

# Professional secrecy: knowledge of medical students and physicians

Kevin Timm Lütz<sup>1</sup>, Diego de Carvalho<sup>2</sup>, Elcio Luiz Bonamigo<sup>3</sup>

## Abstract

Professional secrecy is the basis of trust in the doctor-patient relationship. This is a cross-sectional, quantitative study aiming to describe the knowledge of medical students and physicians about secrecy. Participants included 100 students who had not studied Ethics (Group 1), 113 that had studied Ethics (Group 2) and 127 regional physicians (Group 3), totaling 340 participants. Group 2, composed of students who had taken two Ethics subjects, had more right answers in 9 of the 16 questions, seven with statistical significance, surpassing Group 3, composed of physicians, which had more correct answers in 3 questions, without significance, and Group 1 with more correct answers in two questions, both significant. It is concluded that teaching contributed to increase knowledge about professional secrecy during medical school and that it is necessary to find ways to emphasize the knowledge of this subject among professionals.

**Keywords:** Confidentiality. Ethics, medical. Physician-patient relations. Physicians. Students, medical.

## Resumo

### Sigilo profissional: conhecimento de alunos de medicina e médicos

Sigilo profissional é a base da confiança na relação médico-paciente. Esta pesquisa, transversal e quantitativa, teve por objetivo descrever o conhecimento de graduandos de medicina e médicos sobre confidencialidade. Participaram do estudo 100 alunos que não haviam cursado disciplinas de ética (Grupo 1), 113 que as haviam cursado (Grupo 2) e 127 médicos da região (Grupo 3), totalizando 340 participantes. O Grupo 2 obteve mais acertos em 9 das 16 questões, 7 com significância estatística, superando o Grupo 3, que obteve mais respostas corretas em apenas 3 questões, sem significância, e o Grupo 1, com mais acertos em 2 questões, ambas significantes. Conclui-se que o ensino na graduação contribuiu para aumentar o conhecimento sobre sigilo profissional e é necessário para enfatizar o tema entre médicos.

**Palavras-chave:** Confidencialidade. Ética médica. Relações médico-paciente. Médicos. Estudantes de medicina.

## Resumen

### Secreto profesional: conocimiento de estudiantes de medicina y médicos

El secreto profesional es la base de la confianza en la relación médico-paciente. Esta investigación, transversal y cuantitativa, tuvo como objetivo describir el conocimiento de los estudiantes de medicina y de los médicos sobre confidencialidad. Participaron del estudio 100 estudiantes que no habían cursado disciplinas de Ética (Grupo 1), 113 que las habían cursado (Grupo 2) y 127 médicos de la región (Grupo 3), totalizando 340 participantes. El Grupo 2 obtuvo más aciertos en 9 de las 16 preguntas, 7 con significancia estadística, superando al Grupo 3, que obtuvo más respuestas correctas en sólo 3 preguntas sin significancia, y el Grupo 1 tuvo más aciertos en 2 preguntas, ambas significantes. Se concluye que la formación en la carrera de grado contribuyó a aumentar el conocimiento sobre secreto profesional y que es necesaria para darle énfasis entre los médicos.

**Palabras clave:** Confidencialidad. Ética médica. Relaciones médico-paciente. Médicos. Estudiantes de medicina.

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1. **Graduando** kevin.lutz@unoesc.edu.br – Universidade do Oeste de Santa Catarina (Unoesc) 2. **Doutor** diego.carvalho@unoesc.edu.br – Unoesc 3. **Doutor** elcio.bonamigo@unoesc.edu.br – Unoesc, Joaçaba/SC, Brasil.

## Correspondência

Elcio Luiz Bonamigo – Rua Treze de Maio, 314, sala 21 CEP 89600-000. Joaçaba/SC, Brasil.

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Professional confidentiality (or confidentiality) is one of the essential pillars of the physician-patient relationship to develop the confidence necessary to reveal crucial information, sometimes indispensable for the success of treatment. This is not a recent concern: the historic Advice from Aesculapius already prevented the physician from revealing unworthy actions he got to know in the practice of the profession<sup>1</sup>. In the Hippocratic oath, medical secrecy showed some flexibility, being restricted to what was not necessary to disclose<sup>2</sup>. Thus, the right of patients to confidentiality and the physician's duty to observe them were definitively established, guaranteeing their freedom to disclose their information or not<sup>3-5</sup>.

However, common sense and the popular concept of confidentiality are not enough for the health professional to interpret more complex situations, which assume knowledge of current legislation. In this context, the Brazilian Federal Constitution<sup>6</sup>, Law 12,984/2014<sup>7</sup>, the Lei das Contravenções Penais<sup>8</sup> (Law on Criminal Misdemeanors), the Estatuto da Criança e do Adolescente – Statute of the Child and Adolescent (ECA)<sup>9</sup>, the Penal Code<sup>10</sup>, the Code of Penal Process<sup>11</sup>, the Civil Code<sup>12</sup>, the Code of Civil Process<sup>13</sup>, the Código de Ética Médica – Code of Medical Ethics (CEM)<sup>14</sup>, as well as Resolution 1,605/2000 of the Conselho Federal de Medicina – Federal Council of Medicine (CFM)<sup>15</sup>, summarized below.

Normalization of professional secrecy is based on the Brazilian Constitution, which, in article 5, item X, brings, as a fundamental right, the inviolability of personal intimacy, private life, and image<sup>6</sup>. The case of individuals living with HIV/AIDS is very challenging and led to the approval of Law 12,984/2014, of which Article 1 defines as a crime *punishable by imprisonment, from 1 to 4 years, and fine (...) disclosure of the condition of the person living with HIV or AIDS, with the intention of to offend their dignity*<sup>7</sup>.

The Penal Code, in articles 153 and 154, prohibits the disclosure of one's identity without fair motive if such disclosure could harm others. On the other hand, Article 26 considers that a physician incurs a crime if he *does not report to the public authority a disease whose notification is compulsory*<sup>10</sup>. These diseases, including HIV infection, are included in the National List of Compulsory Notification Diseases of Consolidation Ordinance MS 4/2017<sup>16</sup>.

In the same vein, article 66, item II, of the Criminal Misdemeanors Law describes as an offense to fail to communicate to the competent authority a public crime of which knowledge has been obtained in the practice of medicine or another health profession, provided that

this does not expose the client to criminal prosecution<sup>8</sup>. In this regard, Article 245 of the ECA declares the failure to report to the competent authority cases of suspected or confirmed abuse of children or adolescents as an administrative infraction<sup>9</sup>.

As for witnesses, there are similarities between the legal provisions. Article 207 of the Code of Criminal Process prohibits the testimony *of persons who, by reason of function, ministry, office or profession, must keep a secret unless, if released by the interested party, they wish to give their testimony*<sup>11</sup>. According to Article 229 of the Code, *no one may be required to testify on a fact to which, by state or profession, he or she must keep a secret*<sup>12</sup>. Under the Code of Civil Process, Article 448, *the witness is not required to testify on facts (...) about which, due to state or profession, they should keep confidentiality*<sup>13</sup>.

The Conselho Federal de Medicina – Brazilian Federal Council of Medicine (CFM) has included the standardization of professional secrecy in the Código de Ética Médica – Code of Medical Ethics (CEM), whose Core Principle XI states: *the physician shall maintain confidentiality about information that he has knowledge in the performance of his duties, except for cases provided for by law*<sup>14</sup>. Chapter IX of the CEM is devoted to these matters. Article 73 presents three situations that allow the breach of confidentiality: *fair motive, legal duty or written consent of the patient*<sup>14</sup>. However, the CEM is not read much, which favors misinformation about these ethical aspects<sup>3</sup>.

This study considered “just cause” as synonymous with “fair motive”, following the concept published by the Journal of the Conselho Regional de Medicina do Estado de São Paulo – Regional Council of Medicine of the State of São Paulo (Cremesp)<sup>17</sup>. However, this difference in the CEM version, of 2009<sup>14</sup>, does not seem to have contributed much to clarify the concept, only unnecessarily increasing the terminology – difficulty that the researchers encountered in this study.

One of the main situations that allow the breach of confidentiality for fair motive is when disclosure of secrecy can benefit persons at-risk<sup>18</sup>. This understanding was fundamental to the elaboration of some scenarios of this research. However, the subjective character is difficult<sup>5</sup> since the delimitation of fair motive is complex, differing as the case may be, the circumstances and the interests of the patient. As for legal duty, the main guideline is Consolidation Ordinance 4/2017<sup>16</sup> and, for minors, the ECA<sup>9</sup>.

Regarding the images of patients, including internal organs, their didactic use should be

preceded by authorization not to configure breach of confidential information<sup>19</sup>. To guide aspects related to the disclosure of the contents of medical records or clinical records, the CFM published Resolution 1,605/2000, which prohibits the physician to disseminate examinations or medical records without the patient's consent. If requested, only the expert appointed by the judge may have access to this data<sup>15</sup>.

In this context, the present article aimed to describe the knowledge of medical students and physician from the Midwest of Santa Catarina, Brazil, about the breach of professional secrecy in fair motive and legal duty.

## Method

This is a cross-cut, descriptive research with a quantitative approach. A semi-structured questionnaire with two parts was used: the first being sociodemographic, distinct for students and physicians; and the second common to all, with 16 specific questions about confidentiality in clinical settings, totaling 30 questions for academics and 26 for physicians.

The sample had 867 eligible participants: 234 medical students from the Universidade do Oeste de Santa Catarina – University of Western Santa Catarina (Unoesc) Joaçaba campus, and 633 physicians working in the Midwest of the state, divided into three groups. The first one included 106 students from the pre-clinical phases (1st to 3rd), who had not yet studied the subjects of Bioethics (Ethics and Society) and Medical Ethics, which deal with professional secrecy. Group 2 consisted of 128 students from the post-clinical phases (8th to 12th) who had already attended both subjects. Physicians working in the micro-region were in Group 3.

Sampling was performed by convenience and included students and professionals from Unoesc and the university hospital, and respected minimum statistical parameters for these analyzes. The institution was informed about the research and, after signing the free and informed consent form, physicians and students answered forms online or in print. Participants were aware that they would receive the results when published, and that the information obtained would serve to improve the teaching of professional secrecy in the researched course.

The collected variables were processed in Microsoft Excel and Statistica 7.0 software (StatSoft). To analyze the responses of the 16 scenarios, Pearson's chi-square test was performed, and the one-way Anova method was used to compare the means of the total score. To characterize the difference in response patterns, a value of  $p \leq 0.05$  was adopted.

## Results

Among the eligible participants, the survey selected 340, of which 100 (29.4%) were students from Group 1 and 113 (33.2%) were from Group 2. Efforts were made to increase the participation of Group 3 by contacting more than 330 physicians, but only 127 of them (37.4%) agreed to collaborate, a sample with a confidence rate of 80%, while the others have 100%.

Sociodemographic data were not important for the results, and the responses of the three groups regarding the clinical scenarios presented were divided into two tables: the first for questions about knowledge of legal duty; and the second, on fair motive, noting that the term "just cause" contained in the Penal Code and "fair motive" (CEM) were considered synonyms.

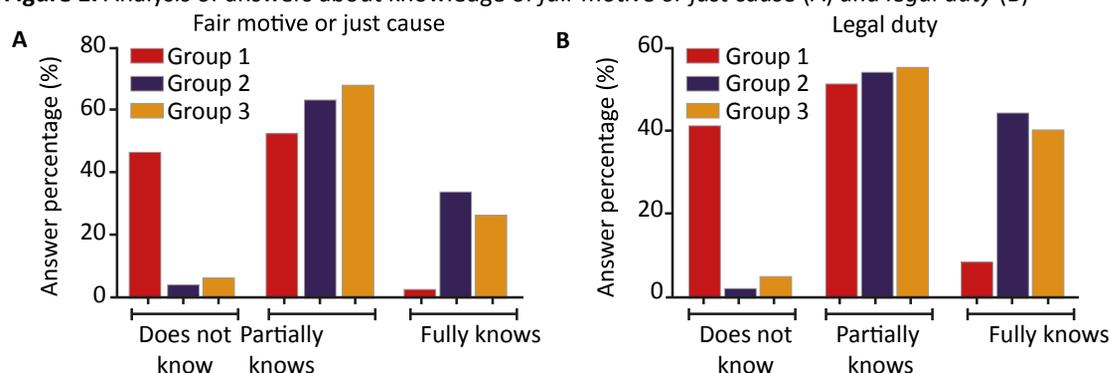
The average age of the students was  $23.06 \pm 3.54$  years and the physicians  $42.07 \pm 11.84$ . The distribution of females and males was relatively homogeneous ( $p=0.5992$ ) between Group 1 (58 women and 42 men) and Group 2 (61 women and 52 men), totaling 119 women (55.87%) and 94 men (44.13%). In Group 3, males predominated (85 men and 42 women), differing significantly from the others ( $p=0.0002$ ). The comparison between the latter and the others coincides with literature data that indicate increased enrollment of women in medical courses<sup>20</sup>.

Regarding the education level of the students' parents, most reported having completed higher education or graduate studies (54.5% in Group 1 and 61.9% in Group 2). Regarding the time of training of physicians, the average was 17.14 years (standard deviation  $\pm 11.96$ ), with a maximum of 56 and a minimum of zero, since newly graduated professionals were included. In these two items, the comparison of the data with the rate of correct answers did not show statistical significance.

Figure 1 presents the results of self-reported knowledge about just cause and legal duty. In both cases, greater ignorance is seen in Group 1. Pearson's chi-square analysis showed significant differences ( $p < 0.0001$ ) for the knowledge of the terms "fair motive or just cause" (Figure 1A) and "legal duty" (Figure 1B), which agrees with the final correct answer ratio per group.

Table 1 shows the answers to the nine questions that explored breach of confidentiality due to legal duty (1, 2, 3, 5, 8, 9, 13, 14, 15), and Table 2 shows the answers to the seven questions referring to the disclosure of patient's secrecy for just cause (4, 6, 7, 10, 11, 12, 16). In each table, there is a column containing the answer considered right by the authors ("Gab").

**Figure 1.** Analysis of answers about knowledge of *fair motive or just cause* (A) and *legal duty* (B)



**Table 1.** Answers to questions about legal duty

| Description of the fact related to professional secrecy: legal duty  | Gab | Correct answers per group |                 |                 | p       |
|--|-----|---------------------------|-----------------|-----------------|---------|
|  |     | Group 1 (n=100)           | Group 2 (n=113) | Group 3 (n=127) |         |
| 1. 25-year-old woman self-induces abortion. During the hospital treatment of the uterine bleeding resulting from the act, she said that she was responsible for it. Should health care professionals who report the fact to the public authority?  | No  | 58% (58)                  | 83.2% (94)      | 73.2% (93)      | 0.0003  |
| 2. Lucid 16-year-old teenager self-induced abortion. During hospital care of the uterine bleeding resulting from the act, she said that she caused it herself. Because she is a minor, should health professionals who attend her report this to the public authority?   | No  | 29% (29)                  | 61.1% (69)      | 48% (61)        | 0.0002  |
| 3. A judge, during testimony, asks the physician if the patient self-induced abortion. During the treatment, the woman told the physician that she had done so, and the hospital staff reported her to the police, although the patient did not allow anyone to expose this information. Is the physician obliged to disclose it because it is a statement before the judge? | No  | 38% (38)                  | 70.8% (80)      | 57.5% (73)      | <0.0001 |
| 5. A patient legally denounces a physician who broke confidentiality about his/her HIV positive status to unauthorized persons. Can the physician be arrested for this fact?   | Yes | 58% (58)                  | 54% (61)        | 37% (47)        | 0.0031  |
| 8. After consulting with her 16-year-old daughter, the mother asks the physician to confirm that the teenager is a virgin. The daughter asked for secrecy. Because it is a minor, can/should the physician reveal the information?   | No  | 87% (87)                  | 95.6% (108)     | 88.2% (112)     | 0.0624  |
| 9. When the patient arrives at the hospital with a knife or firearm injury, should the attending health professionals notify the public authority?   | Yes | 88% (88)                  | 71.7% (81)      | 81.1% (103)     | 0.0211  |
| 13. Underage patient is treated for suspected abuse. Should health professionals inform the public authority?  | Yes | 97% (97)                  | 95.6% (108)     | 97.6% (124)     | 0.6495  |
| 14. An 87-year-old woman is seen at a geriatric outpatient clinic. There are limb abrasions and trunk hematomas. The patient denies having suffered falls. As there is a consistent suspicion of maltreatment, should the physician notify the public authority?   | Yes | 94% (94)                  | 94.7% (107)     | 96.9% (123)     | 0.5453  |
| 15. A gynecologist who performs complementary examinations for the Unified Health System (SUS) observes a gross error examination request from a professional in the "Mais médicos" program and discloses an identifiable copy of the request to his WhatsApp group. Did the physician breach confidentiality?   | Yes | 97% (97)                  | 85.8% (97)      | 92.1% (117)     | 0.0133  |

Gab = answer considered right by the authors; Group 1 = students who had not taken ethics subjects; Group 2 = students who had already taken ethics subjects; Group 3 = physicians

**Table 2.** Answers to questions about just cause (fair motive)

| Description of the fact related to professional secrecy: Just cause  | Gab | Correct answers per group |                  |                  | p      |
|--|-----|---------------------------|------------------|------------------|--------|
|  |     | Group 1<br>n=100          | Group 2<br>n=113 | Group 3<br>n=127 |        |
| 4. A patient tells the health professional that he/she omits any sexual partners that he/she lives with HIV and does not want to change this behavior. Should the practitioner disclose the fact to the public authority and, if possible, to the persons involved?  | Sim | 63%<br>(100)              | 73.5%<br>(83)    | 63%<br>(80)      | 0.1801 |
| 6. The physician notes that the bus driver has low vision acuity (outside the allowed parameters). Should they breach confidentiality by informing the company of this fact against the employee's wishes?   | Sim | 72%<br>(72)               | 85.8%<br>(97)    | 78%<br>(99)      | 0.0432 |
| 7. A patient tells the psychiatrist that he is going to kill his ex-girlfriend in the coming days. Should the physician break confidentiality and immediately report it to the public authority?   | Sim | 84%<br>(84)               | 97.3%<br>(110)   | 81.9%<br>(104)   | 0.0004 |
| 10. It is suspected that the patient will get worse if, at that moment, the diagnosis of his/her serious illness is revealed to him. Should the physician report the diagnosis anyway?   | Não | 62%<br>(62)               | 62.8%<br>(71)    | 63%<br>(80)      | 0.9970 |
| 11. Patient confides to the psychiatrist that he/she is depressed for causing accident deaths in the past, but was not discovered because he/she fled and does not want to be revealed. After the consultation, should the professional communicate the fact to the public authority?  | Não | 73%<br>(73)               | 85.8%<br>(97)    | 78.7%<br>(100)   | 0.0491 |
| 12. A man reports to the physician that he has committed murder in the past and another person is imprisoned in his place. Is it for the physician to inform the public authority of the fact?   | Sim | 53%<br>(53)               | 46%<br>(52)      | 52.8%<br>(67)    | 0.4551 |
| 16. A 27-year-old bricklayer, married, with three healthy children, attends the infectious disease outpatient clinic with complaints of weight loss and oral candidiasis. HIV serology is performed, with a positive result. The patient does not intend to disclose this fact to his wife since he has extramarital affairs and does not want her to know about it, as she would abandon him. Should the physician reveal the fact to the patient's wife? | Sim | 45%<br>(45)               | 73.5%<br>(83)    | 61.4%<br>(78)    | 0.0001 |

*Gab* = answer considered right by the authors; *Group 1* = students who had not taken ethics subjects; *Group 2* = students who had already taken ethics subjects; *Group 3* = physicians

## Discussion

The sociodemographic data of the groups did not imply significant differences in the rate of correct answers about legal duty (Table 1) and just cause (Table 2). However, the participants who reported more knowledge about these aspects had more right answers in the analysis of the scenarios presented, showing self-critical coherence between knowledge and information.

As for legal duty, the first three questions addressed the disclosure of cases of self-induced abortion. Between January 2008 and August 2017, Datasus<sup>21</sup> reported nearly two million cases of uterine evacuation and in-hospital post-abortion curettage, performed for various reasons, including possible self-termination of pregnancy. According to the newspaper Folha de S. Paulo, in 2015 a young patient was arrested

due to a physicians breach of professional secrecy<sup>22</sup>, a fact that surprised society and emphasized the importance of further research on the subject.

Articles 123 and 124 of the Penal Code characterize abortion as a crime<sup>10</sup>, but article 66 of the Law on Criminal Misdemeanors<sup>8</sup> prohibits exposing patients to criminal prosecution due to a breach of professional secrecy. This law was corroborated by CFM Resolution 1,605, which forbids the physician to disclose secrecy that poses a risk of criminal prosecution for the patient<sup>15</sup>.

Confidential information should be kept even before the judge if the physician is questioned as required by the Penal Process Code (Article 207)<sup>11</sup>, the Civil Code (Article 229)<sup>12</sup> and the Civil Process Code (Article 448)<sup>13</sup>. Therefore, although medical records should be faithfully made, this study argues that in the first three questions (Table 1) health

professionals should not report the situation to the police or the judge in the event of a statement.

This interpretation extends to minors (question 2) since Article 74 of the CEM confers on them the right to confidentiality provided that they are discerning and considered mature for decision<sup>14</sup>. Assuming that the correct answer was not to break the confidentiality, Group 2 got more right answers, with better performance than Group 3, the difference was significant for the first two questions ( $p < 0,05$ ). However, there was a clear decrease in the total hit ratio from the first to the second question (25.3%), noting that the characterization of the patient as a minor was a factor of doubt.

In 2004, a study was conducted in Ribeirão Preto, São Paulo, on confidentiality in cases of abortion. Fifty-seven resident physicians and gynecology and obstetrics specialists participated, of which 29 (50.9%) mistakenly answered that the physician should report suspected cases of illegal abortion to the police<sup>23</sup>. A lower rate of correct answers than the one obtained in the present research was also found.

However, it is worth remembering that 13 years separate the studies. In the meantime, the study of medical ethics and bioethics has been encouraged in the courses of the area, and the medical councils began to disseminate their guidelines more. This may have contributed to the fact that the physicians participating in the current study had a higher rate of correct answers, although lower than that achieved by the Group 2 students.

Question 5 (Table 1) points to the possibility of the physician being arrested for revealing the diagnosis of an HIV positive patient to unauthorized persons. This aspect is governed by Law 12.984/2014, which characterized the breach of confidentiality in order to offend the dignity of the person living with HIV as a crime punishable by imprisonment from 1 to 4 years, plus a fine 7. By considering that there is indeed a risk of arrest, more participants from Groups 1 and 2 answered this question correctly (58% and 54%, respectively), and physicians (Group 3) had the lowest number of correct answers (37%), i.e., the difference was significant ( $p=0.0031$ ).

As it is a recent law, students in Group 1 may have learned about the subject in a particular course or through the press, thus justifying the higher rate of correct answers, although close to the randomness of the answer (50% between “yes” or “no”). On the other hand, it became apparent that most participating physicians were unaware of the law, with a mistaken opinion on the issue. Therefore,

it is clear that the subject has not yet had the proper repercussion among these professionals.

Question 8 (Table 1) refers to the 16-year-old patient who asked the physician about the loss of virginity. This fact could be framed in breach of confidentiality by legal duty, depending on the degree of discernment of the adolescent. However, according to article 74 of the CEM, *the physician must ensure the confidentiality of the underage with discernment, except when non-disclosure may cause harm to the patient*<sup>14</sup>. Thus, the patient’s age does not justify a breach of confidentiality due to legal duty, and the case presented does not contain elements which justify a fair motive.

Although the correct answers to this question were high in all groups, the highest was in Group 2 (87.6%), almost significant ( $p=0.0624$ ). This result demonstrates the effectiveness of the study of medical ethics during graduation. Still, this knowledge and the fact that the legislation is clear about underage confidentiality was not enough for the answer to be unanimous.

Questions 9, 13 and 14 (Table 1) deal with the legal duty regarding the compulsory notification of domestic violence, as determined by the Ministério da Saúde – MS (Ministry of Health) Consolidation Ordinance 4/2017<sup>16</sup>. In this regard, there is also Article 245 of the ECA, which considers it *an administrative infringement to fail to report abuse to the competent authority*<sup>9</sup>.

Regarding the compulsory notification of injuries (question 9), the members of Group 1 were more correct, and this result was significant ( $p=0.0211$ ). Probably the press discusses the subject a lot, which favors the high rate of correct answers from this group 1 that theoretically would be the least prepared.

Concerning violence against minors and the elderly (questions 13 and 14), there was no significant difference in responses between the groups. There was a slightly lower rate of correct answers in Group 2 of students who had just completed an ethics courses. However, the same questions obtained a better overall hit rate, with subtle variation between the groups. It was evident that it is necessary to emphasize the theme during the course to improve this result.

The breach of confidentiality through WhatsApp was dealt with in question 15, in which case the physician revealed to colleagues the result of a complementary examination with the name of the patient and the other requesting professional. Again, Group 1 was the most correct, with a significant result ( $p=0.0133$ ). Because these students

have not yet had undergraduate ethics subjects, knowledge about confidentiality may have come from other sources, possibly from the press.

According to article 75 of the CEM, the physician cannot mention identifiable clinical cases, conduct that constitutes an ethical violation<sup>14</sup>. To clarify doubts in this regard, the CFM recently published Opinion 14/2017, which reiterates this determination<sup>24</sup>.

In Table 2, questions 4 and 16 refer to breach of fairness when there are people at risk of HIV infection. Preferably, it is up to the patient himself to report his condition to his spouse or identifiable sexual partners, but if for some reason he does not, the physician is responsible for exposing the diagnosis to prevent damage, as well as properly tracking the disease and treating it<sup>25</sup>. Also, each case must be reported to the public authority, as its omission constitutes a crime, as it is a disease of compulsory notification for epidemiological purposes<sup>16</sup>.

In question 4, which alludes to the disclosure of the diagnosis to possible victims of harm, there was a higher percentage of correct answers among students who recently attended ethics subjects, although without statistical significance ( $p=0.1801$ ). However, in question 16, regarding a patient who would not wish to disclose to his wife his HIV-positive condition, there was a significant difference ( $p<0.0001$ ), with Group 2 (73.5%) having the most correct answers, followed by Group 3 (61.4%) and 1 (45%). Because it is a simple question about fair motive, physicians and students who attended ethics disciplines were expected to have a higher response rate than the one obtained. This result indicates that it is necessary to emphasize these themes in teaching and communication with professionals.

In another hypothetical situation, a bus driver with severe visual impairment to the point of preventing him from legally carrying out his duties does not want to disclose his condition. In this context, the physician is obliged to break confidentiality for fair motive, given the imminent risk of harm to third parties (question 6). Again, the second group obtained a higher rate, with a significant result ( $p=0.0432$ ), with emphasis on the knowledge of students who have just completed ethics courses.

As in the previous question, this is a simple case of just cause and more correct answers were expected, especially from Group 3, but 22% of physicians chose the incorrect option. It is noteworthy that this scenario is an example cited in the "Manual of Ethical and Disciplinary Guidance" of the Conselho Regional de Medicina de Santa Catarina – Regional Council of Medicine of Santa

Catarina (Cremesc)<sup>26</sup>. Therefore, this is an aspect that should be discussed further in undergraduate courses and continuing education, to enhance the effectiveness of teaching and coaching.

Question 7, also concerning just cause, involves imminent risk to the life of others: the patient intends to commit homicide. The fact must be reported immediately to the public authority to avoid a tragedy similar to the Tarasoff case – the psychotherapist was convicted for keeping confidentiality of a dangerous patient<sup>27</sup>. Group 2 had more correct answers about this issue ( $p=0.0004$ ), which again values the effectiveness of teaching about confidentiality in ethics subjects. However, even in this easily interpreted example, consecrated worldwide by the Tarasoff case<sup>27</sup>, many physicians (18.1%) were unable to answer correctly.

When there is a suspicion that the patient may worsen when diagnosed with a serious illness (question 10), the professional should wait for the right moment to tell him/her, respecting the principle of non-maleficence recommended by the CEM<sup>14,28</sup>. However, there was no significant difference at this point ( $p=0.9970$ ), nor were there more correct answers from Groups 2 and 3, both with 37% of error, higher than expected, since the subject is addressed in the article 34 of the CEM<sup>14</sup>.

Two cases of past crime confided to the physician during care appear in questions 11 and 12, but the interpretation is complex. The first does not fit the just cause of Penal Code<sup>10</sup>, as there is no risk to third parties; therefore, confidentiality is considered inviolable by the CFM<sup>14</sup> and provided for in the Law of Criminal Misdemeanors<sup>8</sup>. However, in the second situation, where another person has been arrested in place of the culprit, there is just cause for the physician to break confidentiality, according to the interpretation of the authors of this article, based on the current legislation.

In question 11, Group 2 had more correct answers, with a result close to significance ( $p=0.0633$ ). In question 12, although the result was not significant, Group 2, different from what was expected, was the one with the most errors. The difficulty in interpreting this issue may be linked to the complexity of the guidelines of the Law of Criminal Misdemeanors, which vetoes a breach of confidentiality when it may cause a lawsuit against the patient<sup>8</sup>. This determination obeys the Penal Code, which requires characterization of just cause for disclosure<sup>10</sup>, and Resolution CFM 1,605/2000<sup>15</sup>, which prohibits the physician from exposing a crime discovered in the professional sphere.

Figueira and collaborators<sup>29</sup>, in a study with students from the medical school of Marília, São Paulo, concluded that the knowledge on the subject is insufficient, but tends to improve after the ethics courses. The same was identified in many questions of this study, signaling that intuition and common sense are not enough to guide the physician in more complex situations.

The *Universal Declaration on Bioethics and Human Rights* states that information collected, whenever possible, should not be used or disseminated for other purposes<sup>30</sup>. In turn, the *Brazilian Health Users Charter* guarantees the confidentiality of personal data, even after death<sup>31</sup>. And finally, the bibliographic review consulted for this study warns about the lack of publications on the subject and points out possible confidentiality breach failures in some health services<sup>32</sup>.

## Final considerations

The present study evaluated the perceptions of Unesco medical students and physicians of the Santa Catarina Midwest about the breach of confidentiality for fair motive and legal duty. The guiding questionnaire of our study was based on the following themes: self-induced abortion, past crime, judicial testimony, minors, the worsening of

the clinical condition resulting from the news of the diagnosis, risk of harm to third parties, violence, and use of WhatsApp.

Group 2, medical students who attended the two ethics disciplines offered in the course, was the most successful in 9 out of 16 questions, well above physicians (Group 3). The latter presented higher rates of correct answers than the other groups only in three questions, all without statistical significance. This discrepancy signals the effectiveness of the disciplines during undergraduate studies and the need to disseminate the subject among health professionals, both in congresses and scientific journals and in the guidelines of the Medical Councils.

Group 1, students who had not attended ethics courses, was the one that had more correct answers for two questions about violence and WhatsApp. This data suggests that undergraduate school should broaden the approach of these contemporary changes that, with globalization, permeate the exercise of the medical profession and demand ethical zeal in the new social media.

The study has its limitations for including participants from only one medical school and physicians from the respective micro-region. Thus, further research with broader samples is recommended, comparing the knowledge on physician confidentiality of students from different medical schools and professionals from other regions.

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#### Participation of the authors

Kevin Timm Lütz collected the data. Diego de Carvalho was responsible for the statistical analysis. All authors contributed to the study design, data analysis, discussion and final writing of the article.

Kevin Timm Lütz

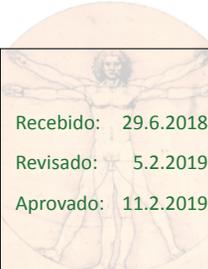
 0000-0001-8991-683X

Diego de Carvalho

 0000-0002-0059-4350

Elcio Luiz Bonamigo

 0000-0002-0226-7070



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## Annex

### 1. Sociodemographic questionnaire for medical students

Age: \_\_\_\_\_

Gender: ( ) Male ( ) Female

Year of graduation: \_\_\_\_\_

School/Period you are in: \_\_\_\_\_

Completed elementary school at: ( ) public school ( ) private school

Completed High School at: ( ) public school ( ) private school

Pre-college preparatory course: ( ) no ( ) yes. How long? \_\_\_\_\_

Previous college course: ( ) no ( ) yes. Which? \_\_\_\_\_

Medical specialty (or intended in the future): \_\_\_\_\_

A) Mother's education level:

( ) Missing or incomplete elementary school

( ) Graduated elementary school

( ) Graduated high school

( ) Graduated higher education completed. Area of training: \_\_\_\_\_

( ) Specialization. Area of training: \_\_\_\_\_

( ) Postgraduate studies. Area of training: \_\_\_\_\_

( ) Master's degree. Area of training: \_\_\_\_\_

( ) Doctorate degree. Area of training: \_\_\_\_\_

( ) Post doctoral. Area of training: \_\_\_\_\_

B) Father's education level:

( ) Missing or incomplete elementary school

( ) Graduated elementary school

( ) Graduated high school

( ) Graduated higher education completed. Area of training: \_\_\_\_\_

( ) Specialization. Area of training: \_\_\_\_\_

( ) Postgraduate studies. Area of training: \_\_\_\_\_

( ) Master's degree. Area of training: \_\_\_\_\_

( ) Doctorate degree. Area of training: \_\_\_\_\_

( ) Post doctoral. Area of training: \_\_\_\_\_

### 2. Sociodemographic questionnaire for physicians

Age: \_\_\_\_\_ years

Gender: ( ) Male ( ) Female

Year of graduation: \_\_\_\_\_

University of graduation: \_\_\_\_\_

Previous university course: ( ) No ( ) Yes. Which? \_\_\_\_\_

Medical Specialty: \_\_\_\_\_ ( ) I have no specialty.

### 3. Clinical scenarios about medical secrecy: questions for medical students and physicians.

Have you studied Medical Ethics? ( ) Yes ( ) No

Are you aware of the meaning of "fair motive" or "fair cause"?

( ) Fully knows ( ) Partially knows ( ) Does not know

Are you aware of the meaning of "legal duty"?

( ) Fully knows ( ) Partially knows ( ) Does not know

Prior to practicing patient care, were you instructed on medical confidentiality?

( ) Yes ( ) No

4. In the confidentiality questions listed in the following table, read the statement and answer whether in the briefly described case, the physician must/may (“Yes”) or must not/may not (“No”) break professional secrecy.

| Description of the event related to professional secrecy   | Yes | No |
|--|-----|----|
| 1. A 25-year-old woman self-induces abortion. During the hospital treatment of the uterine bleeding resulting from the act, she said that she was responsible for it. Should health care professionals report the fact to the public authority?  |     |    |
| 2. A lucid 16-year-old teenager self-induced abortion. During hospital care of the uterine bleeding resulting from the act, she said that she caused it herself. Because she is a minor, should health professionals who attend her report this to the public authority?   |     |    |
| 3. A judge, during testimony, asks the physician if the patient self-induced abortion. During the treatment, the woman told the physician that she had done so, and the hospital staff reported her to the police, although the patient did not allow anyone to expose this information. Is the physician obliged to disclose it because it is a statement before the judge?   |     |    |
| 4. A patient tells the health professional that he/she omits any sexual partners that he/she lives with HIV and does not want to change this behavior. Should the practitioner disclose the fact to the public authority and, if possible, to the persons involved?  |     |    |
| 5. A patient legally denounces a physician who broke confidentiality about his/her HIV positive status to unauthorized persons. Can the physician be arrested for this fact?   |     |    |
| 6. The physician notes that a bus driver has low vision acuity (outside the allowed parameters). Should they breach confidentiality by informing the company of this fact against the employee's wishes?   |     |    |
| 7. A patient tells the psychiatrist that he is going to kill his ex-girlfriend in the coming days. Should the physician break confidentiality and immediately report it to the public authority?   |     |    |
| 8. When the patient is treated for a knife or firearm injury, should the attending health professionals notify the public authority?   |     |    |
| 9. After consulting with her 16-year-old daughter, the mother asks the physician to confirm that the teenager is a virgin. The daughter asked for secrecy. Because it is a minor, can/should the physician reveal the information?   |     |    |
| 10. It is suspected that the patient will get worse if, at that moment, the diagnosis of his/her serious illness is revealed to him. Should the physician report the diagnosis anyway?   |     |    |
| 11. A patient confides to the psychiatrist that he/she is depressed for causing accident deaths in the past, but was not discovered because he/she fled and does not want to be revealed. After the consultation, should the professional communicate the fact to the public authority?  |     |    |
| 12. A man reports to the physician that he has committed murder in the past and another person is imprisoned in his place. Is it for the physician to inform the public authority of the fact?   |     |    |
| 13. Underage patient is treated for suspected abuse. Should health professionals inform the public authority?  |     |    |
| 14. An 87-year-old woman is treated at a geriatric outpatient clinic. There are limb abrasions and trunk hematomas. The patient denies having suffered falls. As there is a consistent suspicion of maltreatment, should the physician notify the public authority?  |     |    |
| 15. A gynecologist who performs complementary examinations for the Unified Health System (SUS) observes a gross error examination request from a professional in the “Mais médicos” program and discloses an identifiable copy of the request to his WhatsApp group. Did the physician breach confidentiality?   |     |    |
| 16. A 27-year-old bricklayer, married, with three healthy children, attends the infectious disease outpatient clinic with complaints of weight loss and oral candidiasis. HIV serology is performed, with a positive result. The patient does not intend to disclose this fact to his wife since he has extramarital affairs and does not want her to know about it, as she would abandon him. Should the physician reveal the fact to the patient's wife? |     |    |