Confidentiality in physician-patient relation:

Abstract

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Physician-patient relations must follow parameters to ensure autonomy and liberty to both. One such parameter is confidentiality, recognized as a patient right and an obligation of physicians. Hence, this study evaluated student knowledge about medical confidentiality by applying a questionnaire to 409 medical undergraduates (first- to fourth-years). Comparing the median match to the expected answers revealed that first-years achieved the lowest scores on the problem-situations. Results show a clear difference in the degree of knowledge between years, increasing by the second year and maintained until the fourth year.

Keywords: Confidentiality. Physician-patient relations. Knowledge. Students, medical. Ethics, medical. Education, medical.

Resumo

Sigilo profissional na relação médico-paciente: conhecimento de estudantes de medicina

A relação entre médico e paciente deve se estabelecer conforme parâmetros que garantam autonomia e liberdade a ambos. Entre tais parâmetros está o sigilo, que representa um direito essencial do paciente e uma obrigação do médico. Este estudo avalia o conhecimento de estudantes de medicina sobre o sigilo profissional mediante aplicação de um questionário a 409 alunos do primeiro ao quarto ano da graduação. Comparando a mediana de correspondência com as respostas esperadas, observou-se que o primeiro ano obteve notas menores nas situações-problemas. Concluiu-se que há diferença no grau de conhecimento entre os anos da graduação e que ele evolui no segundo ano, mantendo-se na mesma proporção até o quarto ano.

Palavras-chave: Confidencialidade. Relações médico-paciente. Conhecimento. Estudantes de medicina. Ética médica. Educação médica.

Resumen

Secreto profesional en la relación médico-paciente: conocimientos de los estudiantes de medicina

La relación entre el médico y el paciente debe basarse en parámetros que garanticen la autonomía y la libertad a ambos. Entre estos parámetros se destaca el secreto profesional, que es un derecho esencial del paciente y una obligación del médico. Este estudio evaluó los conocimientos de los estudiantes de medicina sobre el secreto profesional mediante la aplicación de un cuestionario a 409 estudiantes de primer a cuarto año de la carrera. La comparación entre la mediana de correspondencia y las respuestas esperadas dio como resultado que el primer año obtuvo puntuaciones más bajas en las situaciones problemáticas. Se concluyó que existe una diferencia en el nivel de conocimientos entre los años del grado y que evoluciona en el segundo año, manteniéndose en la misma proporción hasta el cuarto.

Palabras clave: Confidencialidad. Relaciones médico-paciente. Conocimiento. Estudiantes de medicina. Ética médica. Educación médica.

The authors declare no conflict of interest.

Approval CEP-FMB-Ufba-CAAE-Plataforma Brasil 48972821.6.0000.5577

For being interpersonal, the physician-patient relationship requires parameters that guarantee both of them may enjoy autonomy and freedom¹. Medical confidentiality is a relevant aspect in this relationship, since the success of the treatment is closely linked to obtaining as much information as possible of the patient's history, and trust is one of the pillars to obtaining it². According to Loch³, in the physician-patient relationship, confidentiality includes the values of right and duty, as it represents an essential right of the patient which the physician is obliged to ensure.

The Hippocratic Oath, taken to this day by medical graduates, states that duty: All that may come to my knowledge, in the exercise of my profession or in daily commerce with men, which ought not to be spread abroad, I will keep secret and will never reveal 4. One notes, therefore, that since the beginning of the practice of medicine, the observance of these aspects and the right to confidentiality must be guaranteed to patients, as a means to ensuring their freedom and autonomy.

However, even if one presumes that physicians will act accordingly, that alone is not enough to guarantee confidentiality: standardization and constant monitoring are essential to ensure this right. Hence, the Brazilian Penal Code, in Article 154, provides that a professional may be punished for revealing, without just cause, a secret, which he or she is aware of due to his/her function, ministry, trade or profession, and whose disclosure may cause harm to others 5. The Code of Medical Ethics (CEM), established by the Brazilian Federal Council of Medicine (CFM) 6 to govern medical practice, included a chapter dedicated to professional confidentiality. Infractions committed against it should entail sanctions and penalties to the offender 6, with the support of the Brazilian Federal Constitution 7.

Nevertheless, confidentiality is not conceived as absolute, and there are specific situations—characterized by just cause, legal duty and/or patient consent—in which its breach does not constitute an infraction. In these cases, maintaining confidentiality implies harming third parties or putting people at risk and, therefore, it should not be maintained ².

This is the case, for example, of mandatory notification of communicable diseases, and also of forwarding information on transplant procedures,

in accordance with Consolidation Ordinance 4/2017 of the Brazilian Ministry of Health ⁸. The legal duty, in these cases, is the breach of confidentiality, which must be done after obtaining written consent from the patient ⁶.

In this context, the characterization of just cause may be subjective, which evidences the complexity of the issue and underscores the need to observe all ethical and moral aspects to guarantee adequate care for patients³. According to Hermann von Tisenhausen, a CFM board member, breach of confidentiality should be an exception, never a rule⁹. But it may be difficult to establish the limits of what is considered an exception to the rule¹⁰.

In the context of the COVID-19 pandemic, in which social distancing to fight the spread of the virus changed the population's habits regarding the use of in-person health services, telemedicine became more frequent. The practice of medicine via electronic means also requires the doctor to pay attention to confidentiality, considering the need to guarantee the protection of patient data and information, which become subject to loss and leaks ¹¹. Such changes merely reaffirm the timelessness of the topic and the need to dedicate oneself to its study.

Given the importance of maintaining professional confidentiality in the physician-patient relationship, due to the subjectivity involved and the need to expand physicians' knowledge on the topic, this study aimed to evaluate the knowledge of first- to fourth-year undergraduate medical students about ethical issues intrinsic to dealing with confidentiality and its breach.

Method

This is a cross-sectional, analytical-descriptive study with a quantitative approach, carried out by administering an online questionnaire adapted from Sales-Peres and collaborators ¹² and Lütz, Carvalho and Bonamigo ² on the Google Forms platform. The questionnaire was offered to medical students at Faculdade de Medicina da Bahia (FMB) of Universidade Federal da Bahia (UFBA), enrolled between the first and fourth years. The final sample

consisted of all voluntary responses from students, who agreed to signing the informed consent form.

The study was approved by the FMB-UFBA Research Ethics Committee, observing the recommendations of Resolution 466/2012 of the National Health Council (CNS) 13 on research ethics. The inclusion criteria were: being a student regularly enrolled in the UFBA medical course and in the first to fourth years. The exclusion criteria were: being from other medical schools, even if studying subjects at FMB within an academic mobility program, or not being in the pre-defined terms.

Data were collected by publishing the questionnaire link in the WhatsApp groups of the classes involved, from July to September 2021. This link was forwarded three times, at 20-day intervals, and the questionnaire contained two parts: one aimed at collecting demographic data (such as gender, age group, skin color, semester, previous study of the CEM and professional confidentiality), and another with 12 problem situations with ethical dilemmas regarding professional confidentiality. In this second part, students should choose the alternative that expressed the ethical behavior to be adopted according to the CEM.

The categorical variables were described as frequencies and percentages, and normality of the continuous variables was measured using the Kolmogorov-Smirnov test. The continuous variables with normal distribution were described as mean and standard deviation (SD), and those with non-normal distribution were described as median and interquartile range (IQR).

The Mann-Whitney test was used for the bivariate analysis of non-normal variables, and the Kruskal-Wallis test was used for the analysis of non-normal variables with categorical variables with more than two categories. Values of p<0.05were considered statistically significant, with a 95% confidence interval. The analyses were carried out using SPSS Statistics version 20.0.

Results

Sociodemographic characterization

In the second semester of 2021 (2021.2), 662 students were enrolled between the first and eighth terms of the FMB-UFBA undergraduate medical course, 409 (61.8%) of whom answered the questionnaire. According to Table 1, most of them were women (50.6%), aged between 21 and 25 (62.8%) and brown (49.6%). Students from all terms of the first to fourth years answered the questionnaire, with a predominance of those in the second year (30.8%) and lower participation of third-year students (17.3%).

Table 1. Overall characteristics of the sample of students in the 1st to 4th year (2021.2)

Year in undergraduate course n (%) Year 1 107 (26.2) Year 2 126 (30.8) Year 3 71 (17.3) Year 4 105 (25.7) Gender n (%) Man 201 (49.1) Woman 207 (50.6) Non-binary 1 (0.3) Age (years) n (%) 16-20 64 (15.6) 21-25 257 (62.8) 26-30 49 (12) 31-35 22 (5.4) 36 and over 17 (4.2) Race/skin color n (%) Yellow 1 (0.2) White 125 (30.6) Indigenous 02 (0.5) Brown 203 (49.6) Black 78 (19.1) Previous reading of Code of Medical Ethics n (%) Full 69 (16.9) Partial 305 (74.6) None 35 (8.5) Previous class on medical confidentiality n (%) Yes 354 (86.6) No 55 (13.4)		Total (n=409)
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	Previous class on medical confidentiality	n (%)
No 55 (13.4)	Yes	354 (86.6)
	No	55 (13.4)

continues...

Table 1. Continuation

Variable	Total (n=409)
Previous academic guidance on confidentiality	n (%)
Yes	374 (91.4)
No	35 (8.6%)
Considers the study of medical ethics relevant in undergraduate studies	n (%)
Yes	408 (99.8)
No	1 (0.2)
Self-assessed knowledge about confidentiality in the physician-patient relationship	n (%)
Highly insufficient	14 (3.4)
Insufficient	42 (10.3)
Average	176 (43.0)
Sufficient	164 (40.1)
Highly sufficient	13 (3.2)

Knowledge of confidentiality

Regarding previous study and knowledge about medical confidentiality, most students reported

having read the CEM partially (74.6%), having attended classes on medical confidentiality in their undergraduate studies (86.6%) and having received guidance on medical confidentiality in their undergraduate studies (91.4%). Most also assessed their level of knowledge on the topic as average (43%) and sufficient (40.1%). The study of medical ethics is considered relevant to medical training by 99.8% of participants.

Among the problem situations included in the questionnaire, as can be seen in Table 2, situation 8 had the highest percentage of correct answers in all classes, being answered correctly by 365 students (89.2%). The question referred to a patient who reveals to the psychiatrist that he will kill his ex-girlfriend in the next few days, posing the dilemma of whether or not to disclose the fact to the authorities. On the other hand, problem situation 1—which concerned the possibility of revealing to the mother of a minor that she attended an appointment alone and reported being a heavy drug user—obtained the lowest percentage of correct answers (51.1%). The median score of first-year students was 6.67 (interquartile range -IQR 5.83-8.33), and the score of second- to fourthyear students was similar, 7.50 (IQR 6.67-8.33).

Table 2. Knowledge about medical confidentiality by year of course and score obtained in the questionnaire

Problem situation	Кеу	Year 1 Correct answers n (%)	Year 2 Correct answers n (%)	Year 3 Correct answers n (%)	Year 4 Correct answers n (%)
1. A minor attends urgent care alone and in the anamnesis says she is a heavy drug user, asking you not to tell her parents. At the next appointment, the mother accompanies her. On this occasion, you:	Tell the mother that the minor is a drug user.	52 (48.6)	65 (51.6)	42 (59.2)	50 (47.6)
2. A patient asks you to detail the treatment received in the invoice, as it will be paid for by the employer.	Provide invoice after written consent.	85 (79.4)	110 (87.3)	53 (74.6)	78 (74.3)
3. A woman comes to you claiming to be the mother of the minor to whom you provided urgent care and asks to see the minor's medical record. You:	Show the medical record after confirming that she is the mother.	65 (60.7)	66 (52.4)	32 (45.1)	58 (55.2)
4. 25-year-old woman self-induces an abortion. During treatment of the resulting uterine bleeding in hospital, she said that she was responsible. Should the attending medical staff report the incident to the authorities?	No	80 (74.8)	103 (81.7)	63 (88.7)	94 (89.5)

continues...

Table 2. Continuation

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Problem situation	K	(ey	Year 1 Correct answers n (%)	Year 2 Correct answers n (%)	Year 3 Correct answers n (%)	Year 4 Correct answers n (%)
5. During treatment of the resulting uterine bleeding in hospital, she said that she was responsible. As she is underage, should the attending medical staff report the incident to the authorities?	No		62 (57.9)	91 (72.2)	53 (74.6)	88 (83.8)
6. During a testimony, a judge asks the physician whether his patient self-induced an abortion. During treatment, the woman told the physician that she had done it, and the hospital staff reported her to the police, although the patient had not authorized anyone to reveal this information. Is the physician obliged to reveal it, as they testify before the judge?	No		63 (58.9)	85 (67.5)	57 (80.3)	81 (77.1)
7. You notice that a bus driver has poor vision (below minimum requirements). Should you breach confidentiality by informing the fact to the employer, against the employee's wishes?	Yes		69 (64.5)	88 (69.8)	49 (69.0)	71 (67.6)
8. A patient told the psychiatrist that he is going to kill his ex-girlfriend in the next few days. Should the physician breach confidentiality and immediately report the fact to the authorities?	Yes		91 (85.0)	114 (90.5)	63 (88.7)	97 (92.4)
9. It is suspected that the patient will worsen if the diagnosis of his serious illness is revealed to him at that moment. Should the doctor inform the diagnosis anyway?	No		52 (48.6)	82 (65.1)	46 (64.8)	78 (74.3)
10. A patient confides to the psychiatrist that he is depressed for having caused deaths in an accident in the past, but was not caught because he ran away and does not want the fact to be known. After the session, should the physician report the fact to the authorities?	No		81 (75.7)	95 (75.4)	61 (85.9)	94 (89.5)
11. A 27-year-old patient, bricklayer, married, with three healthy children, visits the infectious disease clinic with complaints of weight loss and oral thrush. HIV serology testing was performed, with a positive result. The patient does not intend to reveal this fact to his wife, for he has extramarital affairs and does not want her to know, as she would leave him. Should the physician reveal the fact to the patient's wife?	Yes		61 (57.0)	91 (72.2)	49 (69.0)	57 (54.3)
12. A patient diagnosed with COVID-19 and presenting mild symptoms keeps the diagnosis secret and refuses to stay away from the workplace, maintaining contact with his colleagues. The attending physician decided not to do anything about the situation due to professional confidentiality. In this case, is the physician's ethical behavior correct?	No		87 (81.3)	113 (89.7)	64 (90.1)	91 (86.7)
Score median (IQR)	-		6.67 (5.83-8.33)	7.50 (6.67-8.33)	7.50 (6.67-8.33)	7.50 (6.65-8.33)

IQR: interquartile range (25%-75%)

When comparing the medians of the total number of correct answers of students from each year in problem situations regarding medical confidentiality, the Kruskal-Wallis test was performed and resulted in p=000.1, which shows a statistically significant difference in the level of knowledge between the years. In a more detailed analysis, using the Mann-Whitney test, the median of each year was compared pair by pair, revealing statistical significance only in the following comparisons: first and second years (p=0.005), first and third years (p=0.006) and first and fourth years (p=0.002), with the first year associated with lower scores compared to the other three.

When students who had had a previous class on confidentiality were compared with those who had not, there was a statistically significant difference in the median score (p<0.001), with the former group associated with higher scores. In the comparison between students who at some point during their undergraduate studies had received academic guidance regarding medical confidentiality and those who had not, there was also a statistically significant difference (p<0.001), with the former group associated with a higher median score. Regarding full or partial reading of the CEM, there was no statistically significant difference between the groups, with the medians of those who had read it being similar to those of those who had not, as shown in Table 3.

Table 3. Comparison of scores according to previous reading of the CEM and previous classes and academic guidance on medical confidentiality

Variable	Yes Score, median (IQR)	No Score, median (IQR)	p value
Previous class on confidentiality	7.50 (6.67-8.33)	6.67 (5.00-7.50)	<0.001
Previous academic guidance	7.50 (6.67-8.33)	6.25 (5.21-7.50)	0.001
Full Reading of the CEM	7.50 (6.67-8.33)	7.50 (5.83-8.33)	0.20
Partial Reading of the CEM	7.50 (5.83-8.33)	7.50 (5.83-8.33)	0.62

p value: obtained by the Mann-Whitney test; IQR: interquartile range (25%-75%); CEM: Code of Medical Ethics

Discussion

Data analysis identified a statistically significant difference in the level of knowledge between the years of medical school, so that the first year is associated with lower scores in the problem situations when compared to the other years. The variation makes it possible to infer that the level of knowledge about medical confidentiality increases from the second year onwards. This result is in agreement with the study by Lima and collaborators ¹, which concluded that students at a more advanced stage of education have a better understanding of the subject.

However, no significant difference in performance was observed between second-, third- and fourth-year students, although it was expected that performance in the last group would be better. This result is partially in agreement with the studies by Almeida and collaborators ¹⁴, Mendonça, Villar and Tsuji ⁴ and Yamaki and collaborators ¹⁵, in which

the level of knowledge was the same among students from all terms. What may explain the result obtained in this study is the fact that the second year is exactly the moment in which specific theoretical discussions about professional confidentiality are introduced in the FMB-UFBA curriculum ¹⁶.

In a similar study, Lütz, Carvalho and Bonamigo² concluded that students who had already taken ethics classes during their undergraduate studies performed better in resolving simulated ethical conflicts, compared to those who had not. This result corroborates what was found in this study, with a statistically significant difference in the same comparison, underscoring the need and importance of dedicating a relevant number of hours to the teaching of ethics in undergraduate courses.

In their study, Lima and collaborators ¹ did not obtain a statistically significant difference in the level of knowledge of students who had read the CEM compared to those who had not, which was also observed in this survey. This outcome can be related to the thesis that, despite being important,

the teaching of ethics should not only happen vertically and theoretically, but also be stimulated with active and different methodologies to generate better perception and more interest in students regarding the topic ¹⁷.

Among the 12 problem situations presented to the students, the two with the lowest percentage of correct answers involved ethical dilemmas in breaching the confidentiality of an underage patient. The first involved a minor attending an appointment alone and stating in the anamnesis that she used illegal drugs, asking the physician not to tell her parents. In this case, the correct behavior to be taken by the attending physician would be to reveal to the parents that she is a drug user, as not disclosing this fact would keep the minor at risk. Such a risk is not acceptable to the CEM, so the breach of confidentiality should occur for a just cause ⁶.

The second situation described the case of a minor patient who underwent urgent care and whose mother requested access to the medial records. Santos, Santos and Santos ¹⁸ consider that confidentiality in the context of child and adolescent care is a major challenge today due to ethical controversies. In this sense, it is possible that, in those problem situations, students considered that disclosing information to responsible parents would violate patients' privacy or even that they would be capable of taking decisions regarding their own health.

Among the results, one question showed a greater discrepancy between the percentage of correct answers of students in initial years compared to those in more advanced years. In the hypothetical situation, a teenager reveals to the physician that she self-induced an abortion and the ethical dilemma is whether or not to reveal the fact to the authorities. In this question, only 57.9% of first-year students got it right, compared to 83.8% of fourth-year students.

The issue of abortion is generally addressed from the perspective of individual opinions, which may justify the low percentage of correct answers among first-year students, as they have not yet had enough ethical discussions to deliberate correctly on the topic. They may even be influenced by previous moral values, unlike fourth-year students, whose theoretical maturity in relation to the subject is greater. In this case,

Article 73 of the CEM provides that the physician cannot reveal information that may make the patient criminally liable, therefore they should not reveal it to the authorities ⁶.

The problem situations that had the highest percentages of correct answers involved the dilemmas of a patient who tells the psychiatrist that he will kill his ex-girlfriend in the next few days and of a patient diagnosed with COVID-19 who keeps his diagnosis secret, refusing to stay away from the workplace. The high percentage of correct answers in both can be justified by the easy interpretation of the questions, since not breaching confidentiality generates imminent and direct risks to the lives of third parties, which is not acceptable in medical practice. Therefore, the physician needs to communicate the facts to the competent authorities, as he must always care for the health and life of humans.

By including medical students from only one institution in the sample, the study has limitations. In this sense, further studies on professional confidentially are suggested to compare the performance of students from different schools and the impact of their teaching methodologies. Another important limitation is associated with the instrument used for data collection and the convenience sampling method, with the possible occurrence of selection and/or information bias.

Final considerations

The results of this study show that there is a difference in the level of knowledge of medical students from different terms regarding professional confidentiality, with knowledge increasing from the second year of medical school and being preserved from the second to the fourth year. It is also possible to conclude that students who attended classes and/or received guidance on medical confidentiality have greater knowledge compared to those who did undergo such processes.

In addition, it is also possible to state that there are differences in level of knowledge depending on the topic assessed. Deficiencies were observed in the guidelines on the confidentiality of patients of different ages. Therefore, the issue should be addressed in greater depth in the curriculum.

In this sense, it is suggested that the topic of "professional confidentiality" be widely and continuously discussed, in different theoretical and practical areas, throughout the undergraduate

course, including during the internship period, for the consolidation of knowledge and correct discernment about the dilemmas that students will face when they become physicians.

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Participation of the authors

Aurélio Almeida designed the study, drafted the project, collected and analyzed the data and wrote the article. Cláudia Bacelar Batista contributed to the conception and writing of the paper at all stages, as advisor of the final undergraduate project on which the paper is based.

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