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WEB PAPER

Brazilian medical students' attitudes towards patient-centered care

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Abstract

Background: The doctor-patient relationship is essential to medical care (Engel 1980; Balint 1984), however, medical schools focus mainly on biomedical subjects and don't give the necessary attention to communication skills, humanistic attitudes, and professional values (Haidet et al. 2001, 2002).

Methods: Attitudes of medical students towards the doctor-patient relationship have been examined and the Patient-Practitioner Orientation Scale (PPOS) has been used to measure students' and practitioners' patient-centered beliefs, first in USA (Haidet et al. 2002), and then in several other countries (Choi & Moon 2005; Tsimtsiou et al. 2005; Shankar et al. 2006). This study aimed to examine the attitudes of Brazilian medical students towards the doctor-patient relationship by using the PPOS. The scale was translated into Portuguese and was administered to approximately 800 students in their first, fifth, seventh, ninth, tenth and twelfth semesters of medical school along with a socio-demographic questionnaire.

Results: A total of 738 students (>90%) completed data collection. For the entire cohort, female gender ($p < 0.000$), later semester in medical school ($p < 0.000$), primary-care specialty choice ($p < 0.02$) and lower familial income ($p < 0.03$) were significantly associated with more patient-centered attitudes. *Sharing* sub-scores, measuring beliefs about power and information between physician and patient, were significantly more patient-centered for twelfth semester male students than for first semester males ($p < 0.000$), but not for female students. *Caring* sub-scores, which measure beliefs about attending to patient's emotions and lifestyle, did not change with the years of school. In general, *Caring* scores were considerably higher than *Sharing* scores. Total PPOS scores in Brazil are comparable to those found among medical students in the United States, however they are considerably higher than PPOS total scores in Nepal, Greece, and Korea.

Conclusions: Communication skills and patient care needs to be critically examined by Brazilian teachers and students aiming to change attitudes toward the doctor-patient relationship to be more patient-centered attitudes.

Introduction

The doctor-patient relationship is fundamental to medical care, and affects patients' psychological, social and biological outcomes (Engel 1980; Balint 1984). In spite of this well documented finding, however, medical schools do comparatively little to educate their students about communication skills, humanistic attitudes, and professional values (Haidet et al. 2001, 2002) compared to the time and attention given to teaching biomedical subjects. In fact, several observers have commented that through the hidden curriculum, medical schools may unintentionally teach their students negative lessons in both their pre-clerkship (Hafferty 1998) and clerkship years (Haidet 2002).

Yet, while we closely monitor and assess students' medical knowledge over time, far less work has been done to determine the evolution of students' attitudes toward the doctor-patient relationship. Haidet et al. (2002) have used the Patient-Practitioner Orientation Scale (PPOS) to measure students' patient-centered beliefs in the USA, and several others, using the same instrument, have assessed students' and

Practice points

- The attitudes of medical students toward the doctor-patient relationship differ by gender.
- The attitudes of medical students toward the doctor-patient relationship evolve over time in the direction of patient-centeredness and gender similarity.
- The beliefs of medical students about doctor-patient relationship differ from cultures.
- Communication skills need to be taught and the provision of patient care needs to be critically examined by teachers and students.

practitioners' beliefs in countries such as Nepal (Shankar et al. 2006), Korea (Choi & Moon, 2005), and Greece (Tsimtsiou et al. 2005). We seek to expand the understanding of patient-centered beliefs across cultures, over time in school, and across gender by assessing student attitudes toward the doctor-patient relationship at the medical school of Universidade

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Federal de Minas Gerais (FM-UFMG), a traditional Brazilian medical school located in Brazilian Southeast and a WHO collaborator center that admits 320 new students yearly by public competition.

Study setting

The UFMG medical school has a 6-year curriculum, divided into pre-clinical (the first 4 semesters, mostly classroom and laboratory based) and clinical curricula (following 8 semesters, mostly patient care or ward-based). The clinical years emphasize ambulatory care at the university hospital, community health centers and at villages or small towns. The fifth and sixth semesters emphasize medical interviewing and physical examination at hospital and ambulatory sites. Pediatrics and internal medicine are taught in the seventh and eighth semesters at ambulatory sites, at the public health services and at the university hospital. The ninth semester emphasizes specialty medicine at university hospital ambulatories. The twelfth semester is the end of the graduate course. Students at the beginning of twelfth semester have already completed six months of emergency medicine, three months of ambulatory practice at small villages and three months of internal medicine, surgery or pediatrics at University Hospital wards. All students experienced identical curricula because there were no important curricular changes at this institution in the last six years.

Method

Study sample and instruments

Students' attitudes toward the doctor-patient relationship were assessed among students in first, fifth, seventh, ninth, tenth and twelfth semesters of medical course at UFMG in August 2004, at the beginning of the semester, in a cross sectional study. The PPOS and a socio-demographic questionnaire were administered to all students who attended the first or second day class.

The total number of students in the classes selected to survey at August 2004 was 958, but approximately 800 students attended the first or second day class. The first, fifth, seventh and twelfth students were surveyed at classrooms with five to ten students. The ninth and tenth semester students were surveyed at classrooms with approximately 80 students soon before the beginning of class. Several ninth and tenth semester students arrived late and therefore they did not have sufficient time to respond the questionnaire and the PPOS. The students' participation in the survey was voluntary after informed consent and study approval by University Ethical Committee.

The PPOS was translated into Portuguese for use in this study. The scale, which has already been translated into several languages and validated in several cultures, is an 18-item instrument, which uses a 6-point Likert scale from strongly agree to strongly disagree (Krupat et al. 2000a, 2000b; Street et al. 2003). Mean scores (PPOS total score) were calculated and could range from a value of 1 (doctor-centered or paternalistic) to 6 (patient-centered or egalitarian).

In addition to a total score, the PPOS measures attitudes toward the doctor-patient relationship along two dimensions, Sharing and the Caring. The *Sharing* score measures the degree to which the respondent believes that power and control should be shared between doctor and patient. The *Caring* score measures the degree to which the respondent cares about the value of warmth and support in the doctor-patient relationship and the degree to which the respondent believes the doctor should inquire about psychosocial issues. Mean scores for the nine item *Sharing* and *Caring* subscales were also calculated.

In addition to the PPOS scale, an anonymous questionnaire was administered to the students. This questionnaire collected information about age, gender, school semester, familial income, medical specialty of interest, parents' level of schooling, parental medical background, and students' participation in research teams and extracurricular activities (activities not recognized by the medical school curriculum carried out at medical services under the supervision of hospital teams).

Statistical analysis

We used SPSS for Windows 10 to examine the data. The mean PPOS score, the *Sharing* and *Caring* sub-scores for the entire cohort and for each school semester were calculated. Analysis of variance (ANOVA) was used to examine the effect of questionnaire variables and their interaction on mean PPOS scores (overall PPOS, *caring* sub-score and *sharing* sub-score). ANOVA were run first on single variables. The multivariable analyses were done after with the observed significant demographic predictors. The interactions between the variables were examined.

The survey and the PPOS questionnaires were completed by 743 of the approximately 800 eligible students. Five were eliminated due to various problems (e.g., non-completed, items, multi-response items), so that the final working n was 738 (a response rate of greater than 90%).

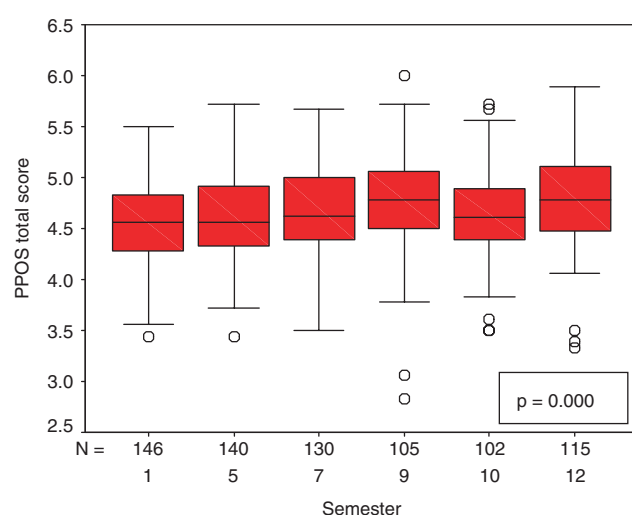
Results

The number of respondent students and the percentage of the total registered students at each semester at UFMG that they constituted in August of 2004 are indicated in Table 1. The total PPOS score for the entire sample was 4.66 (± 0.44 SD), with a range from 2.83 to 6.00. The *Caring* subscale score was 5.20 (± 0.45 SD), and ranged from 1.89 to 6.00, and the *Sharing* subscale score was 4.10 (± 0.66 SD), and ranged from 1.78 to 6.00. At the beginning of their medical program, the first year students' mean total PPOS score was 4.57 ± 0.43 SD, and with the exception of a dropoff in the tenth semester, total PPOS scores showed a small, but steady increase with the semesters of school ($p < 0.000$) (see Figure 1).

Summing across all semesters, female students had a significantly higher mean overall PPOS scores than did male students ($p < 0.000$) (Table 2). The pattern of change in PPOS scores across class differed between males and females. The female PPOS scores increased with school years, but was not statistically significant in comparison with PPOS scores at the beginning ($p < 0.231$); whereas male students at the end

Table 1. Respondent students number and its percentage of registered students at each semester in FM- UFMG, 2004, August.

Semester	Students					
	Total respondents	%	Male respondents	%	Female respondents	%
1	146	94.8	75	93.8	71	90.0
5	140	83.8	66	81.5	74	86.0
7	130	80.7	74	83.1	56	77.8
9	105	63.6	59	61.4	46	66.7
10	102	65.0	47	63.5	55	66.3
12	115	74.7	57	71.3	58	78.4
Total	738	77.0	378	75.6	360	78.6

**Figure 1.** Box plot of total PPOS for the entire cohort (738 students) and semester.**Table 2.** Total PPOS, caring and sharing scores and students gender at the beginning of the medical course.

Score	Male	Female	p-value
Total PPOS	4.43 ± 0.39	4.72 ± 0.42	0.000
Caring	5.04 ± 0.47	5.26 ± 0.43	0.003
Sharing	3.82 ± 0.58	4.18 ± 0.58	0.000

of medical course had a higher PPOS mean score than male students at the beginning ($p < 0.000$). In spite of this, however, the males mean score in their twelfth and highest semester was still lower than females' students starting mean score (Table 3).

As for other demographic variables, total PPOS score was inversely associated with family income ($p < 0.029$); and students who reported a primary care specialty choice demonstrated significantly more patient-centered scores (4.78 ± 0.45 SD) than students who reported non-primary care specialty career choices (4.64 ± 0.45 SD, $p < 0.013$).

Extracurricular activities, students' participation in research teams, parents' level of schooling and parental medical background did not show any association with PPOS score.

Discussion

In order to gain a fuller understanding of the scores of the Brazilian students studied, it is useful to compare our data to the findings of other researchers in various parts of the world who have used the same instrument. Total PPOS scores in Brazil are generally comparable to those found among medical students and physicians in the United States, however they are considerably higher than PPOS total scores in Nepal, Greece, and Korea. Sharing subscores, which measure of the extent to which medical students believe in egalitarian relationships with their patients, are generally lower than in the US but higher than the other countries measured. However, caring subscores, which measure the extent to which one considers patients' emotions and lifestyles important, are higher among Brazilian medical students than any of the other cultures in which these scores have been reported.

The disparity between these sub-scores is likely a manifestation of cultural values. The notion of the paternalistic doctor attitude is common in Brazil. Patients' participation in medical decision-making is recent and it is limited to the groups of younger people and of those who have higher level of schooling. The poor and the elderly rarely question the doctor's decision (Queiroz et al. 1992; Caprara & Rodrigues 2004). On the other hand, communication is typically warm and personal between Brazilian doctors and their patients, although there are signs that it has recently changed into a more technical and indifferent one.

The increase found in PPOS scores over years in school, although small, suggests that students in later years of medical school are more patient-centered than those in earlier years. This finding is different from that observed by some researchers (Pfeiffer et al. 1998; Haidet et al. 2002), but it is in accordance with others (Monchy et al. 1988) and with qualitative studies carried on UFMG medical school (Ribeiro 1991; Figueiredo 1992). Data from these studies showed that

Table 3. Semester' total PPOS score and gender for the entire sample.

School semester	PPOS total score	Male PPOS score	Female PPOS score	p-value
1	4.57 ± 0.43	4.43 ± 0.39	4.72 ± 0.42	0.0000
5	4.60 ± 0.41	4.48 ± 0.38	4.70 ± 0.42	0.0009
7	4.67 ± 0.41	4.59 ± 0.42	4.78 ± 0.39	0.0012
9	4.76 ± 0.48	4.69 ± 0.52	4.85 ± 0.42	0.097
10	4.61 ± 0.45	4.55 ± 0.48	4.66 ± 0.42	0.22
12	4.77 ± 0.44	4.70 ± 0.49	4.83 ± 0.38	0.14
Total	4.66 ± 0.02	4.57 ± 0.45	4.75 ± 0.41	0.0000

children's mothers pointed out that the students at eighth semesters were more patient-centered than pediatrics physicians (Figueiredo 1992). Evaluation of physicians certificated by UFMG medical school working in small towns showed also that they had a good doctor-patient relationship (Ribeiro 1991).

In the present study, PPOS scores increased in the clinical years, except at tenth semester. The first increase, detected soon after the student's first interaction with patients, may be explained by a return of idealism that was lost in the pre-clinical years (Becker et al. 1992). It is also not surprising that scores continued to increase after students became involved in community ambulatory practice, as primary care is the clinical setting in which the doctor-patient relationship is more personal and more used as a therapeutic tool (Howe 2001). The decreased score at tenth semester occurred soon after students began their training in specialty medicine at university hospital ambulatories. Reliance on medical technology, a focus on the biomedical aspects of disease, and close contact with specialist physicians' views could explain the score dip in the tenth semester.

Higher PPOS scores among females have been previously observed (Haidet et al. 2002) and may be linked to gender differences in communication among female and male doctors (Roter et al. 2002). In the present study the gap between male and female PPOS scores narrowed over time so that gender differences among tenth and twelfth semester students were no longer significant. The females starting PPOS scores were higher than males scores and this could explain the lower change in females PPOS scores. However, the absence of gender differences in the final years of medical training has been shown previously and was explained as a tendency for women to adapt to the doctor-centered institutional culture (Batenburg et al. 1999).

Higher family income and lower PPOS score may be linked to social image of physicians in Brazil. The status of medicine is high, but medical income is low and doctors are paid more for ordering and doing technical procedures than for listening and talking.

This study has several limitations. The data are cross-sectional rather than longitudinal, and it is possible that uncontrolled and unmeasured factors may have influenced the students as they moved through their different years in school.

The PPOS was translated so that Brazilian medical students could complete it. However, there may have been some items

that were relevant for U.S. culture that were not equally relevant or appropriate in the context of Brazilian society. Also, generalizations cannot be made because the data were collected at only one institution and there are differences among the curricula of every Brazilian medicine school.

In conclusion, we have assessed the attitudes of Brazilian medical students toward the doctor-patient relationship and found that these attitudes differ by gender, at least initially, and evolve over time in the direction of patient-centeredness and gender similarity. We have also found that the beliefs of these students reflect a unique pattern of scores that differ from cultures such as that of the U.S. Brazilian students strongly endorse paying attention to their patients' emotions and lifestyle at the same time that they do not strongly endorse egalitarian patient relationships.

Based on our research, the PPOS appears to be a useful assessment device to measure the impact of the curriculum on Brazilian medical students concerning patient-centeredness. Results using this measure can further stimulate the assessment of students' attitudes toward the doctor-patient relationship at other Brazilian medical schools, and it would be possible to identify the association between patient-centeredness and the focus of different curricula. The small increase in patient-centered attitudes among male students, the lack of change among female students, and the negative impact of training at large medical centers need the attention of medical educators and administrators. Communication skills need to be taught and the provision of patient care needs to be critically examined by teachers and students aiming to change attitudes toward the doctor-patient relationship to be more patient-centered attitudes.

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The research was approved by ethical committee of Universidade Federal de Minas Gerais, August 18, 2004 and was carried out at Faculdade de Medicina da Universidade Federal de Minas Gerais.

Notes on contributors

RIBEIRO, MMF conceived and designed the research, carried out data collection, analysis and interpretation and article drafting.

KRUPAT, E the author of PPOS Scale, gave permission to its use. He also gave valuable information regarding data analysis and interpretation and critically revised the manuscript.

AMARAL, CFS has contributed to the conception and design of the research, the analysis and interpretation of data and also critically revised the manuscript.

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