



# ACADEMIC MISCONDUCT: ATTITUDES AND PERCEPTIONS OF BRAZILIAN MEDICAL STUDENTS

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## Abstract

*Academic misconduct during medical school is common, with multifactorial causes, and can negatively impact the training and professional performance of future physicians. This study investigated factors linked to academic misconducts among medical students during their training. It is a transversal, quantitative, and analytical study that assessed the perception of 240 students from five medical courses in Salvador, Bahia, Brazil. A virtual, semi-structured, anonymous, self-completed questionnaire was used, with sociodemographic and academic variables recorded. Behavioral patterns were analyzed using hypothetical situations based on medical students' code of ethics, and the data were compared based on participant and institutional characteristics. Results showed that medical students reported that ethical attitudes were maintained during graduation (98.3%) and the majority claimed to know the student code of ethics (89.2%). However, there was a high frequency of academic misconduct, especially "recording classes without authorization" (72.9%), "cheating on tests" (67.9%) and "improperly sign attendance lists" (65.0%). We observed a higher association of females with actions such as "cheating on exams"*

*and taking "pictures with anatomical parts and dummies". In addition, posting pictures with patients and taking on duty without medical supervision occurred more frequently among students from private schools. Although the students considered themselves to be ethical, a high frequency of inappropriate behavior in academic situations was evidenced. This scenario points to the need for greater attention to training based on moral and ethical commitment in academic activities, with a view to future professional performance.*

**Keywords:** *cross-sectional studies, higher education, medical education, medical ethics, medical students*

## Introduction

Medical students, according to the National Curriculum Guidelines (NCG), should be trained to act with "professional ethics based on the principles of Ethics and Bioethics, taking into account that the responsibility of health care does not end with the technical act" (Brazil, 2014). For this purpose, higher education institutions (HEI) should reflect on the teaching-learning process, ensuring that ethical reflection is longitudinally present in the institutional and academic spheres, in interpersonal relationships, and in medical practice (Chazan et al., 2015; Brazilian Council of Medicine, 2018, 2019).

From this perspective, among the teaching strategies used to promote professional and ethical development are presentations, lectures, and discussions of real cases, which can generate reflection on the subject (Azim & Shamim, 2020; Ghias et al., 2014; Shamim et al., 2020). More recently, in line with methodological changes in higher education didactics, new strategies, such as simulation-based learning, have also been tested in order to contribute to the ethical formation of students (Shamim et al., 2020). Besides formal academic activities, there is evidence that the hidden curriculum can impact this training, since attitudes and behaviors that prevail in the academic environment interfere with student learning (Liu et al., 2020; Zulkifli et al., 2018). Nevertheless, academic misconduct such as plagiarism, cheating on tests, individual use of collective academic material, and unauthorized recording of classes are commonly observed (Anderson & Obenshain, 1994; Gitanjali, 2004; Sousa et al., 2016). These attitudes, during the training phase, can be associated with inappropriate behavior in clinical-professional settings (Rafati et al., 2020; Satterwhite, 2000). Thus, the teaching of ethics in medical training is still a topic of global concern, since it is potentially harmful to the professional behavior of future physicians (Mubeen et al., 2017; Sousa et al., 2016).

The fact that, nowadays, technological innovations and the popularization of social media have favored and multiplied these types of behaviors among students is aggravated. Dealing with the professionalism manifested by digital means has been, therefore, a challenge for educators. Besides being something new and constantly evolving, the misuse of these tools can generate harmful consequences, both for offenders and for society (Kaczmarczyk et al., 2013; Rosenstein, 2011; E. S. Souza et al., 2017). S. Souza et al., 2017).

The above-mentioned factors pose academic misconduct in the epicenter of the critical discussions in different departments of medical schools. Solutions focused on dampening the prevalence of unethical behavior of medical students involve understanding the triggers of these attitudes, although there are many challenges to assess such sensitive information while interviewing students. Given the relevance of this theme and the need for ethical and moral reflection in medical education, this study aimed to evaluate the perception of students regarding their behaviors and practices in the academic environment during their medical training to identify biological, epidemiological, and socioeconomic characteristics associated with the occurrence of academic misconduct. Profiling the characteristics and self-perception of the students about the behaviors that may be considered, misconduct is critical to guide institutional decision-making strategies to mitigate this prevalent problem.

### *Hypotheses*

Although largely disregarded, academic misconduct (i.e., plagiarism, cheating on tests and individual use of collective academic material) is highly prevalent among Brazilian medical students with probable future association with inappropriate behavior in clinical-professional settings.

## **Research Methodology**

### *General Background*

The actual research took place in the first semester of the 2021 academic year (January-June 2021). A cross-sectional study was performed to evaluate the perception of students regarding their behaviors and practices in the academic environment during their medical training. The main objective was to identify biological, epidemiological, and socioeconomic characteristics associated with the occurrence of academic misconduct. To perform this assessment, potential respondents were invited to participate by using a non-probability method sampling technique, in which the first participants recruit new respondents among their pairs through student networks and social media. From these groups, other students were invited to take part in the study by answering a semi-structured electronic survey.

The study was descriptive and analytical, with a quantitative approach in students from five different medical schools in Salvador, Brazil. Considering an estimated population of 6360 students, 95% reliability and a 5% margin of error, the sample was composed of 240 medical students older than 18, regularly enrolled in public and private medical schools in the city. Among the study participants, 72.1% were female, 48.3% white, with an average age of 24.3 + 4.9 years, and 75.4% from private educational institutions.

The present study is under Resolutions 466/12 and the Brazilian Research Ethics Committee (CAAE: 40128020.4.0000.5032) approved 510/16 of the Brazilian National Health Council. The participants' autonomy, confidentiality, and privacy were respected. All study participants were informed about the research objectives and method and signed the Informed Consent Form.

### *Instrument and Procedures*

Respondents were invited to take part in the research through the snowball method, a non-probability sampling technique in which existing study subjects recruit future subjects. The first subjects were members of the Health Education Research Group (GPEDUCS) who recruited new respondents through their groups in messaging applications comprising medical students in the city.

An invitation and an electronic semi-structured form were sent. It contained questions about the sociodemographic profile (age, gender, race, presence of medical family members, desired specialty) and academic profile (administrative modality of the higher education institution, academic cycle [basic - from the first to the fourth semester; clinical - from the fifth to the eighth semester; internship - from the ninth to the 12th semester] and existence of scholarship or student financing).

In addition, the respondents' perceptions of hypothetical academic situations were examined, based on the Medical Student Code of Ethics (Brazilian Council of Medicine, 2018). For each of the proposed situations, a 5-point Likert scale was used (totally or partially agree; neither agree nor disagree; totally or partially disagree). The responses that were in strict disagreement with the Medical Student Code of Ethics misconduct.

### *Data Analysis*

The data were tabulated in Excel and analyzed by Graph Pad Prism 8.0. For categorical data, the Pearson's chi-square test was used, and differences with p-values <.05 were considered statistically significant.

## **Research Results**

### *Sample Characteristics*

Most participants believed they were ethical (98.3%) and reported knowledge of the Medical Students' Code of Ethics (89.2%). However, only 2.9% of these students claimed to have full knowledge of its content (Table 1).

**Table 1**

*Profile of the Medical Students and Their Perceptions About Academic Ethics.*

Category	Sample (n=240)
Gender, n (%)	
Female	173 (72.1)
Male	65 (27.1)
Not answered	2 (.8)
Age (Years old)	
Mean $\pm$ Standard Deviation	24.3 $\pm$ 4.90
Minimum	18
Maximum	46
Institution Type, n (%)	
Private	181 (75.4)
Public	59 (24.6)
Academic Cycle, n (%)	
Basic	47 (19.6)
Clinical	127 (52.9)
Internship	66 (27.5)
Scholarship, n (%)	
Yes	59 (24.6)
No	181 (75.4)
Do you consider yourself ethical? n (%)	
Yes	236 (98.3)
No	4 (1.7)
Do you know the Medical Student Ethical Code? n (%)	
Yes	214 (89.2)
No	26 (10.8)
How much do you know about the Medical Student Ethical Code? n (%)	

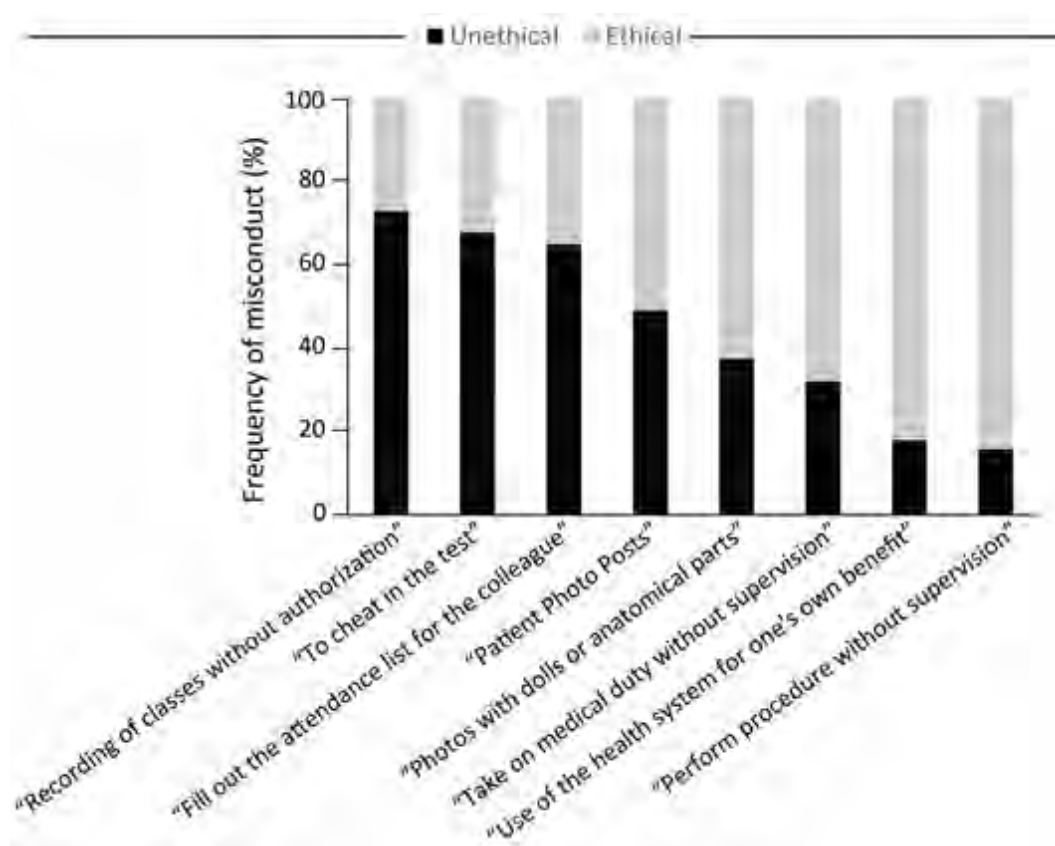
Know completely	7 (2.9)
Know a good part	69 (28.8)
Know a little	122 (50.8)
Don't know	42 (17.5)

Note: Absolute Number; %: Percentage; HEI: Higher Education Institution.

Regarding the academic situations, we observed a high prevalence of misconducts performed by medical students, the most frequent being "recording classes without authorization" (72.9%), "cheating on tests" (67.9%), "signing the attendance list by a classmate" (65.0%) (Figure 1).

**Figure 1**

*Frequency of Academic Misconducts among the Medical Students*



*Factors Associated with Academic Misconduct*

When analyzing misconducts according to sociodemographic and academic variables, we observed a greater association of females with actions such as "cheating on tests" and "taking pictures with anatomical parts or dummies". In addition, "posting photos with patients" and "taking on duty without medical supervision" occurred more frequently among private school students. It was also found that "using the public health system for personal benefit" occurred more frequently among boarding school students, while "recording classes without

permission from professors” showed an association with students who had a scholarship or student funding (Table 2).

**Table 2**  
*Analysis of the Academic Conducts According to the Profile of the Medical Students*

Academic Status, n (%)	Conduct		p-value and statistical significance
	Inadequate	Adequate	
<b>"Cheating on Tests"</b>			
Female	142 (82.1)	31 (17.9)	$\chi^2 = 6.924$ $df = 1$ $p = .0089$
Male	43 (66.2)	22 (33.8)	
<b>"Pictures with Anatomical Parts or Dummies"</b>			
Female	75 (43.4)	98 (56.6)	$\chi^2 = 8.260$ $df = 1$ $p = .0041$
Male	15 (23.1)	50 (76.9)	
<b>"Posting Photos with Patients"</b>			
Public HEI	17 (28.8)	42 (71.2)	$\chi^2 = 12.97$ $df = 1$ $p = .0003$
Private HEI	101 (55.8)	80 (44.2)	
<b>"Taking Over Duty without Supervision"</b>			
Public HEI	9 (15.3)	50 (84.7)	$\chi^2 = 9.739$ $df = 1$ $p = .0018$
Private HEI	67 (37.0)	114 (63.0)	
<b>"Used Health Care System for Their Own Benefit"</b>			
Basic	3 (6.4)	44 (93.6)	$\chi^2 = 9.720$ $df = 2$ $p = .0078$
Clinical	21 (16.5)	106 (83.5)	
Internship	19 (28.8)	47 (71.2)	
<b>"Recording of Classes without Authorization"</b>			
With Funding/Scholarship	53 (89.8)	6 (10.2)	$\chi^2 = 6.093$ $df = 1$ $p = .0136$
Without Funding/Scholarship	135 (74.6)	46 (25.4)	

Note: Absolute Number; %: Percentage Within Each Variable Category; HEI: Higher Education Institution.

## Discussion

Although there is a perception of adequate training and ethical behavior among medical students (Elzubeir & Rizk, 2003; Satterwhite, 2000; Yadav et al., 2019), some evidence contradicts this impression (Anderson & Obenshain, 1994; Feudtner et al., 1994; Gitanjali, 2004). This paradox is confirmed in the present study, where it was shown that although there is a high frequency of inappropriate behavior in the academic environment, all participants consider themselves ethical and report knowing the Medical Student Code of Ethics (Brazilian Council of Medicine, 2018).

This scenario suggests that attempts to develop theoretical-practical models to encourage ethical behavior in medical school should be developed (Madani et al., 2020). For this purpose, among the needs for changes in the teaching model are (i) rethinking the education offered to change attitudes, (ii) rethinking the regulations and processes to favor ethical practice, and (iii) conducting more comprehensive and systematic studies (Madani et al., 2020). It is important

to emphasize that, despite the recommendations of NCG, there is stagnation in the number of specific disciplines that address medical ethics, with a low workload and reduced number of exclusive professors (Dantas & Sousa, 2008). It is necessary to take a critical look at the teaching of ethics by professors regarding the preparation of these students (Dantas & Sousa, 2008). In this context, there has been an increase in the number of studies that evaluate non-professional behavior. However, a considerable number of them still lack methodological robustness (Damiano et al., 2019).

The present study raises a reflection about the academic misconduct practiced by medical students during their training. The sample analyzed was composed of students from five medical schools in the city of Salvador, Bahia, Brazil, mostly female, from private institutions, and of white and brown race. These characteristics agree with other studies and with the trends showed by the census of medical students in Brazil, (National Institute of Educational Studies and Research Anísio Teixeira, 2020; Martins et al., 2013; Phillips & Austin, 2009; Souza et al., 2020) reinforcing the idea that the results reported here have enormous potential to infer what occurs at regional and perhaps national levels.

Upon further analysis, we noted that some student characteristics were associated with misconduct during undergraduate study. Our data evidenced, for example, a female predominance in actions such as "cheating" on assessments. These results are worrisome and may reflect the great burden of self-charge and stress associated with women during undergraduate studies to ensure a better performance in their professional careers (Sadir et al., 2010). In line with this, a recent study of 395 Iranian nursing students found a higher prevalence of professional misconduct among women and a positive correlation with perceived stress (Rafati et al., 2020).

The publication of photos with models and anatomical parts in class labs was also significantly more prevalent among female students. It is possible that the greater representation and involvement of women in social media may induce students to make excessive records of their daily academic life (Andreassen et al., 2017; Melo et al., 2004; Rocha & Castro, 2014). Therefore, educators should know the excesses, because there is a concern that potentially inappropriate behaviors, such as taking photographs and videos of anatomical parts, may become publications of unauthorized images by patients, violating the privacy criteria (Ghias et al., 2014).

Although the effect of interest in and use of social media on the professional behavior of physicians remains inconclusive, some data support the need for greater attention. Potentially unprofessional use of social media has been demonstrated, as well as a lack of guidance on their use during clinical training (Sterling et al., 2017).

Regarding the administrative category of the HEIs, it is known that in Brazil, the medical courses are offered by mostly private educational institutions. This data is important, since it may represent significant differences in the structure, performance model, and profile of the faculty and students. In this scenario, when analyzing the academic conduct of students and the administrative nature of the HEIs, it was observed that students from private institutions act professionally and without supervision more regularly. A strong tendency towards the commercialization of medical education is perceived in view of the high monthly fees. This behavior may induce students to resort to illegal conduct to obtain financial resources to make their training viable. Moreover, practice environments can often be opportunistic, creating scenarios that are permissive to the occurrence of unprofessional conduct (Santos et al., 2020; Zulkifli et al., 2018).

Regarding the use of the health system for their own benefit, it was shown that this occurs more regularly in the last years of medical school. This behavior may be associated with the ease of access to these services, considering the insertion of these students in the internship. Moreover, it was observed that this behavior is progressive, increasing its intensity throughout training. It has been reported that as students advance from the basic cycle to the internship;

they become less sensitive to the decline in ethical behavior (Feudtner et al., 1994; Zulkifli et al., 2018). The progressive adherence of these students to the health system during graduation, associated with the large network of contacts in clinical practice, may also be responsible for the diverse possibilities of insertion into the benefits.

The perception of the naturalness of academic misconduct during medical school is on the rise (Feudtner et al., 1994). Corroborating this finding, they demonstrated that the perception regarding derogatory comments about patients made by resident physicians was significantly higher among third- and fourth-year students when compared to first-year students (Satterwhite, 2000). These findings suggest that the medical course may favor the loss of perception of ethical-professional behavior throughout training (Satterwhite, 2000).

Ethical decline in medical students can sometimes arise in subtler ways, such as when they record classes without the professor's permission. In the present study, this situation was more frequently observed among students who reported having a scholarship or student financing. This fact may be associated with the pressure suffered by these students to maintain good academic performance during the validity of institutional scholarships or government funding. On the other hand, there are data associating the existence of scholarships with better earnings in several areas of knowledge, including Medicine (Kaczmarczyk et al., 2013; Mulyaningsih et al., 2022; Nasu & Sasso, 2021).

Other misconducts worth mentioning are signing the attendance list for someone else and performing procedures without supervision. It is suggested that the hidden curriculum enables non-professional behaviors as alternatives for dealing with excessive workloads, self-charging, exacerbated competitiveness, and an abundance of responsibilities (Chung et al., 2019). Therefore, academic misconduct can be adopted as an alternative to overcome obstacles inherent in the course and achieve full curricular training. These impressions can be the basis for further reflection on a better composition of the medical curriculum. Does the larger the curriculum, the better the professional training?

In this scenario, it is assumed that medical schools are being tolerant of academic and professional misconduct by faculty and administration, which contributes to a hidden curriculum that can negatively impact the ethical training of their students (Gitanjali, 2004; Vidal et al., 2015). In addition, it is known that professors still have great difficulty in dealing with student misconduct, and in this context, they face barriers such as lack of institutional recognition and contact with specialists (Muhaimin et al., 2021), making moderation attitudes difficult.

In a survey of deans of American and Canadian medical schools, 94% of respondents considered ethics courses mandatory for all students. Additional studies reveal that 66% of academics reiterated their desire to learn more about ethics and 84% considered medical ethics to be fundamental to good clinical care (Brazilian Council of Medicine, 2019). Regardless of specialty, physicians are tasked with caring for patients in delicate and vulnerable situations, where they will encounter various ethical dilemmas throughout their career. Therefore, strengthening the moral and ethical foundation in medical training is of utmost importance.

For this reason, there is still discussion about medical ethics courses and their challenges regarding content, method, course evaluation, and evaluation of the students themselves (Spooner et al., 1989). There is no consensus on how these ethical and moral principles should be developed in the academic field, but it is suggested that their contents permeate the entire medical curriculum, favoring ethical reflection. In addition, it is recommended that teaching be based on clinical examples and that an assessment of student learning is performed, since this drives the educational content, method, and, more particularly, the students' priorities (Spooner et al., 1989).



## Conclusion and Implications

This study established a reflection on the unethical academic behaviors practiced by Brazilian medical students during their training. It has been shown that, although medical students considered themselves to be ethical, a high frequency of academic misconduct was observed. In the academic environment, behaviors such as “recording classes without authorization,” “cheating on test” and “improperly sign attendance lists” were strongly present among Brazilian medical students. In the professional sphere, emphasis was given to “posting pictures with patients” and “taking on duty without medical supervision.”

This scenario shows an urgent need for ethical and moral reflection throughout medical education. The ongoing discussion about academic misconduct in medical training environments is a challenge, but it is a strategy necessary in order to prevent inappropriate behavior in clinical-professional settings. Greater investments in training based on ethical and moral commitment in academic and professional activities can support the development of professionalism, and this should be a central objective in medical training.

Despite these relevant findings, further research is needed to understand the triggers of these inappropriate attitudes. These future investigations could help to implement solutions that mitigate the prevalence of unethical behavior among medical students.

## Declaration of Interest

Authors declare no competing interest.

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