Evaluation of medical interns' attitudes towards relevant aspects of medical practice

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Summary

Introduction: In traditional medical school curriculum, sixth-year is the moment in which students experience medical practice more intensively. Attitudes can be considered predictors of behaviors and actions. Evaluating them contributes to improve medical training.
Objective: To evaluate attitudes during medical internship considering medical practice and associated factors in a Brazilian public university.
Method: Cross-sectional study that included 69 students, based on a structured questionnaire and an attitude scale (Colares, 2002). We used descriptive statistics, with classification of the attitude tendency, clusters analysis and F-statistics.
Results: The average age of the participants was 25.1±1.9, and 56.5% of them were male. Students presented positive attitudes to emotional aspects in organic diseases, primary health care, the medical contribution to the scientific advancement of medicine, and other aspects of medical activity and health politics; there were conflicting attitudes concerning mental illness and negative attitudes concerning death.
Conclusion: Results show the need for interventions in order to reduce the identified conflicting and negative attitudes.

Keywords: medical students, attitude, medical education, doctor-patient relationship.

Introduction

Medical education and practice have undergone transformations throughout history. Scientific developments and key therapeutic advances have emerged, but medicine has become fragmented, focusing more on disease than on the patients, affecting the doctor-patient relationship.[1]

Traditional medical training focuses on technical performance. The traditional medical curriculum conveys, in its teaching methods, the impression of fragmented learning, knowledge hierarchization and disintegration, and resistance to "de-hospitalization." In the last decades, the traditional model of medical training has been criticized and the importance of preparing a professional sensitive to human needs has gained space.[2] Educators recognized the importance of patient-centered training, but the culture of medical education focused primarily on illnesses may represent an obstacle to the development of student attitudes in this regard.[3]

One of the meanings of the word attitude, according to the monolingual Brazilian Portuguese dictionary by Aurélio Buarque de Holanda, is "reaction or way of being, in relation to people and objects."[4] In general, attitudes are behaviors that determine how individuals position themselves before people and events.[5]

In recent years, the focus has been on developing positive attitudes toward aspects common to all medical students. One of the goals of medical training has been to develop these attitudes. For this, there is a search for measurement instruments and interventionist measures.[3,5-7] Assessing the attitudes of medical students has been the subject of studies by several authors.[8-15]

Medical undergraduate courses promote experiences that enable the acquisition of attitudes, values and behavior patterns as a consequence of the contact with several players, including instructors/professors, other students, patients and members of the health team.[16] In medical courses that follow a traditional curriculum, internship is the time when students experience medical practice more intensively. In this period, the student ex-

periences the transition from a theoretical basis to active practice, starts discussing cases and treating patients under the guidance of physicians, working on aspects such as the doctor-patient relationship. This is the moment when a professional builds his or her identity, adopting a posture that will reflect their practice. Based on the assumption that attitudes can be considered as predictors of behaviors and actions, evaluating students' attitudes to relevant situations in medical practice contributes to the improvement of the training of future physicians.[2,5]

Medical training should include technical preparation, ethics, ability to develop an empathic doctor-patient relationship, and social responsibility, that is, biopsychosocial training. Thus, the future medical professional is expected to assume a differentiated posture that, together with his or her knowledge and scientific development, projects positive attitudes towards aspects of medical practice. Thus, our study aims to evaluate students' attitudes during medical internship at a public university in the Northeast of Brazil, facing relevant situations in medical practice, and assessing whether their attitudes differ according to sociodemographic variables, personal aspects and process educational.

Method

Study site

The Health Campus of a public university in northeastern Brazil was the site of this study. This medical course is based on the traditional model of medical education, with 12 semesters divided as follows: from the 1st to the 4th semester (Basic Sciences Cycle), from the 5th to the 9th semester (Preclinical Cycle) and from the 10th to the 12th semester (Internship / Clinical Cycle). At the time of data collection, the Internship course had 100 students.

Target population and study population

All 100 internship students were invited to participate, but only 69 accepted.

Study design and data collection

This is an observational cross-sectional analytical study. Data collection was performed on a single occasion in March 2015. Only those who refused to participate in the survey were excluded.

Student privacy was respected during data collection. Secrecy of identity was also guaranteed, so that when the students returned their questionnaires, the free and informed consent form was placed in a separate unidentified envelope, and then inserted in a sealed urn.

Instruments

Two instruments were used for data collection: 1) A structured questionnaire elaborated by the authors on sociodemographic characteristics, personal aspects and educational process; 2) A Medical Students Attitude Scale (validated by Maria de Fátima Colares et al. in the study "Building an Instrument for Assessing the Attitudes of Medical Students to Relevant Aspects of Medical Practice"). This is a Likert-type scale, with a high degree of internal consistency, expressed by a Cronbach's alpha coefficient with a high reliability value (a=0.86). The instrument contains 52 items, with five options of answer (1: totally agree; 2: partially agree; 3: not sure; 4: partially disagree; 5: totally disagree). The scale items are divided into favorable and unfavorable statements against the following aspects, which represent the factors of the scale:

- Factor 1. Psychological and emotional aspects in organic and mental diseases. This factor is composed of 11 items and evaluates the importance attributed by the students to the role of the emotional state in the course of the diseases.
- Factor 2. Management of death-related situations. This factor has eight items that aim to show the degree of difficulty of students in situations related to death.
- Factor 3. Primary health care. This factor has 11 items on the importance of the general practitioner, and the practice of preventive medicine by any medical specialist.
- Factor 4. Aspects related to mental illness. This factor is constituted by eight items and analyzes the feelings and difficulties of the student regarding patients with mental disorder.
- Factor 5. Contribution of the doctor to the scientific advancement of medicine. This aims, through six items, to know what students think about the importance of research in their medical careers.
- Factor 6. Other aspects related to medical practice and health policies. Composed of eight items, this factor analyzes the students' attitudes regarding various aspects related to medical practice, and some issues focusing on mental health policies.

Data analysis

For each item on the scale, there were five options for answers and the interns should choose the one that expressed their opinion about each statement. From the completed questionnaires, elaborated so that the answers were already codified, a database was built on a statistical program.

The analysis was performed using descriptive statistics to describe the profile of the population studied and then the responses to the items expressing favorable attitudes were awarded 1 to 5 points for the five options, according to the intensity of agreement expressed by the subjects surveyed. Likewise, responses to items expressing negative attitudes received a score of 1 to 5 points, in reverse, according to the intensity of the discordance contained in the response. Thus, for each student a point score was determined relative to the items of each of the six factors. To categorize the students' attitudinal trend, a mean (M) of the scores was calculated for each factor studied. The results were interpreted as follows:

- M<3: predominantly negative attitudes;
- M between 3 and 3.9: conflicting or indefinite attitudes;
- M>4: predominantly positive attitudes.

Multivariate cluster analysis was used to evaluate the variables with the greatest discrimination capacity among individuals, making it possible to classify them into three subgroups. F statistic was used to determine the discrimination capacity of the variables.

Ethical considerations

The study was presented to the institution's Ethics Committee on Research in Humans and approved according to CAAE 38995814.1.0000.5546. Participants signed a free and informed consent form. All proposed and approved ethical procedures were rigorously followed by the research team.

Results

Sixty-nine (69) students participated in the study. The distribution of sociodemographic, personal and academic variables is presented in Tables 1 and 2, respectively.

We observed that students had a higher percentage of predominantly positive attitudes in four of the six aspects evaluated, and a higher percentage of predominantly negative attitudes in the case of Factor 2 (Table 3).

TABLE 1 Distribution of medical interns from a public university according to sociodemographic variables, Aracaju (Sergipe, Brazil), 2015.

Variables	N	%	Mean
Total	69	100	
Age (years)			25.1±1.9
Sex			
Female	30	43.5	
Male	39	56.5	
Religion			
Yes	42	60.9	
No	27	39.1	
Marital status			
Single	65	94.2	
Married	3	4.3	
Separated/divorced	1	1.4	
Place of origin			
State capital	48	69.6	
Other locations within the state	11	15.9	
Other states	10	14.5	
Income			
1 to 10 minimum wages	29	42	
11 to 20 minimum wages	29	42	
Over 20 minimum wages	11	15.9	
Lives with			
Relatives	58	84.1	
Friends or classmates	2	2.9	
Alone	9	13	

TABLE 2 Distribution of medical interns from a public university according to personal aspects and academic variables, Aracaju (Sergipe, Brazil), 2015.

Variables	N	%
Total	69	100
Has a doctor in the family		
Yes	36	52.2
No	33	47.8
Previously diagnosed mental disorder		
Yes	5	7.2
No	64	92.8
Use of psychoactive medication		
Yes	10	14.5
No	59	85.5
Experienced severe illnesses		
Yes	35	50.7
No	34	49.3
Satisfaction concerning teaching strategies		
Yes	6	8.7
No	63	91.3
Has emotional support in the context of medical training		
Yes	10	14.5
No	59	85.5
Expectations for the course		
Meets my expectations	33	47.8
Does not meet my expectations	36	52.2
Academic performance		
Satisfactory	48	69.6
Unsatisfactory	21	30.4

TABLE 3 Classification of the attitudes of medical interns from a public university regarding relevant aspects of medical practice, Aracaju (Sergipe, Brazil), 2015.

Factors	N	%
Total	69	100
Factor 1. Emotional aspects in organic diseases		
Predominantly positive	59	85.5
Conflicting	10	14.5
Factor 2. Death-related situations		
Predominantly positive	2	2.9
Conflicting	33	47.8
Predominantly negative	34	49.3
Factor 3. Primary health care		
Predominantly positive	50	72.5
Conflicting	19	27.5
Factor 4. Aspects related to mental illness		
Predominantly positive	11	15.9

(*Continues*)

TABLE 3 (Cont.) Classification of the attitudes of medical interns from a public university regarding relevant aspects of medical practice, Aracaju (Sergipe, Brazil), 2015.

Factors	N	%
Conflicting	36	52.2
Predominantly negative	22	31.9
Factor 5. Contribution of the doctor to the scientific advancement of medicine		
Predominantly positive	39	56.5
Conflicting	23	33.3
Predominantly negative	7	10.1
Factor 6. Other aspects related to medical practice in the community		
Predominantly positive	50	72.5
Conflicting	17	24.6
Predominantly negative	2	2.9

In the multivariate group analysis, seven variables allowed students to be divided into three subgroups (Table 4).

Group III corresponds to individuals with a lower average age among the three groups, a lower frequency of students who consider their performance unsatisfactory and a higher percentage of individuals with unmet expectations. In addition, it presents the lowest frequency of positive attitudes regarding Factors 5, 4, 3 and 1 (Table 4).

Group II presents the highest mean age, higher frequency of students who consider their performance unsatisfactory and greater frequency of expectations about the course met than group III. There was also a high percentage of positive attitudes for Factors 1 and 3, a low value for Factor 4 and intermediate values for Factors 5 and 6 (Table 4).

Group I presented mean age similar to group III (younger), a high percentage of satisfaction with academic performance, higher expectations regarding the course attended, high percentage of positive attitudes to Factors 1, 3, 5 and 6, and higher frequency of positive attitudes for Factor 4 (Table 4).

Discussion

The population studied has interesting demographic, personal and educational characteristics. Participants included young individuals, most of whom were single, practiced a religion, lived with relatives, had experience with serious illnesses, had medical doctors in their families, had never been diagnosed with a mental disorder by a psychiatrist, were unhappy with the teaching strategies used, believed that they did not receive the emotional support they need, and claimed that the medical course did not meet their expectations. However, they point out that they have a good academic performance. This leads us to assume that having doctors in their families encourages them to continue the course even in situations of dissatisfaction.

Previous research with a similar population has demonstrated a high prevalence of common mental disorder, depressive symptoms and burnout syndrome among medical students. However, in these surveys, participants also said that they had never been diagnosed with any mental disorder by a psychiatrist.[17,18] This reinforces the need for more research on the mental health of students for early identification of psychopathological symptoms and planning of appropriate preventive measures, thus avoiding the worsening of such symptoms.

An earlier study in the same institution estimating the prevalence of common mental disorders (CMD) among medical students throughout the course demonstrated there was a progressive increase of CMD, from 12.5% among freshmen to 54% during internship. After adjusting for the final logistic regression model, the authors identified that the main associated factors were related to the teaching-learning process and the psycho-emotional aspects.[18] Thus, it is possible that characteristics peculiar to internship, namely growing pressure and concern to prepare students to enter the labor market or a medical residency, not only affect the students' mental health but also possibly compromise their attitudes regarding relevant aspects of medical practice.

Positive attitudes predominated against four of the six aspects evaluated: Factor 1 (psychological and emotional aspects in organic and mental diseases); Factor 3 (primary health care); Factor 5 (contribution of the doctor to the scientific advancement of medicine); and Factor 6 (other aspects related to medical practice and health policies). Studies in other Brazilian public universities show similar results.[12,13]

This similarity of positive attitudes towards the same aspects in different studies corroborates the importance of evaluating the way students face everyday situations of

TABLE 4 Distribution of medical interns from a public university in the state of Sergipe according to the multivariate cluster analysis, Aracaju (Sergipe, Brazil), 2015.

Variables	Group I N	Group II N	Group III N
Age (years)	24.3±1.0*	27.8±1.0*	23.9±1.9*
Academic performance			
Unsatisfactory	7 (21.9%)	10 (55.6%)	4 (21.1%)
Satisfactory	25 (78.1%)	8 (44.4%)	15 (78.9%)
Expectations for the course			
Meets my expectations	21 (65.6%)	8 (44.4%)	4 (21.15%)
Does not meet my expectations	11 (34.4%)	10 (55.6%)	15 (78.9%)
Factor 1. Emotional aspects in organic diseases			
Positive attitudes	31 (96.9%)	15 (83.3%)	13 (68.4%)
Conflicting attitudes	1 (3.1%)	3 (16.7%)	6 (31.6%)
Factor 3. Primary health care			
Positive attitudes	28 (87.5%)	15 (83.3%)	7 (36.8%)
Conflicting attitudes	4 (12.5%)	3 (16.7%)	12 (63.2%)
Factor 4. Aspects related to mental illness			
Positive attitudes	11 (34.4%)	0	0
Conflicting attitudes	19 (59.4%)	7 (38.9%)	10 (52.6%)
Negative attitudes	2 (6.3%)	11 (61.1%)	9 (47.4%)
Factor 5. Contribution of the doctor to the scientific advancement of medicine			
Positive attitudes	26 (81.3%)	11 (61.1%)	2 (10.5%)
Conflicting attitudes	6 (18.8%)	7 (38.9%)	10 (52.6%)
Negative attitudes	0	0	7 (36.8%)
Factor 6. Other aspects related to medical practice in the community			
Positive attitudes	29 (90.6%)	12 (66.7%)	9 (47.4%)
Conflicting attitudes	3 (9.4%)	6 (33.3%)	8 (42.1%)
Negative attitudes	0	0	2 (10.5%)

*Mean

medical practice and, in addition, elucidates two axes discussed in medical education: vocation and skill acquisition.

Evaluating by the scope of the medical vocation, these positive attitudes are intrinsic to the student, and relate to the personal characteristics of those who choose the medical career.[19] As for skill acquisition, medical courses promote experiences that enable the development of attitudes, values and behavior patterns as a consequence of the contact with several players, namely instructors/professors, other students, patients and members of the health team.[16]

It is important to note that the results found in our study were, in part, similar to those obtained in the pioneering study by Troncon et al.[3] However, while our study showed a predominance of positive attitudes regarding Factor 5 (contribution of the doctor to the scientific advancement of medicine) and negative attitudes regarding Factor 2 (management of death-related situations), the research carried out by Troncon et al.[3] revealed a predominance of conflicting attitudes for these two factors. This fact deserves more research and reflection, since the study was performed at a major research center in Brazil.

With regard to attitudes towards mental illness (Factor 4), our study showed that the students presented predominantly conflicting attitudes. Considering that studies indicate that 30 to 50% of hospitalized patients present psychiatric symptoms,[20] the result of this factor is worrisome, since it analyzes the student's feelings and difficulties in treating patients with mental disorders. We must consider that the emotional aspect is often neglected in medical student training, leading to deficiency in physician rapport with the human being in front of him or her.[21]

The prevalence of negative attitudes towards Factor 2 (management of situations related to death) in our study and in similar works[12,13] is well explained by the idea that death motivates emotional difficulties among all healthcare professionals, and is often perceived as medical failure, generating anxiety in the doctors themselves.[22] Moreover, in Brazil, thanatology is not adequately addressed in un-

dergraduate courses, it is up to the students to seek knowledge or deny the difficulty, which leads to failures in communicating bad news to patients and their families.[23]

A qualitative study with students of the fourth and sixth year of the Botucatu Medical School – Unesp described that both fourth- and sixth-year students considered death a taboo because it is a subject little discussed in medical training.[24] We emphasize that, in addition to scientific technical knowledge, interpersonal skills are important for medical training.

A study carried out in a Brazilian university hospital aimed to determine the profile of students, physicians and medical instructors/professors before death and terminally ill patients. The authors observed that the vast majority of respondents were interested in the subject, but had difficulties approaching it.[25] Another study using the Attitude Scale[5] showed that second- and sixth-year medical students had a predominantly negative attitude in death-related situations.[13] These data indicate that physicians must have great emotional balance to deal with such demands and suffer less from each death they witness. The importance of preparing the future doctor in this respect cannot be underestimated.

As for the contribution of the doctor to the scientific advancement of medicine (Factor 5), students demonstrated predominantly positive attitudes, meaning they consider scientific research as part of the medical career and think the physician's work contributes to the advancement of medicine. This may be a consequence of the opportunities in scientific initiation projects offered by the country's public institutions. There are authors who have demonstrated the growing interest of medical students in participating in this type of project during their undergraduate course.[26,27]

Our study has limitations that should be considered in the analysis. The number of students enrolled in the internship at the time of data collection was reduced due to a delay in the semester caused by a strike. In addition, it is possible that the few students who refused to participate were precisely those who were more committed to their attitudes, which could worsen the results. Besides, we can not attribute causality to the associations found, since our study is transversal and, thus, outcome and exposure are analyzed simultaneously. In spite of this, the findings of our study are useful to promote a deeper contemplation about the teaching-learning process in medicine and to subsidize preventive strategies to the psychological suffering of the student, also contributing to the planning of the pedagogical model of the course with a view to changing the conflicting attitudes and negative aspects of students in relation to relevant aspects of medical practice. We thus believe that more studies on the subject are necessary, especially with longitudinal and qualitative design, which will contribute to verify the consistency of the results obtained in our study.

Conclusion

In this sample of interns, the results showed predominantly positive attitudes towards some relevant aspects of the medical practice, indicating that the medical training is in line with the educational objectives. However, in relation to other aspects, such as those related to mental illness and death, the attitudes were respectively conflicting and negative, evidencing the need for specific educational interventions. Cluster analysis allowed us to infer that attitudes differ according to academic variables.

Resumo

Avaliação de atitudes de internos de medicina frente a aspectos relevantes da prática médica

Introdução: No curso de medicina com currículo tradicional, o internato é o momento em que o estudante vivencia as experiências da prática médica de forma mais intensa. Atitudes podem ser consideradas preditoras de comportamentos e ações, e avaliá-las contribui para aperfeiçoar a formação desses futuros médicos.
Objetivo: Avaliar atitudes dos internos de medicina frente à prática médica e a fatores associados em uma universidade pública brasileira.
Método: Estudo transversal com 69 alunos, por meio de questionário estruturado e da Escala de Atitude (Colares, 2002). Foram realizados estatística descritiva, categorização da tendência atitudinal, análise de agrupamentos (*clusters*) e estatística F.
Resultados: Média de idade foi 25,1±1,9 anos e 56,5% eram do sexo masculino. Os estudantes apresentaram atitudes positivas frente aos aspectos emocionais nas doenças orgânicas, atenção primária à saúde, contribuição do médico ao avanço científico da medicina e outros aspectos relacionados à atuação médica e às políticas de saúde, e apresentaram atitudes conflitantes frente à doença mental e negativas frente à morte.
Conclusão: Os resultados mostram a necessidade de intervenções que visem a reduzir as atitudes conflitantes e negativas identificadas.

Palavras-chave: estudantes de medicina, atitude, formação médica, relação médico-paciente.

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