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Ana Rita da Silva Ribeiro

**Ethical Aspects of Medical
Education in Portugal: a Student
National Perspective**

FEVEREIRO, 2024

FMUP

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Education in Portugal: a Student
National Perspective**

Mestrado Integrado em Medicina

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Professora Doutora Ivone Duarte

E sob a Coorientação de:
Professora Doutora Cristina Santos

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FMUP

Eu, Ana Rita da Silva Ribeiro, abaixo assinado, nº mecanográfico 201807535, estudante do 6º ano do Ciclo de Estudos Integrado em Medicina, na Faculdade de Medicina da Universidade do Porto, declaro ter actuado com absoluta integridade na elaboração do meu trabalho de Dissertação ou Monografia.

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DESIGNAÇÃO DA ÁREA DO PROJECTO

Ciências Médicas e da Saúde

TÍTULO DISSERTAÇÃO/MONOGRAFIA (indicar o que não interessa)

Ethical Aspects of Medical Education in Portugal: a Student National Perspective

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Professora Doutora Ivone Duarte

COORDENADOR (se aplicável)

Professora Doutora Cristina Santos

ASSINALE APENAS UMA DAS OPÇÕES:

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DE ACORDO COM A LEGISLAÇÃO EM VIGOR, (INDICAR, CASO TAL SEJA NECESSÁRIO, Nº MÁXIMO DE PÁGINAS, ILUSTRAÇÕES, GRÁFICOS, ETC.) NÃO É PERMITIDA A REPRODUÇÃO DE QUALQUER PARTE DESTES TRABALHOS.	☒

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Eu, Ana Rita da Silva Ribeiro, abaixo assinado, nº mecanográfico 201807535, estudante do 6º ano do Ciclo de Estudos Integrado em Medicina, na Faculdade de Medicina da Universidade do Porto, declaro que:

- ☒ Não procedi à utilização de ferramentas de *chatbox* generativo baseadas em *large language models* para nenhuma das tarefas no contexto do meu trabalho de Dissertação ou Monografia
- ☐ Procedi à utilização de ferramentas de *chatbox* generativo baseadas em *large language models* no contexto do meu trabalho de Dissertação ou Monografia, encontrando-se todas as interações (*prompts* e respostas) transcritas em anexo bem como a indicação das aplicações utilizadas.

Neste sentido, confirmo que a eventual utilização de ferramentas de *chatbox* generativo baseadas em *large language models* no contexto do meu trabalho de Dissertação ou Monografia foi exclusivamente descrita na sequência de *prompts* e respostas transcritos em anexo e nas aplicações indicadas.

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Ana Rita da Silva Ribeiro

A jornada académica na Faculdade de Medicina da Universidade do Porto compreendeu, para mim, a oportunidade de crescimento e de desafio em múltiplos domínios. Um destes diz respeito ao (re)conhecimento da importância que a identificação das problemáticas e respetivas soluções tem na potenciação da nossa participação cívica. De forma concordante com isto, a ética médica, diretamente aplicada na formação médica, constitui-se como um pilar fundamental da nossa atuação e forma de estar – na totalidade da prática clínica que exercemos.

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A todos aqueles que partilharam vivências e experiências nestes seis anos volvidos – fazem parte do mosaico que sou.

Ethical Aspects of Medical Education in Portugal: a Student National Perspective.

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ABSTRACT

Background | Clinical medical teaching is crucial for the comprehensive training of healthcare professionals. However, it often raises ethical concerns as it involves real patients and their health information. This study aims to explore the importance of informed consent in medical education as perceived by students enrolled in Portuguese Public Medical Schools. It specifically examines differences across different clinical curricular years (fourth, fifth, and sixth of the Integrated Master's Degree in Medicine) and their perspectives regarding the ethical aspects of their participation in clinical medical education nationally.

Methods | A cross-sectional study was conducted through an online questionnaire given to Public Portuguese Medical Schools students. The questionnaire addressed issues such as the request for consent, the format of students' presentations to patients, the patients' discomfort, and aspects related to patient management, secrecy, and confidentiality. Statistical analysis was conducted using the Statistical Package for Social Sciences (SPSS), with a significance threshold set at a p-value of less than 0.05.

Results | The results showed that only a minority of instructors consistently solicit patient consent for student inclusion in medical encounters and often do so in the immediate presence of medical students. A substantial proportion (68%) of students reported perceiving discomfort on the patient's side. Additionally, 59% of students considered medical training in clinical settings to be adequate, while 37% deemed it inadequate, indicating a disparity.

Conclusion | The study concludes that the consent request for the presence of students in the healthcare setting

is not fully accomplished. To promote ethical standards in future medical practice, informed consent should be integrated into medical education in a structured, time and context-appropriate way. Prioritizing informed consent education can foster patient-centered care, equipping future healthcare providers with the necessary knowledge and skills and contributing to patients' empowerment.

KEYWORDS

Preceptorship; Medical Students; Informed Consent; Ethics

BACKGROUND

Medical Clinical teaching assumes an important role in the complete training of a health professional, by the fulfillment of technical-scientific and humanistic objectives. This integration in the hospital environment provides an opportunity for theoretical consolidation through practical demonstration, in addition to ensuring an appropriate context and "real life" experiences with obvious added value residing in a view of the disease from the professional and patient perspective (Koehler, 2012). In addition, clinical teaching in a professional setting has assumed a key role in the education of medical professionals in recent years, as emphasized by the World Federation for Medical Education in its Global Standards for Quality Improvement for Postgrad Medical Education. However, the presence of students in the different domains of clinical practice, although essential in their training, is not an integral part of medical care.

It is recognized that medical practice has a fourfold function of improving the health of populations, the patient experience, the well-being of the team of health professionals, and reducing costs (P., 2020). The inclusion of students in a clinical environment, particularly in terms of a University Hospital, often imposes the notion on health professionals and medical students that there is an ethical obligation for patients to participate in medical education (Lowe, 2008) (Omid, 2015). This is reflected in the use of arguments in the sense of guaranteeing the benefit of others; the inability to maintain clinical medical training without the participation of patients; the notion that participation in medical education allows for a benefit beyond individual care; and the argument that the enjoyment of the health system should be reflected in our contribution to it. (Lowe, 2008). In Portugal, between 2009 and 2017, eight Clinical Academic Centers were created as structures that integrate care, teaching, and research activities, which associate health care units, higher education institutions, and/or public or private research institutions. Decree-Law No. 61/2018 defines the Clinical Academic Centres and lays the foundations for University Hospitals that are monitored based on indicators, namely of education and training, but also of the provision of patient-centered, high-quality healthcare. It should be noted, however, that medical training also takes place in affiliated hospitals whose nomenclature does not include the term university, and it is plausible that patients do not recognize in advance the student involvement in the provision of care.

Studies report an erosion of the ethical sense of medical students over the years, with repercussions on the importance attributed, contrary to the desire expressed by patients, to the presentation of their identities. In addition, medical students who have already undergone clinical rotation expectations seemed further from what the patient expected in comparison to the ones who attended the pre-clinical cycle of the study cycle. (Silver-Isenstadt A, 1999). According to the ethical principles established in ethics and medical education, respect for the patient's autonomy and the requirement of free consent are an integral part of these.

The principle of autonomy in medical ethics underscores the importance of respecting individuals' ability to make informed and independent decisions regarding their health and medical treatments. This principle emphasizes that patients have the right to receive clear and understandable information, enabling them to give or refuse informed consent for medical procedures or participation in research. (Beauchamp, 2019)

Based on the notion that patients are rational agents capable of comprehending relevant information about their health condition, proposed procedures, and the potential implications of their choices, the autonomy principle recognizes the significance of considering the individual perspective. Respecting autonomy entails not only providing adequate information but also acknowledging and valuing the decisions made by patients regarding their health. This approach forms the foundation of the ethical relationship between healthcare professionals and patients, promoting respect for individual rights and dignity in medical practice.

Recognizing the extent and continuity of medical education in terms of clinical practice, free and informed consent, and the confidentiality of care provided must be clarified, with the notion that recognition and respect for patients' autonomy make them more likely to participate in medical education. Patients may have a lack of knowledge when it comes to their autonomy, which means their ability to make informed decisions about their own health and medical treatment. In previous studies, it was possible to carry out a questionnaire to medical students who scored worse in knowledge about choice and information, namely about questions of concern about the gender of the medical student who is examining the patient; the patient's right to accept or reject the examination performed by the medical student; the patient's need to know the student's level of experience before the examination; and the patient's knowledge that he or she is being examined by a medical student and not a doctor. In addition, this study revealed that medical students have a poor understanding of how the presentation format should be made to patients (Omid, 2015).

Despite this, most studies (York NL, 1995) (Hartz MB, 2000) (Lynøe, 465–471) (Moreira BF, 2023 Apr 28) (Gil-Santos I, 2022 Jun 22) demonstrate positive attitudes toward the involvement of students in the provision of care, including the importance of medical training combined with clinical practice in real contexts. It is stated that the number of patients who are voluntary and available to participate in medical education would increase if information were given on the procedures that can be performed by a medical student.

Thus, and by the above, the patient's explicit authorization to participate in the student learning process is required, with the fact that the student's participation in the medical care provided may be denied at any time (Lynøe, 465–471). The principle of autonomy is essential to provide patient-centered care. It ensures that medical practice, including medical training in a clinical environment, adheres to a moral structure and ethical principles. The principle of autonomy is also relevant in discussions about confidentiality and privacy. The Code of Ethics for Medical Students

of the Portuguese Medical Students Committee defines, as a recommendation, the duty of the student to respect the patient in the exercise of their autonomy, with a guarantee of their privacy and confidentiality. (PorMSIC, 2022) Considering student-patient interactions as based on the Code of Ethics for Medical Students, this study aims to evaluate, in Portugal, the perspectives of students regarding the ethical aspects of their participation in clinical medical education. As a secondary objective, we propose to evaluate the differences between the different clinical curricular years (fourth, fifth, and sixth of the Integrated Master's Degree in Medicine).

METHODS

STUDY DESIGNS AND PARTICIPANTS

This cross-sectional study included students from the fourth, fifth and sixth years enrolled in the academic year 2021/2022 and 2022/2023 in the Integrated Master's Degree in Medicine of the following Portuguese public medical schools: Faculty of Medicine of the University of Porto, Abel Salazar Institute of Biomedical Sciences – University of Porto, School of Medicine of the University of Minho, Faculty of Medicine of the University of Coimbra, Faculty of Health Sciences of the University of Beira Interior, Faculty of Medicine of the University of Lisbon and NOVA Medical School – Faculty of Medical Sciences. The Faculty of Medicine and Biomedical Sciences of the University of Algarve was not included due to its curriculum and student differences – all of these have previous degrees which may alter their perception and attitudes during the clinical clerkship.

DATA COLLECTION

Data was collected through an *online* questionnaire between August 2022 and November 2022. The form for collecting web data was distributed via the different medical schools' official websites and on social media platforms such as Facebook, Instagram, and LinkedIn. This distribution adhered to the principles outlined in the Declaration of Helsinki. All participants provided their informed consent online, with mandatory acceptance required. Upon accessing the provided link, participants were presented with an introduction detailing the study's objectives, the duration of data collection, and assurances of anonymity and confidentiality. The data was collected and processed under the regulations imposed by the General Data Protection Regulation.

The questionnaire was divided into two sections - the first on sociodemographic data and the second on questions about student participation in the consultation. The first part allowed the characterization of the sample where the participant's gender, age, curricular year, and faculty were collected. In the second section, we explore the request for consent for the presence of students (its execution, the circumstances, and the moment - in the presence or absence of students - in which this occurs) and then how the students are introduced to the patient, by the tutor (medical students - with or without identification of the curricular year; colleagues; other). We also questioned the

number of students present at the consultation and the level of discomfort felt by patients, from the perspective of the students. Additionally, we have examined the attitude of the students towards the discomfort perceived, as well as the contextual characterization of the discomfort, specifically in consultation, hospitalization, and emergency services. We also included questions from the point of view of patient management, namely about the discussion of technical terms between the student and the tutor, in the presence of the patient; the disclosure of the diagnosis and/or prognosis by the student, without the presence of the tutor; performing a clinical procedure without the presence of the tutor; and the information provided regarding the procedure to be carried out. We also investigated the topic of secrecy and confidentiality, including the discussion of clinical cases, based on real patients, in public spaces, as well as the active effort to maintain anonymity. Finally, we investigated issues mainly in the field of medical education, namely the pedagogical impact of the dynamics of the consultation; and the inclusion of the National Code of Ethics for Medical Students in the curriculum. (PorMSIC, 2022)

STATISTICAL ANALYSIS

A database was established using the collected responses, and data analysis was conducted using the Statistical Package for Social Sciences. Statistical significance was determined with a threshold set at a p-value of less than 0.05. Answers to open-ended questions were classified and coded and some ordinal categorical variables with categories with low frequency were recorded accordingly as shown in the respective tables.

As the proportion of students per medical school in the sample was different from the proportion of students per medical school in the population, the sample was weighed to improve its representativeness. Thus, the estimates of the proportions of each response and their respective 95% confidence intervals are adjusted for these weights. Chi-square tests were used to compare the proportions of the answers per curricular year of the student, considering the weights explained before. To compare the level of discomfort between different spatial contexts (consultation versus hospitalization, consultation versus emergency services, and hospitalization versus emergency service), McNemar tests with Bonferroni adjustment for multiple comparisons were used.

RESULTS

A total of 365 students responded to the survey and no missing data was found. The median age was 22 years and the interquartile range was 21-24 years, with the youngest student being 19 years old and the oldest being 48 years old. Most of the students who responded were female (80%) and in the fourth curricular year (47%), with 29% in the fifth curricular year and 24% in the sixth curricular year. 42% of the students who responded studied in the Faculty of Medicine of the University of Porto, 12% in the School of Medicine of the University of Minho, 11% in the Faculty of Medical Sciences | Nova Medical School, 10% in the Abel Salazar Institute of Biomedical Sciences

of the University of Porto, 9% in the Faculty of Medicine of the University of Lisbon, 9% in the Faculty of Health Sciences of the University of Beira Interior and 7% in the Faculty of Medicine of the University of Coimbra.

Of the 365 students who answered the questionnaire, only 28% report that tutors always ask the patient for consent to be in the presence of students, as shown in Table 1.

Among those who report that consent is not always requested, the majority (44%) report that there is no special context that conditions the absence of a request, although the patient's spatial circumstances and other reasons are reported, as shown in Table 1.

When consent is requested, 306 (84%) of the students report that it was given in their presence, with only 14% doing so in their absence, as shown in Table 1.

Table 1

	TOTAL % [95%CI]	Year 4 %	Year 5 %	Year 6 %	p
Their guardians always ask for the patient's consent to be in the presence of students	28 [22,34]	27	29	29	0.919
When guardians ask for consent, they do so:					0.393
in the presence of students	84 [78,88]	81	88	85	
in the absence of students	14 [10,19]	18	11	11	
never ask	2 [1,5]	2	1	4	
When guardians do not ask for consent, the circumstance is:					0.117
Arising from only one spatial context *	14 [9,20]	14	18	8	
Multiple Spatial Contexts **	16 [11,21]	21	8	15	
Dependent on the tutor	13 [9,20]	13	8	22	
Dependent on the patient	3 [1,6]	4	1	3	
Other reasons (include forgetfulness)	10 [6,16]	9	8	16	
No specific context	44 [37,52]	39	58	34	

Percentage of responses and respective confidence intervals regarding the request for consent and circumstances of its execution and non-execution. Total results and by curricular year. As the proportion of students per school was different in the sample and the population, the sample was weighed. Thus, the estimates of the proportions of each response and their respective confidence intervals are adjusted for these weights.

* Includes single mention of the term "consultation" or single mention of the terms "urgency"/"emergency department"/"ED" or "inpatient"/"ward" or "surgery"; **Includes mention of two or more spatial contexts according to those indicated above

No differences were found among the curricular years regarding the percentage of responses of the request for consent and the circumstances of its implementation and non-implementation.

More than a third of the students (35%) report that their tutors always introduce the students to the patient, and of these, in only 11.3% of the cases are they presented, in most cases, as colleagues; most of them were presented as students, identifying the curricular year in 39% of the cases and not identifying it in 49.4% of the cases (Table 2). Some students (0.3%) report that they are presented in various ways, including almost colleagues/future colleagues, or by the student's name. On the other hand, and considering the students who affirm that their tutors do not always introduce the students to the patients, the majority (61%) do not present any specific context as an explanation for this (Table 2). It should also be noted that when various reasons are mentioned (12% of cases),

forgetfulness is highlighted, as well as the student's curricular year – in the sixth year, the presentation format differs from the previous ones in a colleague-like manner.

Significant differences among the curricular years were found in the way tutors who always introduce students to the patient refer to students most of the time ($p=0.007$). Students in the fourth year are commonly referred to as students without specifying the year, while those in the fifth and sixth year are usually identified by their academic year. Tutors introduce fourth graders as colleagues only 8% of the time, while fifth and sixth graders are already presented in this way at a higher percentage of times, 17% and 14% of the time respectively.

Table 2

	TOTAL % [95%CI]	Year 4 %	Year 5 %	Year 6 %	p
Tutors always introduce students to the patient	35 [29,42]	40	25	40	0.077
Tutors who always introduce students to the patient, and refer to students, most of the time:					0.007
As colleagues	11 [7,19]	8	17	14	
As students, identifying the curricular year	39 [29,50]	24	63	50	
As students, not identify the curricular year	4 [39,60]	68	20	35	
Otherwise	0.3 [0,2]	0	0	1	
When tutors do not always introduce students to the patient, the circumstances is:					0.744
Just a spatial context *	8 [4,14]	9	8	6	
Multiple Spatial Contexts **	10 [6,15]	10	8	12	
Tutor-dependent context	8 [4,14]	11	3	9	
Patient-dependent context	1 [0,7]	3	0	1	
Other reasons (include forgetfulness)	12 [7,17]	13	11	10	
No specific context	61 [54,69]	54	70	62	

Percentage of responses and respective confidence intervals regarding the presentation of students to tutors. Total results and by curricular year. As the proportion of students per school was different in the sample and the population, the sample was weighed. Thus, the estimates of the proportions of each response and their respective confidence intervals are adjusted for these weights.

* Includes single mention of the term "consultation" or single mention of the terms "urgency"/"emergency department"/"ED" or "inpatient"/"ward" or "surgery"; **Includes mention of two or more spatial contexts according to those indicated above

Regarding the number of students present in the consultation context, on average, 87% of the students report 1-4 students, representing a minority of students who present an average higher than this (13%), as indicated in *Table 3*. About the number of students present, students report a low level of discomfort on the part of the patient in 46% of cases and a moderate level of discomfort in 43% (*Table 3*).

Regardless of the number of students and the spatial context, the majority of students (68%) reported the perception of discomfort on the part of the patient with their presence, and this was communicated to the tutor in 21% of the cases. Of the students who reported it to the tutor, the attitude of the tutor was different and exemplified in *Table 3*, and it should be noted that 44% asked the students to leave or put an end to the procedure performed by the student at the time.

There were significant differences among the curricular years in the number of average students per visit reported by the students ($p=0.024$). In fact, 1-2 students per consultation on average was reported by more than three-quarters of sixth graders, and in fourth and fifth grade, this average number of pupils per poll is reported by less than half of the learners.

No significant differences were found between the curricular years in the degree of discomfort that students say they feel about the number of students present either in the consultation ($p=0.083$), in hospitalization ($P=0.397$), or the emergency department ($p=0.630$).

Table 3

	TOTAL % [95%CI]	Year 4 %	Year 5 %	Year 6 %	p
The number of students per consultation on average reported					0.024
1-2	54 [48,60]	48	48	78	
3-4	32 [26,38]	33	38	17	
5-6	9 [6,14]	12	8	5	
>6	5 [3,9]	7	6	0	
Have you ever felt the patient uncomfortable with the presence of the students?	68 [62,74]	64	74	68	0.359
Considering the students who felt discomfort with the patient, they communicated the discomfort to the tutor	21 [15,28]	19	23	24	0.779
Considering the students who felt discomfort with the patient and communicated it to the tutor, the tutor's attitude was:					0.197
He asked the students to leave or finish the procedure that the student was performing	44 [28,62]	59	25	49	
The tutor maintained the student's observation/procedure	19 [9,37]	18	22	16	
The tutor questioned the patient about the discomfort	9 [4,21]	2	0	23	
Tutor took another action *	22 [9,43]	17	41	0	

Percentage and 95% confidence interval (95%CI), total and by curricular year, of students who report a certain number of students in the context of consultation; who report perceived discomfort of the patient about the number of students and who report perceived discomfort of the patient regardless of the context.

* Includes autonomy of the student for decision-making - by decision of the tutor or the student; Includes division of the student group between tutors

Significant differences were found in the degree of discomfort about the number of students present reported by the students between the consultation and hospitalization spaces ($p=0.012$), between the consultation spaces and the emergency service ($p<0.001$) and between the hospitalization and emergency service spaces ($p<0.001$). It is in hospitalization where a moderate or high degree of discomfort is most frequently reported, and it is in the emergency department where a moderate or high degree of discomfort is reported less frequently.

Table 4

How uncomfortable do you feel with the number of students present?	Consultation %	Relocation %	Emergency department %
None	11	12	17
Low	45	36	52
Moderate	35	37	24
High	9	15	7

Percentage of students who say they feel each degree of discomfort compared to the number of students present at the consultation, hospitalization, and emergency department.

Regarding patient management, the vast majority of students (84%) have discussed with their tutors in technical terms in the presence of patients or often have discussed with their tutors. When this happens, the majority (72%) of the students report that this information is usually explained to the patient, although it does not happen in 15% of the cases (Table 5¹). The disclosure of a patient's diagnosis/prognosis to the patient without the presence of the tutor was also explored, and this occurred in a minority of the responses (1%). In addition, regarding the need for help in carrying out a clinical procedure, in the absence of a tutor, 52% of the answers reveal that "It has already happened", although 48% say that "Never" has happened. There are significant differences between the curricular years in the percentage of students who report having already needed help for some clinical procedure in the presence of a tutor ($p=0.001$). In fact, in the fourth and fifth grades, about half of the students report that this has never happened, however, in the sixth-year students only 28% (just over a quarter of the students) report that it has never happened.

The vast majority of students (77%) inform the patient about the procedure they are going to apply, explaining its purpose and clarifying doubts.

The vast majority of students (94%) have already commented with colleagues on a clinical case in public places (e.g., cafeteria, elevator, hallway). However, of those who have done so (97%) often make an active effort to maintain patient anonymity (Table 6).

39% of the students consider that the dynamics of the consultation, under the current conditions, are not at all adequate or are not very adequate for the acquisition of skills that the students are supposed to acquire (Table 6). The main limitations related to the period allocated to teaching, infrastructural conditions, excessive number of students, tutor characteristics, and conditions of lack of student autonomy (e.g., excessive observational practice and lack of understanding of their role in the consultation) are the main limitations. Finally, the majority of students (54%) are aware of the National Code of Ethics for Medical Students. (PorMSIC, 2022)

No significant differences were found between the students' curricular years and the percentage of responses about confidentiality, pedagogical conditions, and knowledge of the National Code of Ethics for Medical Students. (PorMSIC, 2022)

Table 6

	%	TOTAL 95% CI	Year 4 %	Year 5 %	Year 6 %	p
Have you already commented with colleagues on a clinical case in public places (e.g. cafeteria, elevator, corridor)	94	[91,97]	93	99	90	0.051
To what degree do you consider that the dynamics of consultation, under current conditions, is appropriate to the acquisition of skills that students are supposed to acquire:						0.181
Nothing suitable	2	[1,4]	1	4	1	

¹ To be made available at the end of the document considering its length.

Not very suitable	37	[31,44]	31	43	43
Quite suitable	59	[52,65]	65	51	55
Fully Fit	2	[1,4]	3	2	1

Learn about the National Code of Ethics for Medical Students	54	[48,60]	55	48	61	0.335
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Percentage of students' responses and respective confidence intervals (CI) about confidentiality, pedagogical conditions, and knowledge of the National Code of Ethics for Medical Students. Total results and by curricular year of the students.

DISCUSSION

The integration of medical students, in their clinical cycle, in a hospital environment is also a moment of insertion in the health care provided to patients. In this way, ethical issues are raised, namely from the point of view of consent and confidentiality, but also of a pedagogical nature, which are interconnected. The student perspective ensures the understanding of these problems, with the ability to change the established dynamics.

The Codes of Conduct (or equivalent) of the different medical schools addressed in this study allow us to understand that students are under a set of rules defined at the level of the University and, in some cases, at the level of the Medical School. However, the reference to the conduct that a student should assume in a clinical context does not exist transversally. The National Code of Ethics for Medical Students, established by the Portuguese Medical Students' International Committee, sets out a framework of ethical responsibilities and limitations for all medical students. The code delineates the medical student's relationship with the patient as well as their interactions with the healthcare team. (PorMSIC, 2022) Additionally, it guides obtaining free and informed consent and emphasizes the importance of medical confidentiality and patient privacy. It intends, therefore, to provide pedagogically and ethically viable clinical teaching.

According to previous studies (Lowe, 2008) (Omid, 2015), in which there is an assumption that clinical teaching in a University Hospital is sufficient for the assumed consent of the patients, a small percentage of tutors always ask for consent from the patient and, when they do, most do so in the presence of the students. These data are important from the point of view of the patient's autonomy and decision-making capacity, which are potentially diminished and biased by the presence of students. The reasons for the absence of a consent request are diverse, with the results suggesting that there is no specific context for this to happen. The presentation format is adequate, in most cases, with the presentation of students as such to patients, although without identification of the curricular year in most cases (49%). Previous studies report that patients want information about this, including procedures that can be performed by some to the detriment of others (Pallin DJ, 2008). It should be noted, regarding these results, that the absence of a request for consent is also due, from the student's perspective to reasons of forgetfulness on the part of the tutor and that the presentation format, with the use of terms such as "colleague" tends to happen more with the advancement of the clinical cycle, specifically in the sixth curricular year (professional, in the Portuguese Medical Schools). In fact, in our study, the comparison of curricular years showed

that, in most cases, fourth-year students are presented as students, without identification of the curricular year, unlike what happens with students in the fifth and sixth curricular years. Some literature shows different attitudes of patients toward older students, compared to younger students, mostly for procedures and evaluations perceived as more invasive. They also suggest greater receptivity in the provision of care if there is a sense of integration in the medical team. This opinion stems from the assumption that a higher curricular year presupposes a higher level of competence (for example, in terms of the number of repetitions of the same procedure, but also in terms of the greater probability that the patient in question will not be the first to be evaluated by this student), identifying a low knowledge on the part of patients regarding the hierarchical structure of medical training. (AlMahmoud T, 2018)(Koehler, 2012) (Glasser M, 1985). On the other hand, students and tutors also have the perception that the acceptance of students will be lower if there is a reference to their curricular year, which is compatible with the results presented.

The medical training and the required skills progress with the curricular advancement, moving from a mainly observational involvement to the assumption of a higher range of skills, such as the monitoring of the patient and the involvement in the therapeutic decision of the same, under the supervision of the tutor. There is, however, an inability to fully understand the role of the student (by the student, tutor, and patient), an essential factor so that the student does not exceed his or her competencies in each clinical clerkship. The National Code of Ethics for Medical Students defines that the student should not exceed what are his/her competencies in each clinical internship, however, there is no clear distinction between each curricular year's competencies. (PorMSIC, 2022) From the curricular comparison and evaluation methodologies of the different Medical Schools evaluated in this questionnaire, it is possible to understand that clinical teaching based on competencies (which must be acquired, through its observation or execution, at each clinical stage) is not transversal and, if so, is not applied with effective knowledge of the tutorials in all Curricular Units. From this, it can be inferred that there is no structuring of this information for the student or teacher and, consequently, for the patient.

Establishing the basis of care delivery in patient autonomy, there is an ethical and legal right to be informed about who, how, and why an individual is involved in care. Clinicians have an ethical and legal duty to ensure that patients are fully informed about these aspects, including the purpose of student engagement, according to this learning model (P., 2020) (Gil-Santos I, 2022 Jun 22) (Moreira BF, 2023 Apr 28). There is therefore a need to ensure that this is a structured process (including in the *timing* and format), widely disseminated and consensual and that does not allow itself to be dropped by constraints, including circumstantial ones.

Regarding patient management, the vast majority of students report that they explain the procedure (including its purpose and any doubts on the part of the patient), and it should be noted as positive and potentially consequential to the understanding of the importance of patient empowerment. On the other hand, it is important to highlight

that clinical medical education presupposes that tutoring is a guarantee, including for the performance of procedures. The existence of 52% of students who demonstrate the need for help for clinical procedures without the presence of a tutor at some point, increases with the progression of the curricular year, with a large majority taking place in the sixth curricular year. The right to acquire skills should not take precedence over the right to choice and information, and, while ensuring patient autonomy, learning clinical procedures should be adequately supervised at all times.

Each medical student must exercise his/her function by the Fundamental Ethical Principles, having the duty to recognize them and to serve the sick person, understanding, at all times, the rights of the latter and privileging a space of privacy and confidentiality. Recognizing that a high student-to-tutor ratio is reflected in a high student-to-patient ratio and that this constitutes a factor of discomfort for the patient, impairing the valuation of the moral and ethical values mentioned above, the number of students, on average, present in the context of the consultation, was analyzed. These data should be analyzed cautiously, given the limitations in the number of responses, which are not entirely in line with the quantitative data previously obtained regarding the student-tutor ratios in Portuguese Medical Schools (Menezes, 2020) (Maria do Mar Costa, 2020) (Grilo Diogo, 2016). It is important to highlight the perception of the patient's discomfort by the vast majority of students and, analyzing this discomfort in spatial terms (*Table 3*) (context of consultation, hospitalization, or emergency service), we were able to understand that there are statistically significant differences in the degree of discomfort perceived between the various spaces. It is in hospitalization where a moderate or high degree of discomfort is most frequently reported, and it is in the emergency department where a moderate or high degree of discomfort is reported less frequently. The reporting of this discomfort to the tutor - primarily responsible for the relationship established and care provided to the patient (but also for the teaching process) - happens in a minority of situations. Cause(s) should be understood and pedagogical strategies redefined if possible.

Language is a central part of the relational and communicational process between a doctor and patient, and medical terminology is typically complex. Within the context of health, words take on specific and clinically unique meanings. Patients often have difficulty in understanding these terms and this has implications for the understanding of the diagnosis and therapy instituted, constituting a barrier. The process of medical learning in a clinical environment implies the translation of medical terms into common terms and vice versa in a technical-scientific learning process, which contributes to the patient's literacy regarding their condition. The results show us that the simultaneity of these processes is frequent, that is, most of the students have already discussed, in the presence of the patient, their condition in technical terms. It should be noted that the students report that, usually, the information is explained to the patient, not clear whether the patient fully understands it. The impact on the doctor-patient relationship is difficult to understand – on the one hand, the explanation of the condition in pathophysiological

terms to the student and subsequent explanation, in terms perceptible to the patient's level of literacy, may enhance the pedagogical role of the doctor also with the patient. On the other hand, it may position them as a third person in the provision of care (considering the triangular doctor-patient-student connection), decentralizing it.

When exploring the conditions of consultation dynamics and the impact on the acquisition of skills by medical students, it is noted that, although the majority consider that the context is quite adequate, a significant percentage identify them as inadequate. It is important to explore these reasons and understand that the structuring of teaching, with time allocated to the provision of care (patient-centered) and the allocation of time (external to the moment of consultation) should be valued.

These limitations, defined by the competence of each student (per Curricular Unit and Curricular Year) help to prevent their overflow; the National Code of Ethics for Medical Students defines that "*Whenever the Patient and/or family asks for something that is outside the competence of the Student, the latter must inform the Tutor or a health professional who has the competence to help him*"(sic). It also recommends prohibiting, under any circumstances, the communication of the diagnosis or prognosis to the patient without the presence of the attending physician or his guardian, and it should be noted positively that a small majority of responses state that this happened without the presence of the tutor. (PorMSIC, 2022)

The medical student precedes the health professional and, therefore, medical secrecy is preceded by the medical student's secrecy, as confidentiality and privacy are ethically and legally established rights for the sick person (Guimarães, 2019). The vast majority of students reveal that they have already discussed a patient's clinical situation in public places and, within these, the vast majority actively maintain the anonymity of the sick person. The information conveyed between the patient and the doctor/student is established on a basis of trust and vulnerability, and breaches in confidentiality have the potential to cause harm to the patient's health, contribute to the decline in the quality of health care, as well as enhance feelings of hesitancy in the search for it (in the first consultation and/or follow-up) by patients. Thus, there should be a concern maintained in anonymity, but also in the context and purpose of the discussion of the clinical situations of a given patient so that such breaks do not occur. (Tegegne, 2022) (Blightman K, 2014).

This study had the main strength to provide a national and wide perspective of Portuguese Medical Students on ethical aspects of their clinical teaching – a highly applicable issue in medical education. It provides the basis to propose structural changes in terms of Patients' Consent for students' presence and participation in the healthcare provided; Perceived Patients' Discomfort; Patients' Management; Confidentiality and Privacy; and Medical Education and Pedagogy. Considering the defined data collection methods, our study has some limitations, since it is based on an online collection shared by e-mail and social networks and, therefore, may be affected by a selection bias as well as lead to a smaller-than-expected number of answers. That is, students who have digital access more easily

or who are more attentive to the topic may be more likely to respond. As this is a convenience sample, our results may not be generalized to other populations and contexts. Besides that, this provides only a student's perspective which is a limitation that can be further explored with other similar studies where patients' and tutors' perspectives are explored.

CONCLUSIONS

The results of the study reveal that the request for consent for the presence of students in the health care provided is not a structured process that is fully executed. It is important to understand, from a teacher's perspective, the reasons, difficulties, and proposals for solutions to guarantee and understand the importance of the same. The request for consent should be improved so that it takes place in the best format and *timing*, according to the context (namely spatial). On the other hand, it may be interesting to explore, in further studies, what is the perception of Portuguese medical students on knowledge about their curricular skills, and the format of identification to the patient (after the request for consent and presentation by the tutor), although it is noticeable that most medical students are aware of the National Code of Ethics for Medical Students. (PorMSIC, 2022) Namely about the understanding of the student's role, in addition to the pedagogical benefits, this contributes to an improvement in the explanation of their competencies (and respective limits) to patients (by the latter and their tutor) with a potential positive evolution of satisfaction and compliance with the patient's autonomy and informed decision regarding participation in the learning process. It will also be beneficial to explore a patient's perspective at the national level regarding this participation, namely the exploration of the issue of the real discomfort felt by the patient, replicating the questions elaborated in this study.

Clinical Academic Centres are defined as integrated structures of care, teaching, and clinical and translational research activity, which associate health care units, higher education institutions, and/or public or private research institutions, by Article 3 of Decree-Law No. 61/2018, third of August. University Hospitals, integrated into the previous ones, allow clinical medical education to take place and be enhanced while allowing the care provided to be included in a transversal perspective of knowledge. Clinical medical education is endowed with pedagogical and ethical particularities that allow integration and continuity with the professional reality and the health system. The recognition of these, of the main constraints and difficulties of the tripartite doctor-patient-student relationship, aims to preserve and improve medical training and health care while ensuring compliance with ethical principles and informed consent of the patient.

The present study has a mainly pedagogical purpose because it sets out a series of problems that should be addressed, according to the existing regulations and with new ones that are relevant to creation, but also by raising

awareness of the academic community, globally. The essentiality of integration in the clinical context for the acquisition of skills should be preserved and simultaneously guaranteed autonomy and other ethical duties towards the patient. Therefore, these considerations should not be limited to the conclusions drawn from here, and it is important that the pedagogical decision-makers of the Portuguese Medical Schools, tutors, and students themselves disseminate them so that regulations are established that homogenize the process of requesting consent and the understanding of its impact; that allows the identification of the student and the self- and hetero-knowledge (including of the patient) about their competences; and that provides the pedagogical process, including the time allocated and infrastructural conditions that elevate it.

LIST OF ABBREVIATIONS

Not applicable.

DECLARATIONS

ETHICAL CONSIDERATIONS

The study was conducted by the Declaration of Helsinki and received approval from the Ethics Committee of the Faculty of Medicine of the University of Porto (56/CEFMUP/2022). Electronic informed consent from all participants was obtained.

CONSENT FOR PUBLICATION

Not applicable.

AVAILABILITY OF DATA AND MATERIALS

All data generated or analyzed during this study are included in this published article [and its supplementary information files].

COMPETING INTERESTS

The authors declare that they have no competing interests.

FUNDING

Not applicable.

AUTHORS' CONTRIBUTIONS

RR: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Writing – original draft, Writing – review & editing. CS: Conceptualization, Data curation, Writing – review & editing; ID: Conceptualization, Methodology, Writing – review & editing.

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TABLES, FIGURES AND ILLUSTRATIONS LEGENDS

This table is not included in the text as it is more than one A4 page in length. The place where it should be added is referenced as a footnote.

Table 5

	TOTAL % [95%CI]	Year 4 %	Year 5 %	Year 6 %	p
Discuss with their tutors technical terms in the presence of patients					0,073
Never	16 [12,21]	20	18	5	
It's happened	68 [62,74]	65	69	72	
It happens often	16 [12,21]	15	13	23	
In cases where the discussion with the tutor in technical terms takes place in the presence of the patients, the information:					0,922
is explained to the patient as usual	72 [64,79]	71	72	77	
is rarely explained to the patient	5 [3,11]	7	4	3	
is explained to the patient according to certain circumstances*	8 [5,14]	7	10	8	
is never explained to the patient	15 [9,21]	15	14	12	
It has already revealed the diagnosis/prognosis to the patient without the presence of the tutor	2 [1,5]	2	1	6	0,125
Have you ever needed help for a clinical procedure without being in the presence of a tutor?					0,001
Never	46 [40,53]	54	47	28	
It's happened	52 [45,58]	45	48	71	
It happens often	2 [1,5]	1	5	1	
It informs the patient about the procedure it is going to apply, explaining its purpose and clarifying doubts					0,397
Never	2 [0,4]	2	1	1	
It's happened	21 [16,27]	19	26	19	
It happens often	77 [71,82]	79	73	80	

Percentage and 95% confidence interval (95%CI) of students who report discussing, in technical terms, with tutors in the presence of the patient, attitude taken a posteriori, diagnosis/prognosis, and clinical procedures. Total results and by curricular year of the students.

* Includes patient being a health professional and this allows the understanding of the terms used, Includes patient having prior knowledge of the technical context of the clinical condition; Includes explanation at the patient's request.

TITLE AND ABSTRACT

1 (a) - Indicate the study's design with a commonly used term in the title or the abstract –

PAGE 1

"A cross-sectional study..."

1 (b) - Provide in the abstract an informative and balanced summary of what was done and what was found – PAGE 1

"Clinical medical teaching is crucial for the comprehensive training of healthcare professionals. However, it often raises ethical concerns as it involves real patients and their health information. This study aims to explore the importance of informed consent in medical education as perceived by students enrolled in Portuguese Public Medical Schools. It specifically examines differences across different clinical curricular years (fourth, fifth, and sixth of the Integrated Master's Degree in Medicine) and their perspectives regarding the ethical aspects of their participation in clinical medical education on a national scale.

This cross-sectional study implemented an online questionnaire given to students of Public Portuguese Medical Schools. The questionnaire addressed issues such as the request for consent, the format of students' presentations to patients, the patient's discomfort, and aspects related to patient management, secrecy, and confidentiality. Statistical analysis was conducted using the Statistical Package for Social Sciences (SPSS), with a significance threshold set at a p-value of less than 0.05.

The results showed that only a minority of instructors consistently solicit patient consent for student inclusion in medical encounters, and they often do so in the immediate presence of medical students. A substantial proportion (68%) of students reported perceiving discomfort on the part of the patients. Additionally, 59% of students considered medical training in clinical settings to be adequate, while 37% deemed it inadequate, indicating a disparity.

The study concludes that the request for consent for the presence of students in the health care provided is not fully executed. To promote ethical standards in future medical careers, informed consent should be integrated into medical education in a structured, time-appropriate, and context-appropriate way. Prioritizing informed consent education can foster patient-centered care, equipping future healthcare providers with the necessary knowledge and skills."

INTRODUCTION

2 - Explain the scientific background and rationale for the investigation being reported –

PAGE 3

Correspondente à totalidade da secção "Background" com exceção do último parágrafo.

3 - State specific objectives, including any prespecified hypotheses – PAGE 5

"Considering student-patient interactions as based on the Code of Ethics for Medical Students, this study aims to evaluate, in Portugal, the perspectives of students regarding the ethical aspects of their participation in clinical medical education. As a secondary objective, we propose to evaluate the differences between the different clinical curricular years (fourth, fifth, and sixth of the Integrated Master's Degree in Medicine)."

METHODS

Study Design – 4 - Present key elements of study design early in the paper – PAGE 5

" This cross-sectional study included students from the fourth, fifth and sixth years enrolled in the academic year 2021/2022 and 2022/2023 in the Integrated Master's Degree in Medicine of the following Portuguese public medical schools: Faculty of Medicine of the University of Porto, Abel Salazar Institute of Biomedical Sciences – University of Porto, School of Medicine of the University of Minho, Faculty of Medicine of the University of Coimbra, Faculty of Health Sciences of the University of Beira Interior, Faculty of Medicine of the University of Lisbon and NOVA Medical School – Faculty of Medical Sciences."

Setting– 5 - Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection – PAGE 5

"Data was collected through an *online* questionnaire between August 2022 and November 2022.

The form for collecting web data was distributed via the different medical schools' official websites and on social media platforms such as Facebook, Instagram, and LinkedIn. This distribution adhered to the principles outlined in the Declaration of Helsinki.

All participants provided their informed consent online, with mandatory acceptance required to proceed. Upon accessing the provided link, participants were presented with an introduction detailing the study's objectives, the duration of data collection, and assurances of anonymity and confidentiality. The data was collected and processed under the regulations imposed by the General Data Protection Regulation."

Participants– 6 (a) Give the eligibility criteria, and the sources and methods of selection of participants – PAGE 5

" This cross-sectional study included students from the fourth, fifth and sixth years enrolled in the academic year 2021/2022 and 2022/2023 in the Integrated Master's Degree in Medicine of the following Portuguese public medical schools: Faculty of Medicine of the University of Porto, Abel Salazar Institute of Biomedical Sciences – University of Porto, School of Medicine of the University of Minho, Faculty of Medicine of the University of Coimbra, Faculty of Health Sciences of the University of Beira Interior, Faculty of Medicine of the University of Lisbon and NOVA Medical School – Faculty of Medical Sciences. The Faculty of Medicine and Biomedical Sciences of the University of Algarve was not included due to its curriculum and student differences – all of these have previous degrees which may alter their perception and attitudes during the clinical clerkship."

Variables– 7 – Clearly define all outcomes, exposures, predictors, potential cofounders and effect modifiers. Give diagnostic criteria, if applicable – PAGE 5,6

"The questionnaire was divided into two sections - the first on sociodemographic data and the second on questions about student participation in the consultation. The first part allowed the characterization of the sample where the participant's gender, age, curricular year, and faculty were collected. In the second section, we explore the request for consent for the presence of students (its execution, the circumstances, and the moment - in the presence or absence of students - in which this occurs) and then how the students are introduced to the patient, by the tutor (medical students - with or without identification of the curricular year; colleagues; other). We aimed to determine the correlation between the number of students and the level of discomfort felt by patients, from the perspective of the students. Additionally, we have examined the attitude of the students towards the discomfort perceived, as well as the contextual characterization of the discomfort, specifically in consultation, hospitalization, and

emergency services. We also included questions from the point of view of patient management, namely about the discussion of technical terms between the student and the tutor, in the presence of the patient; the disclosure of the diagnosis and/or prognosis by the student, without the presence of the tutor; performing a clinical procedure without the presence of the tutor; and the information provided regarding the procedure to be carried out. We also investigated the topic of secrecy and confidentiality, including the discussion of clinical cases, based on real patients, in public spaces, as well as the active effort to maintain anonymity. Finally, we investigated issues mainly in the field of medical education, namely the pedagogical impact of the dynamics of the consultation; and the inclusion of the National Code of Ethics for Medical Students in the curriculum.”

Data Sources/Measurement– 8*: For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group – PAGE 5, 6

“The questionnaire was divided into two sections - the first on sociodemographic data and the second on questions about student participation in the consultation. The first part allowed the characterization of the sample where the participant's gender, age, curricular year, and faculty were collected.” – as questões aplicadas foram em formato de escolha múltipla, permitindo uma avaliação quantitativa.

“In the second section, we explore the request for consent for the presence of students (its execution, the circumstances, and the moment - in the presence or absence of students - in which this occurs) and then how the students are introduced to the patient, by the tutor (medical students - with or without identification of the curricular year; colleagues; other). We aimed to determine the correlation between the number of students and the level of discomfort felt by patients, from the perspective of the students. Additionally, we have examined the attitude of the students towards the discomfort perceived, as well as the contextual characterization of the discomfort, specifically in consultation, hospitalization, and emergency services. We also included questions from the point of view of patient management, namely about the discussion of technical terms between the student and the tutor, in the presence of the patient; the disclosure of the diagnosis and/or prognosis by the student, without the presence of the tutor; performing a clinical procedure without the presence of the tutor; and the information provided

regarding the procedure to be carried out. We also investigated the topic of secrecy and confidentiality, including the discussion of clinical cases, based on real patients, in public spaces, as well as the active effort to maintain anonymity. Finally, we investigated issues mainly in the field of medical education, namely the pedagogical impact of the dynamics of the consultation; and the inclusion of the National Code of Ethics for Medical Students in the curriculum.” – a segunda secção apresenta questões de escolha múltipla e abertas, de acordo com o protocolo do estudo disponível no Apêndice I. As questões de resposta aberta foram codificadas de acordo com o apresentado nas tabelas respetivas dos resultados, que providenciam as respetivas explicações. As questões foram elaboradas de acordo com a literatura, como exemplificado na secção de Background.

Bias – 9 – Describe efforts to address potential sources of bias – PAGE 5

“The Faculty of Medicine and Biomedical Sciences of the University of Algarve was not included due to its curriculum and student differences – all of these have previous degrees which may alter their perception and attitudes during the clinical clerkship.”.

Study size – 10 – Explain how the study size was arrived at – PAGE 5, 6

“Data was collected through an online questionnaire between August 2022 and November 2022.” O questionário esteve disponível online durante o período de tempo apresentado e todos os que responderam ao inquérito foram incluídos no estudo. Não foi realizado um cálculo à priori para o tamanho mínimo da amostra, tendo sido posteriormente realizado “As the proportion of students per medical school in the sample was different from the proportion of students per medical school in the population, the sample was weighed to improve its representativeness. Thus, the estimates of the proportions of each response and their respective confidence intervals are adjusted for these weights.”, remetendo-se para a secção de Statistical Analysis.

Quantitative variables – 11 – Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why. – PAGE 6

"A database was established using the collected responses, and data analysis was conducted using the Statistical Package for Social Sciences. Statistical significance was determined with a threshold set at a p-value of less than 0.05. (...)

As the proportion of students per medical school in the sample was different from the proportion of students per medical school in the population, the sample was weighed to improve its representativeness. Thus, the estimates of the proportions of each response and their respective 95% confidence intervals are adjusted for these weights.

Chi-square tests were used to compare the proportions of the answers per curricular year of the student, considering the weights explained before. To compare the level of discomfort between different spatial contexts (consultation versus hospitalization, consultation versus emergency services, and hospitalization versus emergency service), McNemar tests with Bonferroni adjustment for multiple comparisons were used."

Statistical Methods – 12 (a) - Describe all statistical methods, including those used to control for confounding – PAGE 6

"A database was established using the collected responses, and data analysis was conducted using the Statistical Package for Social Sciences. Statistical significance was determined with a threshold set at a p-value of less than 0.05. Answers to open-ended questions were classified and coded and some ordinal categorical variables with categories with low frequency were recorded accordingly as shown in the respective tables.

As the proportion of students per medical school in the sample was different from the proportion of students per medical school in the population, the sample was weighed to improve its representativeness. Thus, the estimates of the proportions of each response and their respective confidence intervals are adjusted for these weights.

Chi-square tests were used to compare the proportions of the answers per curricular year of the student. To compare the level of discomfort between different spatial contexts (consultation versus hospitalization, consultation versus emergency services, and hospitalization versus emergency service), a McNemar test with Bonferroni adjustment was used for multiple comparisons."

Statistical Methods – 12 (b) - Describe any methods used to examine subgroups and interactions – PAGE 6

"Chi-square tests were used to compare the proportions of the answers per curricular year of the student. To compare the level of discomfort between different spatial contexts (consultation versus hospitalization, consultation versus emergency services, and hospitalization versus emergency service), a McNemar test with Bonferroni adjustment was used for multiple comparisons."

Statistical Methods – 12 (c) - Explain how missing data were addressed – PAGE 6

"A total of 365 students responded to the survey and no missing data was found."

Statistical Methods – 12 (d) - If applicable, describe analytical methods taking account of sampling strategy – PAGE 6

"As the proportion of students per medical school in the sample was different from the proportion of students per medical school in the population, the sample was weighed to improve its representativeness. Thus, the estimates of the proportions of each response and their respective confidence intervals are adjusted for these weights. "

Statistical Methods – 12 (e) - Describe any sensitivity analyses - X

Não aplicável.

RESULTS

Participants – 13* (a) Report numbers of individuals at each stage of study – e.g., numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed – PAGE 6

"A total of 365 students responded to the survey."

Participants – 13* (b) Give reasons for non-participation at each stage – X

Não aplicável, foram incluídos todos os que responderam ao questionário.

Participants – 13* (c) Consider use of a flow diagram - X

Não aplicável.

Descriptive data – 14* (a) – Give characteristics of study participants (e.g. demographic, clinical, social) and information on exposures and potential cofounders – PAGE 6

“The median age was 22 years and the interquartile range was 21-24 years, with the youngest student being 19 years old and the oldest being 48 years old. Most of the students who responded were female (80%) and in the fourth curricular year (47%), with 29% in the fifth curricular year and 24% in the sixth curricular year. 42% of the students who responded studied in the Faculty of Medicine of the University of Porto, 12% in the School of Medicine of the University of Minho, 11% in the Faculty of Medical Sciences | Nova Medical School, 10% in the Abel Salazar Institute of Biomedical Sciences of the University of Porto, 9% in the Faculty of Medicine of the University of Lisbon, 9% in the Faculty of Health Sciences of the University of Beira Interior and 7% in the Faculty of Medicine of the University of Coimbra.”

Descriptive data – 14* (b) - Indicate number of participants with missing data for each variable of interest – X

Não aplicável.

Outcome data – 15* - Report numbers of outcome events or summary measures - X

Não aplicável.

Main Results – 16 (a) – Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included – PAGE 7, 8, 9, 10, 11, 19

Table 1: Percentage of responses and respective confidence intervals regarding the request for consent and circumstances of its execution and non-execution. Total results and by curricular year.

Table 2: Percentage of responses and respective confidence intervals regarding the presentation of

students to tutors. Total results and by curricular year.

Table 3: Percentage and 95% confidence interval (95%CI), total and by curricular year, of students who report a certain number of students in the context of consultation; who report perceived discomfort of the patient about the number of students and who report perceived discomfort of the patient regardless of the context.

Table 4: Percentage and 95% confidence interval (95%CI) of students who say they feel each degree of discomfort compared to the number of students present at the consultation, hospitalization, and emergency department.

Table 5: Percentage and 95% confidence interval (95%CI) of students who report discussing, in technical terms, with tutors in the presence of the patient, attitude taken a posteriori, diagnosis/prognosis, and clinical procedures. Total results and by curricular year of the students.

Table 6 - Percentage of students' responses and respective confidence intervals (CI) about confidentiality, pedagogical conditions, and knowledge of the National Code of Ethics for Medical Students. Total results and by curricular year of the students.

Os ajustes realizados dizem respeito ao processo exemplificado em ""As the proportion of students per medical school in the sample was different from the proportion of students per medical school in the population, the sample was weighed to improve its representativeness. Thus, the estimates of the proportions of each response and their respective confidence intervals are adjusted for these weights. ""

Main Results – 16 (b) – Report category boundaries when continuous variables were categorized - PAGE 7, 8, 9

Table 1 – Consider the categories and respective explanation regarding the question "When guardians do not ask for consent, the circumstance is"

Table 2 – Consider the categories and respective explanation regarding the question “When tutors do not always introduce students to the patient, the circumstance is”

Table 3 – Consider the categories and respective explanation regarding the question “Have you ever felt the patient uncomfortable with the presence of students?” > “Considering the students who felt discomfort with the patient, they communicated the discomfort to the tutor” > “Considering the students who felt discomfort with the patient and communicated it to the tutor, the tutor's attitude was:”

Consider the categories and respective explanation regarding the question “The number of students per consultation on average reported”

Main Results – 16 (c) - If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period – X

Não aplicável.

Other analyses – 17 - Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses – – PAGE 7, 8, 9, 10, 11, 19

Tables 1, 2, 3, 5 and 6 – Comparison between 4th, 5th and 6th curricular years, using “Chi-square tests were used to compare the proportions of the answers per curricular year of the student.”

Table 4 – Comparison between different spatial contexts, using “To compare the level of discomfort between different spatial contexts (consultation versus hospitalization, consultation versus emergency services, and hospitalization versus emergency service), a McNemar test with Bonferroni adjustment was used for multiple comparisons.”

DISCUSSION

Key results – 18 - Summarise key results with reference to study objectives – PAGE 9, 10, 11, 12, 13, 14

“According to previous studies, in which there is an assumption that clinical teaching in a University Hospital is sufficient for the assumed consent of the patients, a small percentage of tutors always ask

for consent from the patient and, when they do, most do so in the presence of the students. These data are important from the point of view of the patient's autonomy and decision-making capacity, which are potentially diminished and biased by the presence of students. The reasons for the absence of a consent request are diverse, with the results suggesting that there is no specific context for this to happen. The presentation format is adequate, in most cases, with the presentation of students as such to patients, although without identification of the curricular year of the same in most cases (49%). Previous studies report that patients want information about this, including procedures that can be performed by some to the detriment of others (Pallin DJ, 2008). It should be noted, regarding these results, that the absence of a request for consent is also due, from the student's perspective to reasons of forgetfulness on the part of the tutor and that the presentation format, with the use of terms such as "colleague" tends to happen more with the advancement of the clinical cycle, specifically in the sixth curricular year (professional, in the Portuguese Medical Schools)."

"Regarding patient management, the vast majority of students report that they explain the procedure (including its purpose and any doubts on the part of the patient), and it should be noted as positive and potentially consequential to the understanding of the importance of patient empowerment. On the other hand, it is important to highlight that clinical medical education presupposes that tutoring is a guarantee, including for the performance of procedures. The existence of 52% of students who demonstrate the need for help for clinical procedures without the presence of a tutor at some point, increases with the progression of the curricular year, with a large majority taking place in the sixth curricular year."

"It is important to highlight the perception of the patient's discomfort by the vast majority of students (...). The reporting of this discomfort to the tutor - primarily responsible for the relationship established and care provided to the patient (but also for the teaching process) - happens in a minority of situations."

"The process of medical learning in a clinical environment implies the translation of medical terms into common terms and vice versa in a technical-scientific learning process, which contributes to the patient's literacy regarding their condition. The results show us that the simultaneity of these processes is frequent, that is, most of the students have already discussed, in the presence of the patient, their condition in technical terms. It should be noted that the students report that, usually, the information is explained to the patient, not being clear whether the patient fully understands it"

"When exploring the conditions of consultation dynamics and the impact on the acquisition of skills by medical students, it is noted that, although the majority consider that the context is quite adequate, a significant percentage identify them as inadequate"

"The vast majority of students reveal that they have already discussed a patient's clinical situation in public places and, within these, the vast majority actively maintain the anonymity of the sick person."

Regarding the secondary objective:

Comparison between curricular years

"In fact, in our study, the comparison of curricular years showed that, in most cases, fourth-year students are presented as students, without identification of the curricular year, unlike what happens with students in the fifth and sixth curricular years. Some literature shows different attitudes of patients toward older students, compared to younger students, mostly for procedures and evaluations perceived as more invasive. They also suggest greater receptivity in the provision of care if there is a sense of integration in the medical team. This opinion stems from the assumption that a higher curricular year presupposes a higher level of competence (for example, in terms of the number of repetitions of the same procedure, but also in terms of the greater probability that the patient in question will not be the first to be evaluated by this student), identifying a low knowledge on the part of patients regarding the hierarchical structure of medical training. (AlMahmoud T, 2018)(Koehler, 2012) (Glasser M, 1985). On the other hand, students and tutors also have the perception that the acceptance of students will be lower if there is a reference to their curricular year, which is compatible with the results presented."

"No significant differences were found between the curricular years in the degree of discomfort that students say they feel about the number of students present either in the consultation ($p=0.083$), in hospitalization ($P=0.397$), or the emergency department ($p=0.630$)."

"No significant differences were found between the students' curricular years and the percentage of responses about confidentiality, pedagogical conditions, and knowledge of the National Code of Ethics for Medical Students"

Comparison between spatial contexts (consultation vs. hospitalization vs. emergency service):

"It is important to highlight the perception of the patient's discomfort by the vast majority of students and, analyzing this discomfort in spatial terms (*Table 3*) (context of consultation, hospitalization, or emergency service), we were able to understand that there are statistically significant differences in the degree of discomfort perceived between the various spaces. It is in hospitalization where a moderate or high degree of discomfort is most frequently reported, and it is in the emergency department where a moderate or high degree of discomfort is reported less frequently."

Limitations – 19 - Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both the direction and magnitude of any potential bias – PAGE 15

Considering the defined data collection methods, our study has some limitations, since it is based on an online collection shared by e-mail and social networks and, therefore, may be affected by a selection bias as well as lead to a smaller-than-expected number of answers. That is, students who have digital access more easily or who are more attentive to the topic may be more likely to respond. As this is a convenience sample, our results may not be generalized to other populations and contexts. Besides that, this provides only a student's perspective which is a limitation that can be further explored with other similar studies where patients' and tutors' perspectives are explored.

Interpretation – 20 - Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence – PAGE 15

"The results of the study reveal that the request for consent for the presence of students in the health care provided is not a structured process that is fully executed. It is important to understand, from a teacher's perspective, the reasons, difficulties, and proposals for solutions to guarantee and understand the importance of the same. The request for consent should be improved so that it takes place in the best format and *timing*, according to the context (namely spatial). On the other hand, it may be interesting to explore, in further studies, what is the perception of Portuguese medical students about knowledge about their curricular skills, and the format of identification to the patient (after the request for consent and presentation by the tutor), although it is noticeable that most medical students are

aware of the National Code of Ethics for Medical Students. Namely about the understanding of the student's role, in addition to the pedagogical benefits, this contributes to an improvement in the explanation of their competencies (and respective limits) to patients (by the latter and their tutor) with a potential positive evolution of satisfaction and compliance with the patient's autonomy and informed decision regarding participation in the learning process. It will also be beneficial to explore a patient's perspective at the national level regarding this participation, except the exploration of the issue of the real discomfort felt by the patient, replicating the questions elaborated in this study.

**Generalisability – 21 - Discuss the generalisability (external validity) of the study results –
PAGE 15, 16**

"Clinical Academic Centres are defined as integrated structures of care, teaching, and clinical and translational research activity, which associate health care units, higher education institutions, and/or public or private research institutions, by Article 3 of Decree-Law No. 61/2018, third of August. University Hospitals, integrated into the previous ones, allow clinical medical education to take place and be enhanced while allowing the care provided to be included in a transversal perspective of knowledge. Clinical medical education is endowed with pedagogical and ethical particularities that allow integration and continuity with the professional reality and the health system. The recognition of these, of the main constraints and difficulties of the tripartite doctor-patient-student relationship, aims to preserve and improve medical training and health care while ensuring compliance with ethical principles and informed consent of the patient.

The present study has a mainly pedagogical purpose because it sets out a series of problems that should be addressed, according to the existing regulations and with new ones that are relevant to creation, but also by raising awareness of the academic community, globally. The essentiality of integration in the clinical context for the acquisition of skills should be preserved and simultaneously guaranteed autonomy and other ethical duties towards the patient. Therefore, these considerations should not be limited to the conclusions drawn from here, and it is important that the pedagogical decision-makers of the Portuguese Medical Schools, tutors, and students themselves disseminate them so that regulations are established that homogenize the process of requesting consent and the understanding of its impact; that allows the identification of the student and the self- and hetero-knowledge (including of the patient)

about their competences; and that provides the pedagogical process, including the time allocated and infrastructural conditions that elevate it. "

OTHER INFORMATION

Funding – 22 - Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based -X

Não aplicável.

STROBE Statement—Checklist of items that should be included in reports of *cross-sectional studies*

Studies

	Item No	Recommendation	Page No
Title and abstract	1	(a) Indicate the study's design with a commonly used term in the title or the abstract	1
		(b) Provide in the abstract an informative and balanced summary of what was done and what was found	1
Introduction			
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	3
Objectives	3	State specific objectives, including any prespecified hypotheses	5
Methods			
Study design	4	Present key elements of study design early in the paper	5
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	5
Participants	6	(a) Give the eligibility criteria, and the sources and methods of selection of participants	5,6
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	5,6
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	5,6
Bias	9	Describe any efforts to address potential sources of bias	5
Study size	10	Explain how the study size was arrived at	5,6
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	6
Statistical methods	12	(a) Describe all statistical methods, including	6

		those used to control for confounding	
		(b) Describe any methods used to examine subgroups and interactions	6
		(c) Explain how missing data were addressed	6
		(d) If applicable, describe analytical methods taking account of sampling strategy	6
		(e) Describe any sensitivity analyses	X
Results			
Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	6
		(b) Give reasons for non-participation at each stage	X
		(c) Consider use of a flow diagram	
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	6
		(b) Indicate number of participants with missing data for each variable of interest	X
Outcome data	15*	Report numbers of outcome events or summary measures	X
Main results	16	(a) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included	7,8,9,10,11,10
		(b) Report category boundaries when continuous variables were categorized	7,8,9
		(c) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	X
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	7, 8, 9, 10, 11, 19
Discussion			
Key results	18	Summarise key results with reference to study objectives	9,10,11,12, 13,14
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias	15
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	15
Generalisability	21	Discuss the generalisability (external validity) of the study results	15,16
Other information			
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	X

*Give information separately for exposed and unexposed groups.

Note: An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at <http://www.plosmedicine.org/>, Annals of Internal Medicine at <http://www.annals.org/>, and Epidemiology at <http://www.epidem.com/>). Information on the STROBE Initiative is available at www.strobe-statement.org.

ANEXO II

PARECER DA COMISSÃO DE ÉTICA DA FACULDADE DE MEDICINA DA UNIVERSIDADE DO PORTO

Julho, 2022
Ana Rita da Silva Ribeiro

PARECER

56/CEFMUP/2022

Comissão de Ética da Faculdade de Medicina da Universidade do Porto

Parecer/Rapport: 56/CEFMUP/2022

Título do projeto/ Project title: Ensino Clínico Médico: uma perspetiva estudantil nacional

Investigador/ Researcher: Rita Ribeiro

Parecer/ Rapport:

- ☒ Favorável/Accepted
☐ Rejeitado/Declined
☐ Outro

Relator: Mónica Correia

Deliberado em reunião plenária da Comissão de Ética de 28 de julho de 2022 por unanimidade dos membros presentes.

Solicita-se o favor de após a conclusão do projeto enviar o relatório final com as conclusões do estudo, nos termos do Art.3º n.º 3 alínea f) do Decreto-Lei n.º 80/2018 de 15 de Outubro.

Porto, 29 de julho de 2022



O Secretariado Executivo da Comissão de Ética
Prof.ª Doutora Francisca Rego



Presidente da Comissão de Ética
Prof. Doutor Rui Nunes

ANEXO III

Normas de Publicação
Instruções para o Autor

Revista BMC Medical Education

Fevereiro, 2024
Ana Rita da Silva Ribeiro

Research article

Criteria

Research articles should report on original primary research, but may report on systematic reviews of published research provided they adhere to the appropriate reporting guidelines which are detailed in our [editorial policies](#). Please note that non-commissioned pooled analyses of selected published research will not be considered. Studies reporting descriptive results from a single institution or region will only be considered if analogous data have not been previously published in a peer reviewed journal and the conclusions provide distinct insights that are of relevance to a regional or international audience.

BMC Medical Education strongly encourages that all datasets on which the conclusions of the paper rely should be available to readers. We encourage authors to ensure that their datasets are either deposited in publicly available repositories (where available and appropriate) or presented in the main manuscript or additional supporting files whenever possible. Please see Springer Nature's [data repository guidance](#).

Authors who need help depositing and curating data may wish to consider contacting our [Research Data Support Helpdesk](#).

Preparing your manuscript

The information below details the section headings that you should include in your manuscript and what information should be within each section.

Please note that your manuscript must include a 'Declarations' section including all of the subheadings (please see below for more information).

Title page

The title page should:

- present a title that includes, if appropriate, the study design e.g.:
 - "A versus B in the treatment of C: a randomized controlled trial", "X is a risk factor for Y: a case control study", "What is the impact of factor X on subject Y: A systematic review"
 - or for non-clinical or non-research studies a description of what the article reports
- list the full names and institutional addresses for all authors
 - if a collaboration group should be listed as an author, please list the Group name as an author. If you would like the names of the individual members of the Group to be searchable through their individual PubMed records, please include this information in the "Acknowledgements" section in accordance with the instructions below

- Large Language Models (LLMs), such as [ChatGPT](#), do not currently satisfy our [authorship criteria](#). Notably an attribution of authorship carries with it accountability for the work, which cannot be effectively applied to LLMs. Use of an LLM should be properly documented in the Methods section (and if a Methods section is not available, in a suitable alternative part) of the manuscript.
- indicate the corresponding author

Abstract

The Abstract should not exceed 350 words. Please minimize the use of abbreviations and do not cite references in the abstract. Reports of randomized controlled trials should follow the [CONSORT](#) extension for abstracts. The abstract must include the following separate sections:

- **Background:** the context and purpose of the study
- **Methods:** how the study was performed and statistical tests used
- **Results:** the main findings
- **Conclusions:** brief summary and potential implications
- **Trial registration:** If your article reports the results of a health care intervention on human participants, it must be registered in an appropriate registry and the registration number and date of registration should be stated in this section. If it was not registered prospectively (before enrollment of the first participant), you should include the words 'retrospectively registered'. See our [editorial policies](#) for more information on trial registration

Keywords

Three to ten keywords representing the main content of the article.

Background

The Background section should explain the background to the study, its aims, a summary of the existing literature and why this study was necessary or its contribution to the field.

Methods

The methods section should include:

- the aim, design and setting of the study
- the characteristics of participants or description of materials
- a clear description of all processes, interventions and comparisons. Generic drug names should generally be used. When proprietary brands are used in research, include the brand names in parentheses
- the type of statistical analysis used, including a power calculation if appropriate

Results

This should include the findings of the study including, if appropriate, results of statistical analysis which must be included either in the text or as tables and figures.

Discussion

This section should discuss the implications of the findings in context of existing research and highlight limitations of the study.

Conclusions

This should state clearly the main conclusions and provide an explanation of the importance and relevance of the study reported.

List of abbreviations

If abbreviations are used in the text they should be defined in the text at first use, and a list of abbreviations should be provided.

Declarations

All manuscripts must contain the following sections under the heading 'Declarations':

- Ethics approval and consent to participate
- Consent for publication
- Availability of data and materials
- Competing interests
- Funding
- Authors' contributions
- Acknowledgements
- Authors' information (optional)

Please see below for details on the information to be included in these sections.

If any of the sections are not relevant to your manuscript, please include the heading and write 'Not applicable' for that section.

Ethics approval and consent to participate

Manuscripts reporting studies involving human participants, human data or human tissue must:

- include a statement on ethics approval and consent (even where the need for approval was waived)
- include the name of the ethics committee that approved the study and the committee's reference number if appropriate

Studies involving animals must include a statement on ethics approval and for experimental studies involving client-owned animals, authors must also include a statement on informed consent from the client or owner.

See our [editorial policies](#) for more information.

If your manuscript does not report on or involve the use of any animal or human data or tissue, please state "Not applicable" in this section.

Consent for publication

If your manuscript contains any individual person's data in any form (including any individual details, images or videos), consent for publication must be obtained from that person, or in the case of children, their parent or legal guardian. All presentations of case reports must have consent for publication.

You can use your institutional consent form or our [consent form](#) if you prefer. You should not send the form to us on submission, but we may request to see a copy at any stage (including after publication).

See our [editorial policies](#) for more information on consent for publication.

If your manuscript does not contain data from any individual person, please state "Not applicable" in this section.

Availability of data and materials

All manuscripts must include an 'Availability of data and materials' statement. Data availability statements should include information on where data supporting the results reported in the article can be found including, where applicable, hyperlinks to publicly archived datasets analysed or generated during the study. By data we mean the minimal dataset that would be necessary to interpret, replicate and build upon the findings reported in the article. We recognise it is not always possible to share research data publicly, for instance when individual privacy could be compromised, and in such instances data availability should still be stated in the manuscript along with any conditions for access.

Authors are also encouraged to preserve search strings on searchRxiv <https://searchrxiv.org/>, an archive to support researchers to report, store and share their searches consistently and to enable them to review and re-use existing searches. searchRxiv enables researchers to obtain a digital object identifier (DOI) for their search, allowing it to be cited.

Data availability statements can take one of the following forms (or a combination of more than one if required for multiple datasets):

- The datasets generated and/or analysed during the current study are available in the [NAME] repository, [PERSISTENT WEB LINK TO DATASETS]
- The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.
- All data generated or analysed during this study are included in this published article [and its supplementary information files].
- The datasets generated and/or analysed during the current study are not publicly available due [REASON WHY DATA ARE NOT PUBLIC] but are available from the corresponding author on reasonable request.
- Data sharing is not applicable to this article as no datasets were generated or analysed during the current study.
- The data that support the findings of this study are available from [third party name] but restrictions apply to the availability of these data, which were used under license for the current study, and so are not publicly available. Data are however available from the authors upon reasonable request and with permission of [third party name].
- Not applicable. If your manuscript does not contain any data, please state 'Not applicable' in this section.

More examples of template data availability statements, which include examples of openly available and restricted access datasets, are available [here](#).

Competing interests

All financial and non-financial competing interests must be declared in this section.

See our [editorial policies](#) for a full explanation of competing interests. If you are unsure whether you or any of your co-authors have a competing interest please contact the editorial office.

Please use the authors initials to refer to each authors' competing interests in this section.

If you do not have any competing interests, please state "The authors declare that they have no competing interests" in this section.

Funding

All sources of funding for the research reported should be declared. If the funder has a specific role in the conceptualization, design, data collection, analysis, decision to publish, or preparation of the manuscript, this should be declared.

Authors' contributions

The individual contributions of authors to the manuscript should be specified in this section. Guidance and criteria for authorship can be found in our [editorial policies](#).

Please use initials to refer to each author's contribution in this section, for example: "FC analyzed and interpreted the patient data regarding the hematological disease and the transplant. RH performed the histological examination of the kidney, and was a major contributor in writing the manuscript. All authors read and approved the final manuscript."

Acknowledgements

Please acknowledge anyone who contributed towards the article who does not meet the criteria for authorship including anyone who provided professional writing services or materials.

Authors should obtain permission to acknowledge from all those mentioned in the Acknowledgements section.

See our [editorial policies](#) for a full explanation of acknowledgements and authorship criteria.

If you do not have anyone to acknowledge, please write "Not applicable" in this section.

Group authorship (for manuscripts involving a collaboration group): if you would like the names of the individual members of a collaboration Group to be searchable through their individual PubMed records, please ensure that the title of the collaboration Group is included on the title page and in the submission system and also include collaborating author names as the last paragraph of the "Acknowledgements" section. Please add authors in the format First Name, Middle initial(s) (optional), Last Name. You can add institution or country information for each author if you wish, but this should be consistent across all authors.

Please note that individual names may not be present in the PubMed record at the time a published article is initially included in PubMed as it takes PubMed additional time to code this information.

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Footnotes

Footnotes can be used to give additional information, which may include the citation of a reference included in the reference list. They should not consist solely of a reference citation, and they should never include the bibliographic details of a reference. They should also not contain any figures or tables.

Footnotes to the text are numbered consecutively; those to tables should be indicated by superscript lower-case letters (or asterisks for significance values and other statistical data). Footnotes to the title or the authors of the article are not given reference symbols.

Always use footnotes instead of endnotes.

References

Examples of the Vancouver reference style are shown below.

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APÊNDICE I

PROTOCOLO DO ESTUDO

Ensino Clínico Médico: uma perspetiva estudantil nacional

Maio, 2022
Ana Rita da Silva Ribeiro

Título Ensino Clínico Médico: uma perspetiva estudantil nacional

Grupo de trabalho: Rita Ribeiro, Cristina Santos, Ivone Duarte

Investigador principal: Rita Ribeiro

Introdução

De acordo com os princípios éticos claramente estabelecidos na ética e no ensino médico, o respeito pela autonomia do paciente e a exigência do consentimento livre revelam-se como parte integrante destes.

O ensino clínico de um estudante de medicina assume um papel de particular relevo no que concerne a completa formação de um profissional de saúde, de acordo com o cumprimento de objetivos técnico-científicos e humanistas. Desta forma, a presença dos estudantes nos diferentes domínios da prática clínica, embora essencial na formação destes, não se revela como parte integrante da assistência médica. Desta forma, e de acordo com o supracitado, é dever a autorização explícita do paciente para a participação no processo de aprendizagem estudantil, com a factualidade de que poderá ser negada a qualquer momento a participação do estudante na assistência médica prestada.

Considerando as interações estudante-paciente como fundadas num Código Ético de conduta em cada uma das escolas médicas nacionais e igualmente no Código de Ético do Estudante de Medicina da Associação Nacional de Estudantes de Medicina, o estudo em questão propõe-se a avaliar, a nível nacional, as perspetivas dos estudantes quanto à sua participação no ensino médico clínico.

Objetivos

1. Conhecer a conduta dos estudantes de medicina e dos seus professores, na perspetiva dos

estudantes, no que respeita à solicitação do consentimento informado aos doentes para estarem na presença de estudantes;

2. Avaliar o cumprimento dos princípios éticos da autonomia, justiça, beneficência e não maleficência nos métodos pedagógicos utilizados
3. Avaliar o cumprimento das recomendações estabelecidas pelo Código de Ética Nacional para Estudantes de Medicina
4. Conhecer a perspetiva dos estudantes relativamente à sua participação com doentes no ensino médico;
5. Avaliar a necessidade de futura intervenção na área para uma melhoria continuada da formação médica e da qualidade dos cuidados de saúde prestados, de acordo com as problemáticas encontradas.

Desenho do estudo

Estudo transversal observacional

Métodos

Aplicação do questionário a estudantes do 4º, 5º e 6º anos do Mestrado Integrado em Medicina da Faculdade de Medicina da Universidade do Porto (FMUP), Instituto de Ciências Biomédicas Abel Salazar (ICBAS), Escola de Medicina da Universidade do Minho (EM-UM), Faculdade de Medicina da Universidade de Coimbra (FMUC), Faculdade de Ciências da Saúde da Universidade da Beira Interior (FCS – UBI), Faculdade de Medicina da Universidade de Lisboa (FMUL), NOVA Medical School – Faculdade de Ciências Médicas (FCM | NMS).

Os dados serão recolhidos e tratados de acordo com a legislação imposta pelo Regulamento Geral de Proteção de Dados.

Forças e fraquezas do estudo

Considerando os métodos de recolha de dados definidos o nosso estudo apresenta algumas limitações, desde logo é baseado numa recolha online compartilhada por e-mail e redes sociais e, portanto, pode ser afetado por um viés de seleção. Ou seja, os estudantes que têm acesso digital mais facilmente ou

que estão mais atentos ao tema podem ter maior probabilidade de responder. Tratando-se de uma amostra de conveniência, os nossos resultados poderão não ser generalizados para outras populações e contextos. Além disso, este é um estudo transversal, portanto, a interpretação temporal dos dados deve ser feita com cuidado. Como principal força podemos elencar o envolvimento de todas as faculdades de medicina portuguesas aumentando aqui a representatividade da amostra.

Considerações éticas

Pretendemos conhecer, na perspetiva dos estudantes de medicina, se os princípios éticos preconizados em vários documentos estão a ser cumpridos, nomeadamente no que respeita ao Código Ético dos estudantes de medicina.

Implicação para a saúde das populações

Potencialmente, os resultados desta investigação servirão não só para avaliar o panorama atual relativamente aos assuntos supracitados, como também para alertar para a necessidade da reedificação destes valores na formação médica, caso tal se revele necessário. Não prevemos que existam quaisquer riscos para os participantes.

APÊNDICE II

QUESTIONÁRIO ONLINE DO ESTUDO

Ensino Clínico Médico: uma perspetiva estudantil nacional

Parte I – Informação ao Participante
Parte II – Protocolo de avaliação (questionário)

Maio, 2022
Ana Rita da Silva Ribeiro

PARTE 1 - INFORMAÇÃO AO PARTICIPANTE

Ensino Clínico Médico: uma perspetiva estudantil nacional

No âmbito de um estudo sobre a perspetiva estudantil nacional sobre o ensino clínico (4º, 5º e 6º anos do Mestrado Integrado em Medicina) nas Escolas Médicas Nacionais Públicas, vimos convidá-lo(a) a responder a um pequeno número de questões sobre o tema "Ensino Clínico Médico: uma perspetiva estudantil nacional". Deste modo, este estudo pretende conhecer a conduta dos estudantes de medicina e dos seus professores, na perspetiva dos primeiros, no que respeita à solicitação de Consentimento Informado aos doentes, assim como o cumprimento dos princípios éticos de autonomia, justiça, beneficência e não maleficência nos métodos pedagógicos utilizados.

Trata-se de um estudo inserido num projeto de investigação que está a ser desenvolvido no âmbito da Unidade Curricular de Dissertação do 6º ano do Mestrado Integrado em Medicina, inserido no Departamento de Medicina da Comunidade, Informação e Decisão em Saúde na Faculdade de Medicina da Universidade do Porto.

De acordo com os procedimentos éticos neste tipo de estudos, está assegurada a confidencialidade e privacidade dos dados de acordo com a legislação atualmente em vigor, através do anonimato da recolha.

A privacidade e a proteção dos dados estão de acordo com o Regulamento Geral de Proteção de Dados da União Europeia. Os dados recolhidos serão utilizados para fins de investigação científica e serão mantidos pelo período de tempo necessário para o tratamento dos mesmos e para a sua divulgação. A segurança e a proteção dos dados é assegurada através dos mesmos num equipamento protegido por palavra-passe e apenas acedido pelos investigadores.

Foi obtido o parecer favorável da Comissão de Ética da Faculdade de Medicina da Universidade do Porto.

O seu preenchimento deverá demorar aproximadamente 5 minutos.

Caso deseje contactar-nos o email do Investigador Principal é aritasilvarib@gmail.com

Consentimento

Conhecendo esta informação declaro que aceito a participação no estudo em questão. **SIM**

PARTE II - PROTOCOLO DE AVALIAÇÃO

I. Dados Sociodemográficos

1. Género

- ☐ Feminino
- ☐ Masculino
- ☐ Prefiro não responder

2. Idade ____

3. Ano curricular frequentado

- ☐ 4º Ano
- ☐ 5º Ano
- ☐ 6º Ano

4. Faculdade frequentada no ano letivo 2021/2022

- ☐ Faculdade de Medicina da Universidade do Porto (FMUP)
- ☐ Instituto de Ciências Biomédicas Abel Salazar (ICBAS)
- ☐ Escola de Medicina da Universidade do Minho (EM-UM)
- ☐ Faculdade de Medicina da Universidade de Coimbra (FMUC)
- ☐ Faculdade de Ciências da Saúde da Universidade da Beira Interior (FCS – UBI)
- ☐ Faculdade de Medicina da Universidade de Lisboa (FMUL)
- ☐ NOVA Medical School (FCM | NMS)

II. Questões relacionadas com o âmbito do projeto de investigação

Por favor responda tendo em conta a sua experiência como estudante de medicina no decurso das consultas que assiste quer na consulta externa, quer no internamento, quer no Serviço de Urgência.

5. Os seus tutores pedem sempre consentimento ao doente para estar na presença de estudantes?

- ☐ Sim
- ☐ Não

5.1. SE NÃO, em que circunstâncias não o pede? _____

6. Quando pedem consentimento fazem-no antes dos estudantes entrarem na sala ou na presença dos estudantes?

- ☐ Nunca pedem consentimento
- ☐ Pedem na presença dos estudantes
- ☐ Pedem na ausência dos estudantes

7. Apresentam sempre os estudantes ao doente?

- ☐ Sim
- ☐ Não

7.1. Se NÃO, em que circunstâncias não apresentam? _____

7.2. Se SIM, como são apresentados na maioria dos casos?

- ☐ Estudantes de Medicina, identificando o ano curricular
- ☐ Estudantes de Medicina, não identificando o ano curricular
- ☐ Colegas
- ☐ Outro

7.2.1. Se respondeu "Outro" na resposta anterior, refira de que forma é apresentado.

8. Quantos estudantes em média assistem habitualmente à consulta? _____

8.1. Em que grau considera que este número de alunos cause desconforto ao doente?

- ☐ Nenhum
- ☐ Baixo

- ☐ Moderado
- ☐ Elevado

9. Alguma vez sentiu que o doente estava desconfortável com a presença dos estudantes?

- ☐ Sim
- ☐ Não

9.1. Se SIM, comunicou ao tutor?

- ☐ Sim
- ☐ Não

9.1.1. Caso tenha respondido que SIM à questão anterior, qual foi a atitude tomada por parte do tutor? _____

10. Qual o grau de desconforto que sente face ao número de estudantes presentes na consulta?

- ☐ Nenhum
- ☐ Baixo
- ☐ Moderado
- ☐ Elevado

11. Qual o grau de desconforto que sente face ao número de estudantes presentes no internamento?

- ☐ Nenhum
- ☐ Baixo
- ☐ Moderado
- ☐ Elevado

12. Qual o grau de desconforto que sente face ao número de estudantes presentes no serviço de urgência?

- ☐ Nenhum
- ☐ Baixo
- ☐ Moderado
- ☐ Elevado

13. Discute com os seus tutores em termos técnicos na presença dos doentes?

- ☐ Nunca
- ☐ Já aconteceu
- ☐ Acontece frequentemente

13.1. SE respondeu "Já aconteceu" ou "Acontece frequentemente", o tutor ou estudante explicam ao doente o discutido?

14. Alguma vez revelou diagnóstico/prognóstico ao doente sem a presença do tutor?

- ☐ Sim
- ☐ Não

15. Alguma vez necessitou de ajuda para algum procedimento clínico sem estar na presença do tutor?

- ☐ Nunca
- ☐ Já aconteceu
- ☐ Acontece frequentemente

16. Informa o doente sobre o procedimento que vai aplicar, explicando o seu intuito e esclarecendo dúvidas?

- ☐ Nunca
- ☐ Já aconteceu
- ☐ Acontece frequentemente

17. Já alguma vez comentou com colegas um caso clínico em locais públicos (ex: cafetaria, elevador, corredor)?

- ☐ Sim
- ☐ Não

17.1. Caso tenha respondido positivamente à questão anterior, faz um esforço ativo para manutenção do anonimato do paciente?

- ☐ Nunca faço um esforço ativo para manutenção do anonimato do paciente
- ☐ Já fiz um esforço ativo para manutenção do anonimato do paciente
- ☐ Faço frequentemente um esforço ativo para manutenção do anonimato do paciente

18. Em que grau considera que a dinâmica da consulta, nas condições atuais, se adequa à aquisição de competências que é suposto os estudantes adquirirem?

- ☐ Nada adequado
- ☐ Pouco adequado
- ☐ Bastante adequado
- ☐ Totalmente adequado

18.1. SE respondeu "Nada adequado" ou "Pouco adequado", quais as principais limitações? _____

19. Conhece o Código de Ética Nacional para Estudantes de Medicina?

- ☐ Sim
- ☐ Não

19.1. SE SIM, como teve conhecimento? _____

- ☐ Nunca
- ☐ Já aconteceu
- ☐ Acontece frequentemente

19.2. SE SIM, considera que o mesmo deveria ser integrado em momentos de formação curricular no âmbito do ciclo clínico? _____

14.

- ☐ Nunca
- ☐ Já aconteceu
- ☐ Acontece frequentemente