

Impacto da “Disciplina Relação Médico-Paciente” sobre Atitudes Centradas no Paciente

The Impact of a “Doctor-Patient Relationship” Discipline on Patient-Centred Attitudes

Luciana Diniz Silva¹
Maria Mônica Freitas Ribeiro¹
Anelise Impelizeri Nogueira¹
Bruna Sodré Reis¹
Isabela Lopes Barbosa¹
Andreia Maria Camargos Rocha¹
Leonardo Maurício Diniz¹

RESUMO

Vários estudos têm demonstrado que as atitudes centradas no paciente entre os estudantes de Medicina decaem ao longo do curso de graduação. A relação médico-paciente sofre influência profunda da contemporaneidade, e, cada vez mais, comunicar-se na prática clínica torna-se um desafio. O processo de educar em medicina deve encorajar os estudantes a compartilhar o processo de tomada de decisão com seus pacientes. Os estudantes devem compreender não somente o que preocupa seus pacientes, mas também o que os motiva no cuidado em saúde. No processo ensino-aprendizagem, a adoção de medidas eficazes direcionadas ao aprimoramento da escuta e das habilidades de comunicação torna-se a pedra angular na construção da relação médico-paciente de alta qualidade. O objetivo deste estudo foi avaliar o impacto da disciplina “relação médico-paciente” nas atitudes centradas no paciente entre os estudantes de Medicina. Também foi avaliada a influência de variáveis demográficas e do período do curso de Medicina nessas atitudes. Metodologia: Foram incluídos 279 estudantes de Medicina que responderam ao questionário Patient-Practitioner Orientation Scale (PPOS): 128 (45,9%) estudantes matriculados na disciplina “Relação médico-paciente” e 151 (54,1%) estudantes voluntários, que não cursaram a disciplina, pareados por sexo e idade aos que frequentaram a disciplina. Os dados foram analisados no software SPSS 17.0 (SPSS Inc., Chicago IL, EUA). Regressão linear múltipla foi realizada para determinar se variáveis demográficas e o período do curso de Medicina estavam independentemente associados aos escores do PPOS (escore total; dimensões sharing e caring). Modelos logísticos foram criados para avaliar associação entre a disciplina “Relação médico-paciente” e os escores das subescalas do PPOS. Resultados: Na análise de regressão linear, sexo feminino ($p \leq 0,01$), idade mais avançada ($p \leq 0,02$) e estar cursando os primeiros anos da faculdade de Medicina ($p \leq 0,02$) estavam significativamente associados às atitudes mais centradas no paciente. Maior pontuação na subescala sharing estava independentemente associada à participação na disciplina “Relação médico-paciente” ($4,50 \pm 0,65$ para aqueles que frequentaram vs. $4,33 \pm 0,65$ para aqueles não matriculados na disciplina, $p = 0,03$) em modelo logístico ajustado por sexo, idade e período do curso de Medicina. Educadores da área da saúde devem buscar estratégias inovadoras que estimulem atitudes humanísticas, melhorem as habilidades de comunicação e influenciem de forma decisiva as atitudes adotadas pelos estudantes de Medicina, que devem estar focadas no cuidado centrado no paciente/pessoa.

PALAVRAS-CHAVE

- Relação Médico-Paciente.
- Estudantes de Medicina.
- Cuidados Médicos.
- Educação Médica.

ABSTRACT

KEYWORDS

- Physician-Patient Relations.
- Students, Medical.
- Medical Care.
- Medical Education.

Several studies have demonstrated that medical students' attitudes toward patient-centred care tend to decline throughout undergraduate education. At present, the adequate translation of the communication skills among medical students into clinical practice remains a challenge. Regardless of the increased efforts of educators to improve the provision of patient care, learning to communicate as a professional physician remains a complex process. **Objectives:** To evaluate the impact of the "doctor-patient relationship" discipline on medical students' attitudes towards patient-centred care, and to examine whether variables related to demographic characteristics and different stages of education are associated to medical student's patient-centred attitudes. **Methods:** Two-hundred and seventy nine medical students who responded a Patient-Practitioner Orientation Scale (PPOS), a validated instrument exploring attitudes towards the doctor-patient relationship were enrolled: 128 (45.9%) who attended the "Doctor-Patient Relationship" discipline and 151 (54.1%) volunteer students, matched by sex and age, who have not taken the discipline. Multiple linear regression analyses were used to quantify the independent association between PPOS scores (overall PPOS, 'sharing' and 'caring' dimensions), demographic variables and year of medical school. Logistic models were created to quantify the independent association between the "doctor-patient relationship" discipline and PPOS and the sub-scales scores. **Results:** In the linear regression analysis, female gender ($p \leq 0.01$), older age ($p \leq 0.02$) and earliest years of medical school ($p \leq 0.02$) were significantly associated with more patient-centred attitudes. Higher score on the 'sharing' sub-scale was independently associated with attending the "doctor-patient relationship" discipline (4.50 ± 0.65 for those who have studied the discipline vs. 4.33 ± 0.65 for those who have not studied the discipline, $p = 0.03$) after adjustment, in logistic models, for student's age, gender and years on the medical course. Medical educators should be focused on innovative strategies that stimulate humanistic attitudes, improve communication skills and truly change medical students' behaviour towards patient-centred care.

Recebido em: 17/11/2016

Aprovado em: 27/04/2017

INTRODUCTION

Many efforts have been made by medical educators towards the training of medical students focused on the "patient-centred medicine" in opposition to "the disease-centred medicine". In 1969, the pioneer, Enid Balint¹, who devoted much of her career to the study of the doctor-patient relationship, introduced the term "patient-centred medicine", which was related to the understanding of the patient as a unique human being^{2,4}. Since then, various educational strategies have been adopted in the teaching-learning process aiming at the improvement of the doctor-patient relationship⁵⁻⁹. It should be highlighted that this contact is a special process of human interaction comprising significant dimensions of the clinical practice that includes technical, humanistic and ethical knowledge. Notably, high attention has been placed in the development of communication skills¹⁰⁻¹².

In this way, several medical schools advocate the teaching of these skills and their evaluation as a fundamental factor in medical training¹³⁻¹⁶. Medical schools have not only an opportunity but also a responsibility to teach and evaluate the skills

of communication and the effectiveness of the doctor-patient relationship of their students.

It is worth mentioning that, a formal discipline in this subject was not included in the great majority of the curriculum of medicine's schools. Actually, several attitudes regarding the doctor-patient relationship are transmitted to the students by professors, tutors and other staff's members^{5,8,16}. Conversely, these attitudes are not analysed during the progress through medical school. The medical students must be stimulated to develop a critical own view toward the attitudes and communicative skills linked to the provision of patient care^{6,16}. Educational strategies that encourage the examination of these attitudes and behaviours might result in the better understanding of the lapses of the doctor-patient relationship⁵⁻¹⁰.

In view of the relevance of the doctor-patient relationship in medical practice and the need to teach it, a group of medical teachers of the Faculdade de Medicina da Universidade Federal de Minas Gerais (UFMG) began offering in 2011 a discipline entitled "doctor-patient relationship". The discipline aimed to encourage the practice and reflection of this subject by the

students in an attempt to instruct physicians with humanistic profile, according to Brazilian curriculum guidelines for undergraduate course in medicine¹⁷. Until now, approximately 200 students have already concluded the discipline.

Therefore, we aimed to evaluate the impact of the “*doctor-patient relationship*” discipline on medical students’ attitudes towards patient-centred care, and to examine whether variables related to demographic characteristics and different stages of education are associated with undergraduate student’s patient-centred attitudes.

METHODS

Study setting

The Faculdade de Medicina da Universidade Federal de Minas Gerais (UFMG) is a traditional Brazilian medical school located in Brazilian southeast and a WHO collaborator centre that admits 320 new students yearly by public competition. The medical school has a 6-year curriculum, divided into pre-clinical (the first two years, mostly classroom and laboratory based) and clinical curricula (following four years, mostly patient care or ward-based). The clinical years emphasize ambulatory care at the university hospital, community health centres and at villages or small towns. The third and fourth years emphasize medical interviewing and physical examination at hospital and ambulatory sites. Paediatrics and internal medicine are taught in the fourth year at ambulatory sites, at the public health services and at the university hospital. The fifth year emphasizes specialty medicine at university hospital ambulatories. Students at the beginning of last year have already completed six months of emergency medicine, three months of ambulatory practice at small villages and three months of internal medicine, surgery or paediatrics at University Hospital wards. Three hundred and twenty students enter college per year and all of them experienced identical curricula because there were no important curricular changes at this institution in the period of this study¹⁶.

Participants

Attitudes towards patient-centeredness were assessed among students ($n = 128$) six to 24 months after completion of their 15 contact-hour discipline entitled “*doctor-patient relationship*”. These students were enrolled via internet after providing consent for participation through a web-based survey. Student attitudes regarding the relationship between physicians and patients were measured using a previously validated instrument^{2,3,15,16}. The Patient-Practitioner Orientation scale (PPOS) is an 18-item instrument originally designed to be administered to either doctor or patients. It measures an individual’s

attitudes toward the doctor-patient relationship along two dimensions termed ‘sharing’ and ‘caring’, respectively. The ‘sharing’ dimension consists of nine items that measure the degree to which the respondent believes that power and control should be shared between doctor and patient, and the degree to which doctors should share information with the patient. The ‘caring’ dimension consists of nine other items that measure the extent to which the respondent cares about the value of warmth and support in the relationship, and the degree to which the respondent thinks the doctor should inquire about psychosocial issues and employ a holistic approach to medical care.

Respondents were asked to rate their agreement or disagreement with individual items on a 6-point scale. The overall PPOS score was computed as the mean of the scores for the 18 items. ‘Sharing’ and ‘caring’ scores were computed as the mean of the scores for the nine items in each dimension, respectively.

A control group of 151 medical student volunteers who do not attended the “*doctor-patient relationship*” discipline were also enrolled via internet after providing consent for participation through a web-based survey. These students were selected prospectively and tested at the same occasion of those who attended the discipline.

“*Doctor-patient relationship*” discipline

An interdisciplinary and multiprofessional group composed by clinicians, psychologists, psychoanalysts and preventive and social medicine specialists had fortnightly clinical meetings since the beginning of the study. The multiprofessional team discussed cautiously the strategies and interventions elected for teaching the “*doctor-patient relationship*” discipline. The theoretical basis was established on Michael Balint’s studies¹⁸. The medical students were stimulated to explore psychological aspects of their consultations. The students were motivated to recognise emotional aspects of the relationship between clinician and patient. Communications skills were also discussed. Films, videos, books, papers and charges were used for this.

Statistical analysis

Data were entered into an access database, verified by double entry and analysed using the Statistical Package for Social Sciences, version 17.0 (SPSS Inc., Chicago, IL). For the comparison of the percentages and the median, Pearson’s Chi-square test asymptotic and Mann-Whitney test was used, respectively. The Shapiro-Wilk test was used to evaluate if the data were normally distributed.

TABLE 1
Demographic characteristics of the undergraduate medical students ($n = 279$) enrolled in the study

Parameters	Students enrolled in the "doctor-patient relationship" discipline $n = 128$	Control group $n = 151$
Mean age \pm SD (years) [‡]	24.6 \pm 3.8	23.9 \pm 2.3
Range (years)	21 - 48	19 - 32
Gender n (%) [§]		
Male	50 (39.1)	70 (46.4)
Female	78 (60.9)	81 (53.6)
Years in medicine course n (%) [†]		
Third year	35 (27.4)	34 (22.5)
Fourth year	31 (24.2)	34 (22.5)
Fifth year	51 (39.8)	72 (47.7)
Sixth year	11 (8.6)	11 (7.3)

n , number of subjects; SD, Standard deviation; $\ddagger P = 0.07$, Student's t -test. $\S P = 0.22$, Pearson's Chi-square test asymptotic. $\dagger P = 0.61$, Pearson's Chi-square test asymptotic.

Linear regression models were created for the PPOS total mean score and for each of the two dimensions 'sharing' and 'caring' (dependent variable). The independent variables were grouped into demographic (age, sex) and years in the graduation course. Variables with p -value < 0.25 in the univariate analysis were selected for the multivariate analysis. In each group of variables when more than one variable had p -value less than 0.25, hierarchical linear regression models were created for selection of variables truly associated with the reduction of scores in each domain. Variables with $p < 0.05$ were

included in the final model of multivariate linear regression. The R^2 (coefficient of determination adjusted) and the Anova test were used to assess the adequacy of the models.

Logistic models were created to quantify the independent association between the "doctor-patient relationship" discipline and PPOS and sub-scales scores, adjusting for age, gender and years in the medical course. All the variables with $p \leq 0.25$ in the univariate analysis were included in the full models of logistic regression using the additive and subtractive step-wise approach. Odds ratio (OR) and 95% confidence interval (95% CI) were used as an estimate of the risk. The Hosmer-Le-meshow test was used to assess the adequacy of the models.

P values ≤ 0.05 were considered significant.

RESULTS

Characteristics of the students enrolled in the study

The demographic data of the study population are shown in the Table 1. Regarding the variables age, gender and years in medicine course, no significant differences were observed between the students who attended and those who do not attended the "doctor-patient relationship" discipline.

Variables associated with the PPOS score and the dimensions 'sharing' and 'caring'

PPOS score

Among all students evaluated ($n = 279$), increased PPOS overall scores were associated with female gender (4.85 \pm 0.40 for female vs. 4.69 \pm 0.69 for male, $p = 0.003$) and with be attending the first years of medical school (4.84 \pm 0.47 vs. 4.73 \pm 0.43, $p = 0.05$), but not with student's age ($p = 0.17$). Because all the three

TABLE 2
Effect of demographic characteristics and years in medicine course on Patient-Practitioner Orientation Scale (PPOS) summative and sub-scales ($n = 279$)

PPOS and sub-scales	Beta	CI 95% β	Beta coefficient	T	Adjusted R^2	F value
Total Mean score					0.11	8.60
Age (years) [‡]	0.03	0.01; 0.05	0.21	3.54		
Gender (female) [§]	0.17	0.07; 0.28	0.19	3.26		
Years in medicine course [†]	- 0.14	- 0.24; - 0.03	- 0.15	- 2.54		
Sharing					0.06	8.99
Age (years) [§]	0.04	0.02; 0.07	0.19	3.23		
Gender (female) [*]	0.23	(0.08; 0.38)	0.18	2.99		
Caring					0.04	6.37
Age (years) [¥]	0.02	0.01; 0.03	0.14	2.27		
Gender (female) [¥]	0.18	0.07; 0.21	0.14	2.31		
Years in medicine course [*]	- 0.15	- 0.24; - 0.03	- 0.16	- 2.67		

CI, Confidence interval; t , computed by dividing the estimated value of the β coefficient by its standard error. The linear regression models were appropriately adjusted according to the F -test of the ANOVA ($P < 0.05$). $\ddagger P < 0.001$. $\S P = 0.001$. $\dagger P = 0.002$. $*$ $P = 0.003$. $¥ P = 0.02$.

variables have a p -value < 0.25 in the univariate analysis they were selected for the multivariate analysis. In the linear regression analysis, age, female sex and year of medical school were independently associated with overall PPOS score (Table 2).

'Sharing' sub-scale score

In the univariate analysis, increased 'sharing' sub-scale scores were associated with female gender (4.50 ± 0.60 vs. 4.28 ± 0.69 , $p = 0.007$). Neither the student's age ($p = 0.10$) nor the years in medicine course ($p = 0.29$) were associated with the scores of the 'sharing' sub-scale. As female gender and student's age have p -value < 0.25 , they were selected for the multivariate analysis. 'Sharing' scores were independently associated with age and female sex in the linear regression analysis (Table 2).

'Caring' sub-scale score

Increased "caring" sub-scale scores were associated with female gender (5.20 ± 0.36 vs. 5.08 ± 0.44 , $p = 0.02$) and first years of medical school (5.22 ± 0.39 vs. 5.10 ± 0.40 , $p = 0.006$). These variables remained associated with 'caring' dimension in multivariate analysis (Table 2). No association was observed between student's age and "caring" scores ($p = 0.62$).

The influence of "doctor-patient relationship" discipline on medical students' attitudes towards patient-centred care

Regarding PPOS and sub-scales scores, higher 'sharing' scores were associated with attending the "doctor-patient relationship" discipline (Table 3). In the multivariate analysis, sharing (OR = 1.46; 95%CI = 1.01-2.13; $p = 0.03$) remained associated with attending the "doctor-patient relationship" discipline even after adjustment for age, gender and years in the medical course.

Additional data: the medical students describe their own views toward the "Doctor-patient relationship" discipline

At the end of the "doctor-patient relationship" discipline, medical students were encouraged to describe their own views toward this discipline. Among the various reports made by these students, some were selected and described below.

I believe that much more important than to discuss the professional relationship models in our career, it is to discuss our own perception about the patient. I think the most efficient way to ensure a noble conduct in the office is reconstructing the conceptions that each one brings about the place that the patient must occupy during the contact between him and his doctor.

[...] the discipline clarified some concepts and allowed an excellent discussion about subject. In my opinion, it was the best part of the discipline. The examples and the reports of the difficulties that we, medical students, had during the week, were the most clear and illustrative way of discuss the doctor-patient relationship and contributed significantly to our medical training.

Some concepts of doctor-patient relationship appear obvious and they originated from our family's instructions. However, there are more complex issues that require a more specific approach...

I learned that new knowledges are not always found in books. Among them, it should be highlighted the empathy, the care, the tenderness, the attention and the cordiality [...] I learned that we must understand the patient as a human being who has an abnormality at the consultation's occasion. However, this person has also a life story, a family [...] The patient has feelings and he/she must never be examined as chart number or as a simple carrier of a specific disease and, finally, deserves to be respected.

DISCUSSION

In the present study, medical students who attended the "doctor-patient relationship" discipline achieve higher 'sharing' scores than those who do not were enrolled in the discipline. In addition, the students' reports revealed that they perceived the importance to understand the illness process through the patient's perspectives as an essential component in building a successful physician-patient relationship.

As previously described, the core elements of PPOS, an instrument that has been used to measure student's patient-centred beliefs, are based largely on two dimensions 'caring' and 'sharing'^{2,3,15,16}. The last dimension might be defined as

TABLE 3

Comparative analysis of Patient-Practitioner Orientation Scale (PPOS) and sub-scales ($n = 279$) between students who attended and those who do not attended the "doctor-patient relationship discipline"

PPOS parameters	Students enrolled in the discipline ($n = 128$)	Control group ($n = 151$)
Total score (mean \pm SD) [‡]	4.83 \pm 0.46	4.73 \pm 0.44
Sharing (mean \pm SD) [§]	4.50 \pm 0.65	4.33 \pm 0.65
Caring (mean \pm SD) [†]	5.17 \pm 0.41	5.13 \pm 0.39

n, number of subjects; *SD*, standard deviation. [‡] $P = 0.06$; [§] $P = 0.03$; [†] $P = 0.40$ (Student's *t*-test for all).

sharing the power, the control and the information about the patient's clinical condition. Conversely, in the daily clinical practice surrounded by high complexity of health care and high performance technologies, medical students have been felt poorly prepared to share decision-making process with their patients^{14,19,20}. In the actual medical education scenario, listening and understanding the patient's life context including ideas, expectations, and feelings about the disease process have become a challenge.

The restructuring of the medical education focusing the patient-centredness is a current relevant issue worldwide^{5-10,21,22}. Operationally, our main goal in offering the "doctor-patient relationship" discipline was to maximize the learning and retention of fundamental humanistic and ethical knowledge and communication skills, particularly based on a reflective practice.

The strategies adopted by an interdisciplinary and multiprofessional team may be considered a remarkable characteristic of "doctor-patient relationship" discipline. Each week case-based small group tutorials were the key component of the didactic experiences. In this setting, the students were encouraged to reflect on their own and as a group about their real medical practice thorough an integrated approach. Each tutorial session was based on actual students' experiences during their consultations. Tutorial topics were selected based on the doctor-patient relationship's issues identified by the students. Altogether, the attitudes of the medical educators were focused in provoking the medical student to critically reflect on the doctor-patient interaction. The "doctor-patient relationship" discipline was designed to foster the closely connection between the students' actions and the values and beliefs of the patients, thereby enhancing the patient-centred attitudes.

Consistently with a previous study carried out in the medical school, using the PPOS instrument¹⁶, we found high 'caring' scores in all students that were enrolled in the current study, independently of attending the "doctor-patient relationship" discipline. 'Caring' domain measures beliefs about attending to patient's emotions and lifestyle²⁻⁴. Similar findings were also observed in other two studies conducted in medical schools located in the same state^{21,23}. Altogether, these results demonstrated that the effect of culture influences the 'caring' domain. Brazilian medical students achieve higher 'caring' scores than any other cultures in which these scores have been reported¹⁶.

Additionally, our results demonstrated that the progress through medical school was inversely associated with the scores of the subscale 'caring'. Apart from the divergences of the results revealed by several investigations^{2-4,16,19}, our data are in

accordance with previous studies, which found the decline of empathy in the later years in medical school^{22,24}.

In agreement with previous studies, higher PPOS scores were identified among females' students and may be attributed to gender differences in communication skills among female and male doctors^{3,4,16}.

The limitations of our study deserve to be discussed. This was a cross-sectional investigation of small sampling conducted in a single medical school. An additional limitation is the lack of the evaluation of the students in the beginning of the "doctor-patient relationship" discipline. Specifically, the students that opted to attend the discipline could be already concerned about issues addressing the interaction of doctors with their patients.

The data presented here should be taken into account in the understanding of medical students' attitudes towards patient-centred care and in the translation of the results into daily clinical practice. Altogether, these findings may improve the doctor-patient relationship and reassure the commitment of the future professional with a high quality of patient care.

REFERENCES

1. Balint E. The possibilities of patient-centered medicine. *J R Coll Gen Pract* 1969;17(82):269-76.
2. Krupat E, Hiam CM, Fleming MZ, Freeman P. Patient-centeredness and its correlates among first year medical students. *Int J Psychiatry Med* 1999;29(3):347-56.
3. Haidet P, Dains JE, Paterniti DA, Hechtel L, Chang T, Tseng E, *et al.* Medical student attitudes toward the doctor-patient relationship. *Med Edu* 2002;36(6):568-74.
4. Wahlqvist M, Gunnarsson RK, Dahlgren G, Nordgren S. Patient-centred attitudes among medical students: gender and work experience in health care make a difference. *Med Teach* 2010;32(4):e191-8.
5. Gaufberg E, Hirsh D, Krupat E, Ogur B, Pelletier S, Reiff D, Bor D. Into the future: patient-centredness endures in longitudinal integrated clerkship graduates. *Med Educ* 2014;48(6):572-82.
6. Dubé TV, Schinke RJ, Strasser R, Couper I, Lightfoot NE. Transition processes through a longitudinal integrated clerkship: a qualitative study of medical students' experiences. *Med Educ* 2015;49(10):1028-37.
7. Ogur B, Hirsh D, Krupat E, Bor D. The Harvard Medical School-Cambridge integrated clerkship: an innovative model of clinical education. *Acad Med* 2007;82(4):397-404.
8. Ogur B, Hirsh D. Learning through longitudinal patient care-narratives from the Harvard Medical School-Cambridge Integrated Clerkship. *Acad Med* 2009;84(7):844-50.

9. Hirsh D, Gaufberg E, Ogur B, Cohen P, Krupat E, Cox M, Pelletier S, Bor D. Educational outcomes of the Harvard Medical School-Cambridge integrated clerkship: a way forward for medical education. *Acad Med* 2012;87(5):643-50.
10. McNair R, Griffiths L, Reid K, Sloan H. Medical students developing confidence and patient centredness in diverse clinical settings: a longitudinal survey study. *BMC Med Educ* 2016;16:176.
11. Lee KH, Seow A, Luo N, Koh D. Attitudes towards the doctor-patient relationship: a prospective study in an Asian medical school. *Med Edu* 2008;42(11):1092-9.
12. Tsimtsiou Z, Kerasidou O, Efstathiou N, Papaharitou S, Hatzimouratidis K, Hatzichristou D. Medical students' attitudes toward patient-centred care: a longitudinal survey. *Med Edu* 2007;41(2):146-53.
13. Ross EF, Haidet P. Attitudes of physical therapy students toward patient-centered care, before and after a course in psychosocial aspects of care. *Patient Educ Couns* 2011;85(3):529-32.
14. Krupat E, Pelletier S, Alexander EK, Hirsh D, Ogur B, Schwartzstein R. Can changes in the principal clinical year prevent the erosion of students' patient-centered beliefs? *Acad Med* 2009;84(5):582-6.
15. Pereira CM, Amaral CFS, Ribeiro MMF, Paro HB, Pinto RM, Reis LE, et al. Cross-cultural validation of the Patient-Practitioner Orientation Scale (PPOS). *Patient Educ Couns* 2013;91(1):37-43.
16. Ribeiro MMF, Krupat E, Amaral CFS. Brazilian medical students' attitudes towards patient-centered care. *Med Teach* 2007;29(6):e204-8.
17. Ministério da Educação. Conselho Nacional de Educação Câmara de Educação Superior. Resolução nº 3, de 20 de junho de 2014. Diretrizes Curriculares Nacionais do Curso de Graduação em Medicina. [Internet] [cited 12 August 2016] Available from: http://portal.mec.gov.br/index.php?option=com_docman&view=download&alias=15233-diretrizes-medicina&Itemid=30192.
18. Balint M. (1957) *The doctor, his patient and the illness*. London. Pitman Medical. 2nd edition (1964, reprinted 1986) Edinburgh. Churchill Livingstone.
19. Bombeck K, De Winter B, Van Royen P. Attitude erosion in medical students: dwarf or devil, fact or fable? *Med Educ* 2014;48(6):558-60.
20. Schweller M, Costa FO, Antônio MÂ, Amaral EM, de Carvalho-Filho MA. The impact of simulated medical consultations on the empathy levels of students at one medical school. *Acad Med* 2014;89(4):632-7.
21. Peixoto JM; Ribeiro MMF, Amaral CFS. Medical Students' Attitudes Towards Patient-centered Care According to Curricular Models. *Rev. Bras Educ Med* 2011;35:229-36.
22. Hudson JN, Lethbridge A, Vella S, Caputi P. Decline in medical students' attitudes to interprofessional learning and patient-centredness. *Med Educ* 2016;50(5):550-9.
23. Costa BC, Figueiredo-Soares T, Toledo Júnior AC, Souza NM, Faria RMD. Validation of a Patient-Centered Instrument of Medical Appointment Recording. *Rev Bras Educ Med* 2015; 39:233-39.
24. Mole TB, Begum H, Cooper-Moss N, Wheelhouse R, MacKeith P, Sanders T, Wass V. Limits of 'patient-centredness': valuing contextually specific communication patterns. *Med Educ* 2016;50(3):359-69.

CONTRIBUTION OF AUTHORS

Luciana Diniz Silva, Maria Mônica Freitas Ribeiro, Anelise Impelizeri Nogueira were involved in study concept and design, acquisition of data, analysis and interpretation of data and drafting of manuscript. Bruna Sodré Reis, Isabela Lopes Barbosa were involved in acquisition of data. Andreia Maria Camargos Rocha and Leonardo Maurício Diniz were involved in critical revision of manuscript. The authors declare that they have participated in the preparation of the manuscript and have seen and approved the final version and are the guarantors of this submission.

CONFLICT OF INTERESTS

The authors declare no conflict of interest

CORRESPONDING AUTHOR

Luciana Diniz Silva
 Universidade Federal de Minas Gerais (UFMG)
 Faculdade de Medicina – Departamento de Medicina Interna
 Av. Alfredo Balena, 190 – sala 246
 Bairro Santa Efigênia – Belo Horizonte
 CEP 30130-100 – MG
 E-mail: lucianadinizsilva@gmail.com