salvador, Bahia, Brazil, about confidentiality in the doctor-patient relationship. This is a cross-sectional, descriptive and observational study carried out between August and November 2017 with 305 medical students from the first to the eleventh semester, through a structured questionnaire with problem situations on professional secrecy, based on the Code of Medical Ethics, Chapter IX. A sufficient and insufficient degree of knowledge was randomly established for students. Most of the students showed sufficient knowledge, and the eleventh semester obtained more correct answers in the problem cases proposed in the questionnaire. Therefore, it is necessary to continuously deepen the study of the theme in a transversal way, due to its importance in the doctor-patient relationship.

Keywords: Confidentiality. Ethics, professional. Codes of ethics. Hippocratic oath. Education, medical. Students, medical.

Resumo**Avaliação do conhecimento de estudantes de medicina sobre sigilo médico**

O sigilo médico é um dos princípios basilares da medicina, e espera-se que o profissional da área sempre resguarde o que lhe é relatado ou descoberto. Este estudo objetiva avaliar o conhecimento dos estudantes de medicina de uma universidade privada de Salvador/BA sobre o sigilo na relação médico-paciente. Trata-se de estudo transversal, descritivo e observacional realizado entre agosto e novembro de 2017 com 305 alunos de medicina do primeiro ao décimo primeiro semestre, por meio de questionário estruturado com situações-problema sobre sigilo profissional, com base no Código de Ética Médica, Capítulo IX. Foi estabelecido aleatoriamente um grau de conhecimento suficiente e insuficiente para os estudantes. A maioria deles mostrou conhecimento suficiente, e o décimo primeiro semestre obteve mais acertos nos casos-problema propostos no questionário. Portanto, torna-se necessário aprofundar continuamente o estudo da temática de forma transversal, devido a sua importância na relação médico-paciente.

Palavras-chave: Confidencialidade. Ética profissional. Códigos de ética. Juramento hipocrático. Educação médica. Estudantes de medicina.

Resumen**Evaluación del conocimiento de medicina acerca de la confidencialidad médica**

La confidencialidad médica es uno de los principios basilares de la medicina, y se espera que el profesional de esta área siempre resguarde lo que se le relata y lo que descubre. Este estudio tiene como objetivo evaluar el conocimiento de los estudiantes de medicina de una universidad privada en Salvador, Bahía, Brasil, acerca de la confidencialidad en la relación médico-paciente. Se trata de un estudio transversal, descriptivo y observacional realizado entre agosto y noviembre del 2017 con 305 estudiantes de medicina del primero al undécimo semestres, por medio de un cuestionario estructurado con situaciones problema sobre secreto profesional, basado en el Código de Ética Médica, Capítulo IX. Se estableció aleatoriamente un grado de conocimiento suficiente e insuficiente para los estudiantes. La mayoría de los estudiantes demostró conocimiento suficiente, y el undécimo semestre obtuvo más éxito en los casos problema propuestos en el cuestionario. Por lo tanto, se hace necesario profundizar continuamente el estudio del tema de manera transversal, debido a su importancia en la relación médico-paciente.

Palabras clave: Confidencialidad. Ética profesional. Códigos de ética. Juramento hipocrático. Educación médica. Estudiantes de medicina.

Approval CEP-Unifacs 2.125.574

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Ensuring the privacy and confidentiality of medical data is essential to the practice of clinical medicine¹. Physicians must safeguard information reported to him by the patient and/or family members or obtained during clinical follow-up (through anamnesis, physical examination, complementary exams or otherwise identified by the doctor, even when the patient does not want to share it), in order to guarantee a healthy doctor-patient relationship, in which the doctor is considered the faithful depositary of information.

Medical confidentiality is one of the basic principles in medicine since the Hippocratic Oath, one of the most important guidelines for ethical and moral conduct in the medical profession²⁻⁴. It is provided for in several documents regulating medical conduct, especially in the Brazilian Medical Ethics Code (MEC)⁵, which was recently updated on issues such as technological, communication and social innovations without major changes in Chapter IX, regarding professional confidentiality⁶. It is also stipulated for in Brazil's Federal Constitution⁷, Penal Code⁸, Criminal Procedure Code⁹, Civil Procedure Code¹⁰ and Child and Adolescent Statute (ECA)¹¹.

Doctors have the legal and ethical duty to ensure confidentiality in any situation and, according to MEC's article 73 of Chapter IX, it is forbidden to *reveal facts known due to the practice of the profession, except for a just reason, legal obligation or with the patient's written consent*¹², a recommendation maintained in the updated code⁶. Failure to comply with these rules subject practitioners to administrative and legal sanctions imposed by the Regional Council of Medicine and stipulated for in the Civil and/or Criminal Code.

Knowledge of MEC and of the country's legislation guiding doctors' commitment to ethics, moral values and the humanistic practice of medicine should start during undergraduate studies, when students first experience various situations specific to the profession¹³⁻¹⁵. Medical schools should offer training based on medical ethics precepts in undergraduate courses in order to address the debates and general perceptions on the subject. In addition, since the MEC does not apply to medical students, it is important their being subject to a unified code of ethics¹⁶, which can facilitate ethical decision-making during undergraduate studies¹⁷.

Considering the importance of professional confidentiality, this study aims to assess the knowledge of medical students at a private university in Salvador, Bahia, Brazil, on this issue in the doctor-patient relationship. Thus, identifying the level

of knowledge on the topic can improve teaching and make academic performance and professional practice more ethical and humanistic.

Method

This paper presents a cross-sectional, descriptive and observational study carried out at Universidade Salvador (Unifacs) between August and November 2017. The sample was non-probabilistic and randomized by semester, distributed in eight classes totaling 384 students. The survey involved 305 medical students in their first to sixth year, out of 922 regularly enrolled students. Third, fifth, ninth and twelfth semester students did not participate in the study because they did not attend classes during data collection. Exclusion criteria were refusal to sign the free and informed consent form (ICF), handing over an unanswered questionnaire and not being present in the classroom at the time of instrument administration.

The questionnaire asked about sociodemographic information (age, sex and semester); whether students had already read the MEC and the Hippocratic Oath; and whether they had already taken the discipline Ethics and Professionalism. Additionally, ten problem cases were presented to students describing everyday situations related to professional confidentiality for them to answer yes-no questions, according to the norms of MEC's Chapter IX, according to the Resolution 1,931 of the Federal Council of Medicine (FCM)⁵.

Students were invited in class to participate in the survey. After the researchers explained the purpose of the study, the ICF was handed to the students, read, signed and returned. Then, the students received the questionnaire, which was answered anonymously and deposited in specific boxes to avoid identification.

To analyze the data, the questionnaires were separated by respondents' semester, and problem case 3 was disregarded because of ambiguousness in interpretation. No questionnaire was excluded from analysis. The students' level of knowledge was classified as "insufficient" or "sufficient", in which case 70% of the nine valid questions in the questionnaire (six or more questions) were correct, according to random standardization.

The data were tabulated and analyzed statistically using the Statistical Package for Social Science (SPSS) version 22.0 and R Project 3.4.1 "Single Candie" programs, and the graphs were generated

in Microsoft Excel 2013. Qualitative variables are presented in absolute values and proportions, and the numerical variable in mean value and standard deviation. Mann-Whitney, Kruskal-Wallis and Nemenyi non-parametric tests were used to compare qualitative variables, according to the median of correct answers within the group that showed sufficient knowledge. A 95% confidence interval was used and p -values of less than or equal to 0.05 for assessing statistical significance. The study was approved by the Unifacs Research Ethics Committee and complied with the ethical precepts of the Resolution 466/2012 of the National Health Council¹⁸, which guides research with human beings.

Results

As shown in Table 1, 197 (64.6%) of the respondents were female. Participants' age ranged from 17 to 36 years, with an average of 22.8 years and standard deviation of 3.7 years, and the 17-20 age group was the larger. Seventh-semester students – 46 participants (15.1%) – formed the larger semester group and eighth-semester students the smaller one – 25 participants (8.2%). Regarding students' familiarity with guidelines on medical ethics and professional confidentiality, 157 (51.5%) reported having read the MEC, 229 (75.1%) the Hippocratic Oath and 189 (62%) had already attended the discipline Ethics and Professionalism, offered in the fifth semester of the course.

Of the students who attended the class Ethics and Professionalism, 119 (63%) and 140 (74%) had read the MEC and the Hippocratic Oath, respectively. Among those who did not, 38 (32.8%) and 89 (76.7%) had read these documents, respectively. Analysis of students' knowledge of medical confidentiality, based on the responses to the problem cases, showed that 154 (50.5%) had a sufficient level of knowledge and 151 (49.5%) had insufficient knowledge.

Among the students who had a sufficient level of knowledge, 82 (52.2%) had read the MEC and 71 (48.3%) did not; 119 (52%) had read the Hippocratic Oath and 33 (44.6%) did not; and 103 (54.5%) attended the class Ethics and Professionalism, while 51 (44%) had not yet studied the subject.

Most participants with insufficient knowledge said they had not read the documents or taken the course. The Mann-Whitney test showed no statistically significant difference between the level of knowledge of the students who had read both the MEC ($p=0.652$) and the Hippocratic Oath

($p=0.443$) and also attended the class Ethics and Professionalism ($p=0.079$) compared with those who had not read or taken the course.

Table 1. Sample characteristics (n=305)

Variables	n
Age group (years)	
17-20	87 (28.5)
21-22	70 (23)
23-24	73 (24)
25-36	75 (24.5)
Did not answer the question	2 (0.7)
Gender (%)	
Female	197 (64.6)
Male	106 (34.8)
Did not answer the question	2 (0.6)
Semester (%)	
1st	34 (11.1)
2nd	44 (14.4)
4th	38 (12.5)
6th	35 (11.5)
7th	46 (15.1)
8th	25 (8.2)
10th	41 (13.4)
11th	42 (13.8)
Have read the Medical Ethics Code (%)	
Yes	157 (51.5)
No	147 (48.2)
Did not answer the question	1 (0.3)
Have read the Hippocratic Oath (%)	
Yes	229 (75)
No	74 (24.3)
Did not answer the question	2 (0.7)
Have taken Ethics and Professionalism (%)	
Yes	189 (62.0)
No	116 (38.0)

The rate of students showing sufficient knowledge varied among semesters, being higher in the eleventh (73.8%) and lower in the seventh (17.4%). As for insufficient knowledge, it predominated in the first to eighth semesters, with small variations, declining in the tenth and eleventh semesters, as shown in Graph 1.

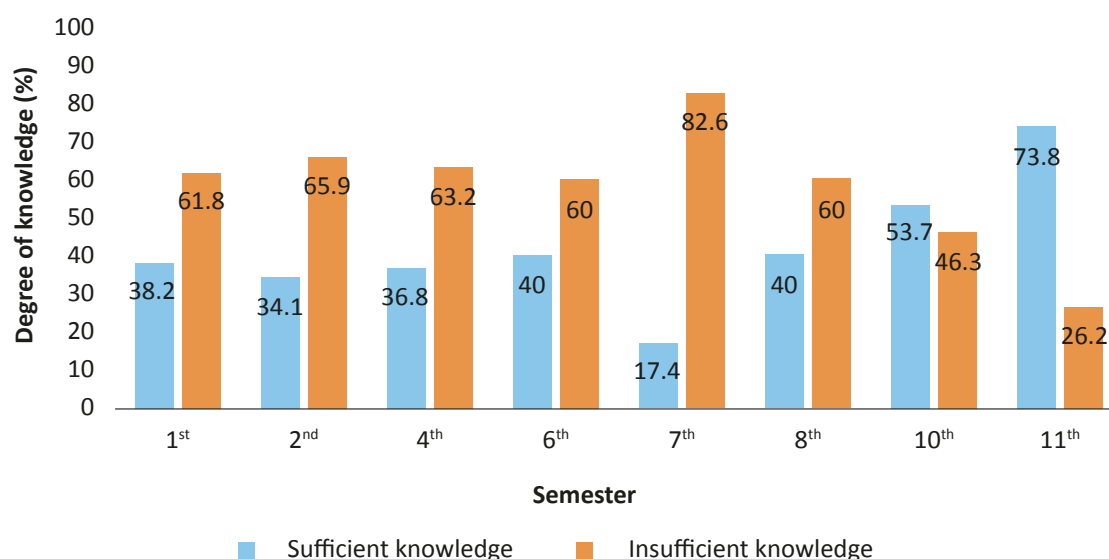
A comparison of the different rates of sufficient knowledge between semesters using the Kruskal-Wallis test found a value of $p=0.02$, proving that there are one or more semesters whose students differ significantly from the others in this respect. The semesters were also pairwise compared using the Nemenyi test, which showed a p of less than 0.05, revealing statistical significance only in the

comparisons between the eleventh semester and three others: the first ($p=0.046$), the second ($p=0.0196$) and the seventh ($p=0.0052$).

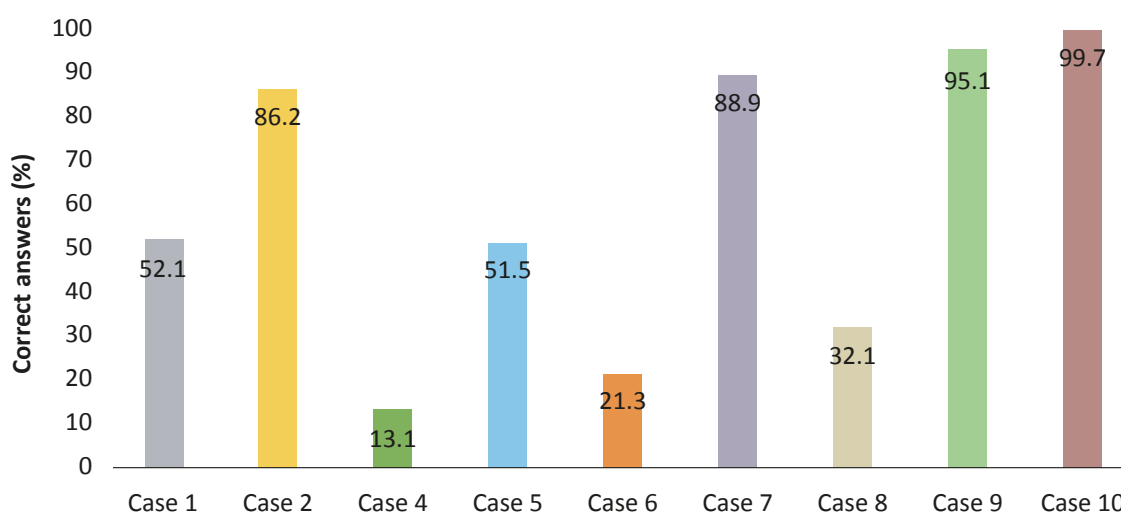
As for the problem cases, Graph 2 shows that case 10 – referring to a student who posts a photo of the patient's records on social networks – was

the one with the most correct answers, 304 (99.7%) students. On the other hand, case 4 – about a doctor who participates in a congress and exposes a clinical case with details that could identify the patient, even with prior authorization – was answered incorrectly by 264 (86.6%) students.

Graph 1. Distribution of the degree of knowledge of medical students, by semester



Graph 2. Percentage of correct answers to problem cases



Discussion

The analysis of the data shows a majority of young and female students, a result compatible with the current reality of medical courses, that is, the prevalence of young people and women in the medical profession observed in the last years¹⁹⁻²¹.

The significant number of students who had not read the MEC may result from factors such as a lack of adequate understanding of medical ethics in medical schools, inadequacy of the curriculum structure, greater student interest in exact and biological sciences, as well as the fact that students are not subject to this code (which only

applies after graduation)^{22,23}. Therefore, it is worth reinforcing the importance of implementing the Medical Student Ethics Code (MSEC) in all medical schools to increase interest in ethics, in addition to encouraging the exercise of citizenship and the humanization of the profession²⁴.

Students should understand that even in medical school they must obey certain rules established by the MEC, as they are under the tutelage of a medical supervisor and can be held responsible for a breach of confidentiality, being subject to moral, legal and administrative sanctions^{25,26}.

Having read the MEC and the Hippocratic Oath and having studied Ethics and Professionalism favored the acquisition of a sufficient knowledge of confidentiality. However, the lack of statistical significance when comparing these variables to the rate of correct answers may indicate that knowledge of the topic is also related to experiences, previous values and other readings on the subject in medical school. In addition, it should be considered that the oath is addressed in the first semesters at the researched university, and that medical confidentiality can be emphasized at any time throughout the course^{27,28}.

The teaching of ethical principles helps students and future professionals to analyze and solve ethical dilemmas in their undergraduate and professional lives when dealing with different situations, patients, colleagues and society in general. In addition, students also tend to replicate the practices of teachers, in relation to techniques and ethics^{22,29}.

Most students who had studied Ethics and Professionalism stated they had read the MEC and the Hippocratic Oath, which demonstrates their concern for ethical principles since the beginning of medical studies. According to Menezes and collaborators¹⁷, classes that address topics related to medical ethics can encourage the relationship between professionals, patients and family members to be more respectful and the protection of confidentiality, which are essential to health care. It is also very important for learning that medical schools and medical councils promote courses and debates on the subject.

In our study, the sufficient level of knowledge demonstrated by students may also be related to discussions on medical ethics in classes since the first semester at the researched university. This result contrasts with the study by Figueira and collaborators³⁰, in which questions related to medical confidentiality posed to students had a lower rate of correct answers.

The small difference between the rates of sufficient and insufficient knowledge may be explained by the students' lack of interest in the topic or of experience in situations involving confidentiality. Another hypothesis would be an inadequate approach during discussions in the classroom. Some authors^{31,32} also point to the fact that utilitarian disciplines arouse more fascination than humanistic disciplines among medical students, because they may enhance future medical practice and increase medical fees. For this reason, a transversal approach to medical ethics using creativity, dialogue and critical reflection throughout the medical course can develop in students an ethical and humanistic character³³⁻³⁵.

The rate of insufficient knowledge found is expected in the initial semesters of the course, since by then students would have had no contact with the specific discipline and little experience with patients. However, seventh- and eighth-semester students could have done better in the questionnaires, as they had already taken the discipline Ethics and Professionalism and engaged in more hands-on activities. In addition, eighth-semester students are about to begin internship, which presupposes a greater repertoire on ethics and discernment in decision-making³⁶.

The variation in statistical results between the eleventh and the first semester and between the second and the seventh suggests that, as students advance in the course, they gain in maturity and increase their interest in confidentiality issues, or that there is a significant impact of the curriculum and personal values change during training in medical school³⁷. Because of internship practice, eleventh-semester students probably are more educated in medical confidentiality, since they already have had more contact with patients and ethical situations³⁸, especially in the hospital environment.

As for the problem cases, we will discuss next the three that drew more incorrect answers, in order to highlight the aspects to be improved: presentation of a clinical case in a congress, with identifiable details of the clinical history, photos and prior authorization of the patient (case 4); insertion of the International Classification of Diseases (ICD) codes in forms requesting medical exams for patients with private health insurance (case 6); and disclosure by the assistant physician of medical records of the deceased patient to family members requesting information about the relative (case 8).

Incorrect answers in case 4 may be linked to students' desire to learn from real situations and to exemplify daily clinical practice. In addition, because students are used to the exposure of clinical cases in

social networks, they may consider this disclosure in a scientific congress acceptable, without exceptions³⁹.

Article 75 of the MEC does not allow doctors to *refer to identifiable clinical cases, to expose patients or their image in professional advertisements or in the disclosure of medical matters to the media in general, even with the patient's authorization*¹². The updated MEC reinforced this provision by adding that it is forbidden to display images that make patients recognizable⁶.

Even with the person's consent, this prohibition aims to maintain individual dignity and avoid treating a patient as a mere illustrative figure, without regard to the physical and emotional condition caused by the disease. It should be noted that disrespecting this confidentiality rule tends to increase the number of lawsuits against doctors^{40,41}.

The number of incorrect answers in case 6 may be related to the lack of theoretical and practical teaching about the use of ICD codes in medical test forms. Another hypothesis is that students may have already received forms with ICD codes specified and supposed it was the correct practice. Although health insurance plans hire doctors as medical auditors to control and evaluate the medical resources and procedures adopted, in order to improve the quality of the services provided, the insertion of ICD codes in forms goes against medical ethics principles, even with the justification of preventing fraud, as the data is usually viewed by people other than doctors⁴¹⁻⁴⁴. The matter has been discussed in court^{43,45} and both doctors and students must be updated on the legal issues involved.

Even with FCM Resolutions 1,642/2002⁴⁶ and 1,819/2007⁴⁷ addressing specifically the issue and MEC's article 73 backing doctors who have respected medical confidentiality in their practice^{5,6}, there are still many controversies and doubts about the use of ICD codes in medical care, consultations and forms, mainly involving health insurers⁴⁸, which may hinder students' understanding and the transmission of content.

The large number of incorrect answers in case 8 may be due to students considering that the deceased patient's right to privacy would be violated if close relatives were given access to medical records. These results thus suggest a probable lack of adequate guidance on professional confidentiality.

In this case, MEC's article 73^{5,6} and FCM Recommendation 3/2014, which recommends to *disclose, when requested by the surviving spouse/companion of the deceased patient, and successively*

*by the legitimate heirs of the patient in a straight line, or collateral relatives up to the fourth degree, the medical records of the deceased patient*⁴⁹. MEC's article 88, which refers to medical documents, was altered in the updated code to allow patients' access to their medical records or, in their absence, their legal representative's access⁶.

It is also worth discussing a common situation of breach of confidentiality not addressed in the cases proposed in our study: when the doctor informs the patient's family members about the diagnosis, prognosis and treatment of the disease, even before communicating it to the patient. This usually involves the elderly, even if they are lucid, and patients with oncological diseases⁵⁰. Some authors^{51,52} emphasize that this attitude represents a paternalistic view of the doctor-patient relationship, that is, it is assumed that patients' suffering will increase if they know about their medical situation and, therefore, it would be easier for other people to make decisions on their behalf. This ethical conflict disregards articles 73, 85 and 88 of the MEC^{5,6}.

Information about the diagnosis should be first given to patients, unless they ask otherwise, in view of the individuals' right to dignity, self-determination and confidentiality of the information. With patients' consent, the companions will be informed, and this fact should be registered in the medical records. In case of incapacity, it is up to the legal guardian to make decisions or authorize the granting of information to other people^{41,50,53,54}. Treatment should be discussed according to the "degree of truth" that the patient can bear, taking into account psychological and socio-cultural characteristics, the stage of the disease and whether there is family support^{51,53,55}.

The confidentiality of the data favors the patient and, at the same time, the interests of family members, doctors and society⁵⁶. According to Brouardel, *the obligation of secrecy is not optional, it is absolute*⁵⁷, and it is essential that professionals respect what is revealed to them or discovered during contact with patients.

The lack of respect for the patient's autonomy and privacy is still the subject of many lawsuits. According to the Regional Council of Medicine of the State of São Paulo⁵⁸, between 2012 and 2016, 379 ethical disciplinary cases were filed due to breach of confidentiality in the state, but none has led to revocation of medical licenses. For this reason, it is also up to professional associations and medical schools to guide adequately undergraduate students about the duty to ensure patients' privacy under any circumstances.

Final considerations

Our study showed that young female students were more likely to have sufficient knowledge about medical confidentiality than other groups of participants - however, the difference was small between the two groups. Most students with sufficient knowledge had read the MEC and the Hippocratic Oath and had attended the discipline Ethics and Professionalism. However, the lack of a statistically significant relationship between these variables reveals that experiences, student values and other readings on medical ethics and/or professional confidentiality during undergraduate studies also influenced this result.

Data comparison between the eleventh and the first semesters and between the second and the seventh semesters show that most advanced

students have a superior understanding of the subject due to aspects such as having had more contact with patients and ethical situations, especially in internship activities. The variation in the rate of correct responses to problem cases shows that students do not have adequate knowledge about confidentiality.

We suggest that medical training should continuously seek to deepen the understanding of the topic using a transversal and dynamic approach, as it is an essential foundation of the doctor-patient relationship. It is necessary to promote a collective reflection on issues such as confidentiality in medical schools, in order to train doctors that are more ethical in their practice. In addition, the reading of the MEC and the Hippocratic Oath, which are important documents to guide students regarding the principles of medical ethics, should be encouraged.

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Participation of the authors

Sylvia Márcia Fernandes dos Santos Lima and Sandy Mayra Motta da Silva collected and analyzed the data, outlined the study, wrote the article and formatted it according to the magazine's rules. Nedy Maria Branco Cerqueira Neves guided all stages of the research and carried out a critical review. Lucíola Maria Lopes Crisostomo guided the methodology and analysis of the research data.

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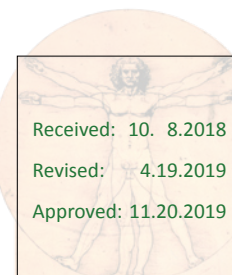
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Appendix

Questionnaire

Age: _____

Gender: () F () M

Semester: _____

Have you read the Medical Ethics Code?

() Yes () No

Have you read the Hippocratic Oath?

() Yes () No

Have you taken the discipline Ethics and Professionalism?

() Yes () No

Read the situations described in the column on the right and mark the correct alternative, considering your knowledge of Chapter IX - professional confidentiality, of the Medical Ethics Code.

Nº	Situations	Did the doctor or medical student act in accordance with Chapter IX - professional confidentiality - of the Medical Ethics Code?
1	A doctor is summoned to testify about her psychiatric patient, who committed a homicide during a psychotic episode. She testifies to the judge that she cannot reveal information about her patient's condition, stating that she is backed by the Medical Ethics Code.	() Yes () No
2	A doctor attends a 19-year-old patient who was admitted to the emergency room because of a suspected abortion and reports the crime to the police authority.	() Yes () No
3	A doctor attends a minor patient with syphilis in the office, who does not want to tell the family about his condition. Even so, she reports the case to the family.	() Yes () No
4	A doctor participates in a conference and exposes the clinical case of a patient of his, disclosing identifiable details of the clinical history and showing photos, with the patient's prior authorization.	() Yes () No
5	A doctor charged his fees judicially and, in the lawsuit, did not inform all the data concerning the patient's health condition.	() Yes () No
6	A patient insured by a private health plan comes to the doctor's appointment and the doctor orders several tests and issues a form for that purpose, including the patient's identification and the International Classification of Diseases (ICD) code for his pathology.	() Yes () No
7	A worker undergoes a pre-admission examination for being hired at a certain company and the employer wants to know if the candidate has AIDS. The doctor sends a report stating that he cannot disclose such information.	() Yes () No
8	The family of a deceased patient goes to the attending physician and asks for information about consultations before his death. The professional then releases the medical records with all the information for them.	() Yes () No
9	A famous actor is admitted to a referral hospital in São Paulo. He was brought unconscious by ambulance and the case is quickly reported by the media. A hospital doctor immediately issues a report informing the patient's diagnosis.	() Yes () No
10	A professor and her students are discussing a clinical case in class. A medical student, excited about his new practice, takes a picture of the patient's medical records and posts it on a social network.	() Yes () No

Questionnaire answers and comments

Age: _____

Gender: () F () M

Semester: _____

Have you read the Medical Ethics Code?

() Yes () No

Have you read the Hippocratic Oath?

() Yes () No

Have you taken the discipline Ethics and Professionalism?

() Yes () No

Read the situations described in the column on the right and mark the correct alternative, considering your knowledge of Chapter IX - professional confidentiality, of the Medical Ethics Code.

1. A doctor is summoned to testify about her psychiatric patient, who committed a homicide during a psychotic episode. She testifies to the judge that she cannot reveal information about her patient's condition, stating that she is backed by the Medical Ethics Code.

Answer: Yes. In case of a criminal investigation, the doctor cannot reveal a patient's confidential information, even when testifying in court as a witness, or expose the patient to criminal proceedings by reporting information that has been confided to him, as provided for by article 73 of the MEC^{1,2}. The Judiciary cannot punish, prosecute or arrest the professional alleging a crime of disobedience, because there is no criminal intent in omitting facts related to their practice^{3,4}.

2. A doctor attends a 19-year-old patient who was admitted to the emergency room because of a suspected abortion and reports the crime to the police authority.

Answer: No. The doctor should not report to the police authority a crime for which the patient can be prosecuted, which includes abortion, according to article 73 of the MEC^{1,2}. The Ministry of Health recommends that, in the event of an unsafe abortion, the doctor should act ethically, without making any value judgment. Health professionals should accept, welcome and ensure the woman's survival, without causing her inconvenience or embarrassment⁵.

3. A doctor attends a minor patient with syphilis in the office, who does not want to tell the family about his condition. Even so, she reports the case to the family.

The case was considered ambiguous because it did not specify the age of the "minor" and also did not mention the degree of cognitive development. Therefore, during the analysis of the data, we chose to disregard it, excluding the answers to this question from the statistical analysis. The decision was made considering the aspects discussed below.

Article 74 of the MEC prohibits the doctor from *disclosing professional confidential information related to a minor patient, including his parents or legal representatives, as long as the minor has the capacity for discernment, except when non-disclosure could harm the patient*⁶. The updated MEC replaced the expression "underage" with "child and adolescent" in this article, making it clear that there are specificities according to age groups, in order to avoid doubts².

An "underage" person in Brazil someone between 0 to 17 years old, and the Brazilian Child and Adolescent Statute (ECA) stipulates that child is the person up to 12 years old and adolescents those aged 12 to 18 years old. In exceptional cases, and when provided for by law, the ECA is applicable up to the age of 21⁷.

Children are considered legally incompetent and their autonomy is limited by their incomplete cognitive development. Therefore, they need to be assisted by a legal guardian during medical consultation, although it is recommended to involve them in the decision-making process, providing information appropriate to their degree of understanding⁸. Adolescents are considered capable of evaluating their problems and finding ways to solve them; they have the right to be attended without the presence of parents or legal guardians in medical consultation, and their autonomy and individuality are legally recognized. In risk situations (such as pregnancy, surgery, drug abuse, risk to the life or health of others, among others) the participation and consent of a legal guardian is required; however, adolescents should be informed of the reasons for this decision⁹⁻¹¹.

In addition, very young patients will only have their autonomy compromised in case of partial or absolute cognitive impairment¹², which influences the decision-making process and the need for a companion during the consultation.

4. A doctor participates in a conference and exposes the clinical case of a patient of his, disclosing identifiable details of the clinical history and showing photos, with the patient's prior authorization.

Answer: No. Article 75 of the MEC prohibits the physician from *referring to identifiable clinical cases, exposing patients or their image in professional advertisements or in the dissemination of medical matters in the media, even with the patient's authorization*⁶. The updated MEC reinforced the importance of preserving patients by stipulating that it is prohibited to display images that make them recognizable². Even with the person's consent, this prohibition aims to respect patients' dignity by avoiding treating them as mere illustrative figures, regardless of the physical and emotional condition caused by the disease¹³.

5. A doctor charged his fees judicially and, in the lawsuit, did not inform all the data concerning the patient's health condition.

Answer: Yes. In accordance with Article 79 of the MEC, doctors are prohibited from *failing to keep professional confidentiality in the collection of fees through judicial or extrajudicial means*⁶. Such collection is lawful and ethical, and the confidentiality of data must be ensured.

6. A patient insured by a private health plan comes to the doctor's appointment and the doctor orders several tests and issues a form for that purpose, including the patient's identification and the International Classification of Diseases (ICD) code for his pathology.

Answer: No. Although FCM Resolutions 1,642/2002¹⁴ and 1,819/2007¹⁵ deal specifically with the topic and Article 73 of the MEC supports doctors in maintaining confidentiality during their practice^{1,2}, there are still doubts about the use of ICD codes in medical care, consultations and test forms, especially when involving health insurers¹⁶. Although health insurance plans hire doctors as medical auditors to control and evaluate the medical resources and procedures adopted, in order to improve the quality of the services provided, the insertion of ICD codes in forms goes against medical ethics principles, even with the justification of preventing fraud, since the data is usually viewed by people other than doctors^{13,17-19}. The matter has been discussed in court^{43,45} and both doctors and students must be updated on the legal issues involved.

7. A worker undergoes a pre-admission examination for being hired at a certain company and the employer wants to know if the candidate has AIDS. The doctor sends a report stating that he cannot disclose such information.

Answer: Yes. Article 76 of the MEC prohibits doctors from *disclosing confidential information obtained during the medical examination of workers, including when requested by directors of companies or institutions, unless in case of risk of harm to the health of employees or the community*⁶. Even with HIV, the person is able to work and, when necessary, can take precautions to protect other workers (use of gloves, washing hands, among others). In pre-hiring screening, it is unethical for doctors to disclose test results to the employer in the context of job recruitment to exclude candidates, when clinical conditions do not affect the activities to be performed by the worker^{21,22}.

8. The family of a deceased patient goes to the attending physician and asks for information about consultations before his death. The professional then releases the medical records with all the information for them.

Answer: Yes. The doctor in this case acted in accordance with article 73 of MEC^{5,6} and with FCM Recommendation 3/2014, which recommends to *disclose, when requested by the surviving spouse/companion of the deceased patient, and successively by the legitimate heirs of the patient in a straight line, or collateral relatives up to the fourth degree, the medical records of the deceased patient*⁴⁹. In addition, MEC's article 88, which refers to medical documents, was altered in the updated code to allow patients' access to their medical records or, in their absence, their legal representative's access⁶.

9. A famous actor is admitted to a referral hospital in São Paulo. He was brought unconscious by ambulance and the case is quickly reported by the media. A hospital doctor immediately issues a report informing the patient's diagnosis.

Answer: No. The publishing of medical documents, such as newsletters, is regulated by articles 73 and 85 of the Code of Ethics, which prohibits doctors from *allowing the handling and knowledge of medical records by people not obliged to professional confidentiality when under their responsibility*^{1,24}. The publishing of such documents is regulated by FCM Resolution 1,974/2011, which states that *when publishing medical documents, they must be prepared in a sober, impersonal and truthful manner, preserving medical confidentiality*²⁵.

10. A professor and her students are discussing a clinical case in class. A medical student, excited about his new practice, takes a picture of the patient's medical records and posts it on a social network.

Answer: No. Article 78 of the MEC prohibits doctors from *failing to provide guidance to their assistants and students in respecting professional confidentiality and ensuring that confidentiality is safeguarded by them*⁶. Teachers are crucial for forming the students' opinion about ethical conduct and technical aspects of daily professional life. It is the duty of medical professors to provide guidance on ethical attitudes, based on the Hippocratic Oath and on the MEC, including regarding the use of social networks, in a manner appropriate to the practice of medicine. Exposing facts and images of

patients may lead to moral injury and subject the professional to punitive damages²⁶. It is also important to emphasize the importance of professors addressing the Medical Student Ethics Code (MSEC) during undergraduate studies, a document that stipulates for the respect for the patient and the confidentiality of information in its Fundamental Principles V and IX and in articles 28, 29, 32 and 34²⁷.

The disclosure of confidential information violates article 5 of the Brazilian Federal Constitution²⁸, and doctors are subject to prosecution based on the provisions of article 154 of the Brazilian Penal Code²⁹. Regarding the situations exposed in all the proposed cases, if doctors fail to act appropriately, they may be subject to an ethical-professional inquiry, which may lead or not to punitive sanctions after an ethical-professional process (EPP)³⁰.