

Comparison of Quality of Life Between Medical Students and Young General Populations

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ABSTRACT

Background: During the course of their education, medical students learn to attend to the quality of life of their patients. However, their own quality of life can begin to decrease early in medical school. The purpose of this study was to compare the quality of life of medical students to that of others their age, taking into account the medical school phase and gender. **Methods:** We used the short version of the World Health Organization Quality of Life Instrument to assess psychological well-being, physical health, social relationships and environmental conditions. The quality of life among 206 medical students was compared to that of 199 young people from a normative population using independent sample *t*-tests. In addition, the effects of medical school phase and gender on quality of life domains were also assessed by two-way between-groups analysis of variance. **Results:** Medical students showed worse psychological well-being and social relationships than young people in the normative sample. About one-half of the students revealed a low quality of life in the psychological and social domains and one-quarter showed a low quality of life in the physical health and environment domains. Medical school phase did not influence quality of life, however, gender had a large effect, where female students showed worse physical and psychological well-being than male students. **Discussion:** Poor psychological well-being and social relationships can have implications that exceed the doctor's personal well-being. Future doctors with a low quality of life may translate into their poorer performance, impairing patient care.

Keywords: Gender differences, medical education, medical students, quality of life

Background

Quality of life consists of several aspects like physical health, psychological well-being, social relationships and environmental conditions. Current medical practices consider patient's quality of life, particularly in patient-centered medicine. However, many doctors who encourage healthy habits in their patients do not always possess a good quality of life themselves.^[1] A careless attitude toward personal well-being may be stimulated by a learning model with little concern for student well-being. Starting in the early phase of

medical school, this careless attitude may persist throughout their working lives.

Some studies indicate that medical students have a lower quality of life than young people in the general population.^[2,3] Other studies that compared quality of life between medical students and university students revealed somewhat contradictory results.^[4,5] Thus, the presence of a poor quality of life among medical students remains an open question. Similarly, the influences of other factors like medical school phase and gender on students' quality of life have not yet been investigated. Within this context, the aim of our study was to compare the quality of life of medical students and young people in the general population, considering the effects of medical school phase and gender.

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Methods

The medical students studied were at the end of each phase of a traditional medical school curriculum, namely, the preclinical phase (2nd year), the clinical phase (4th year), and internship (6th year) at the Fluminense Federal University in the city of Niterói in the Southeast Region of Brazil. After lectures, the students were invited to complete the short version of the World Health Organization Quality of Life Instrument (WHOQOL-BREF), which is a self-administered questionnaire that measures physical health, psychological well-being, social relationships and environmental conditions over the last two weeks.^[6] Students' participation was voluntary, without incentives. The study was approved by the local research ethics committee. All participants signed informed consent forms to participate.

The normative sample was obtained from a study of the general population in Porto Alegre, a southern Brazilian city^[7] that had applied the WHOQOL-BREF in a randomly selected sample of people aged 20 to 64 years. We selected the subsample of young people aged between 20 and 29 as a comparison group, this being the expected age range of medical students in this school.

Statistical analysis

To compare the data from medical students and the normative sample, we used Fisher's test and independent t-tests to assess gender proportions and differences on the quality of life domains, respectively. A two-way between-groups analysis of variance assessed the impact of the year of study and gender on the quality of life domains. Statistical analyses were performed using SPSS 17.0 and GraphPad QuickCalcs software. Similar to a prior study,^[8] we considered a low quality of life as corresponding to a score below the 25th percentile of the normative scores of general people aged 20 to 29, stratified by gender.^[7]

Results

Of the 250 medical students in the target population, 216 (86.4%) completed the questionnaire. Of these, 10 were excluded because they did not meet the age criteria, resulting in a study sample of 206 students, with a slightly greater proportion of female students (55.8%). This gender distribution was not significantly different from the gender distribution of the general population (Fisher's exact test; $P = 0.16$).

The mean scores of the quality of life domains (WHOQOL-BREF) in the present sample and the normative study^[7] are summarized in Table 1. Medical students showed lower psychological well-being and social relationship scores than the young general population. In the psychological domain of the WHOQOL-BREF, the mean score difference between

medical students and the young general population was 4.92 (95% CI = 2.34 to 7.50; $t = 3.75$, $P < 0.001$ with a small to moderate effect size, $d = 0.37$). In the social relationships domain, the groups also showed a significant mean difference, of 8.72 (95% CI = 5.16 to 12.28; $t = 4.82$, $P < 0.001$, with a moderate effect size, $d = 0.48$). On the other hand, the medical students showed a quality of life similar to that of the general population in the physical and environment domains.

A significant proportion of the students had a low quality of life in all domains, that is, below the 25th percentile of the normative scores. In relation to gender, Table 2 lists the percentage of students with a low quality of life as a function of gender and quality of life domains. The proportion of males with a low quality of life was not significantly different from the proportion of females in physical health ($P = 0.37$), psychological well-being ($P = 0.70$), social relationships ($P = 0.72$), and environmental domains ($P = 0.52$).

If we sum the males and females with a low quality of life, 50.5% and 44.2% of the students showed a low quality of life in the social relationships and psychological domains, respectively. Regarding the physical health and environmental domains, approximately one-quarter of the students revealed a low quality of life in the physical health (28.6%) and environmental (22.8%) domains.

A two-way between-groups analysis of variance was conducted to assess the effects of year in medical school and gender on quality of life domains. In the physical health, psychological, social and environmental domains, there was not a statistically significant main effect for year in medical school and interaction effect between year in medical school and

Table 1: Means and standard deviations of the quality of life domains (World Health Organization Quality of Life Instrument-BREF) in medical students of the present study and in young general population of a normative study

Quality of life domains	Medical students (n=206)	General population (n=199) ^[7]
Physical health	60.26 (15.53)	58.90 (10.50)
Psychological	60.98 (15.24)	65.90 (10.70)*
Social relationships	67.48 (17.64)	76.20 (18.80)*
Environment	58.78 (13.47)	59.90 (14.90)

* $P < 0.001$

Table 2: Low quality of life* as a function of gender and World Health Organization Quality of Life Instrument-BREF domains

Quality of life domains	Male (n=91) (%)	Female (n=115) (%)
Physical health	22 (24.2)	37 (32.20)
Psychological	43 (47.3)	48 (41.7)
Social relationships	43 (47.3)	61 (53.0)
Environment	18 (19.8)	29 (25.2)

*Below the 25th percentile of the normative scores of general people aged between 20 and 29^[7]

gender. However, the main effect for gender was statistically significant in the physical health [$F(1,200)=21.81, P < 0.001$] and psychological [$F(1,200)=11.46, P = 0.001$] domains, in favor of males. That is, female students had a worse quality of life than males in terms of physical health and psychological well-being. In physical health (male: $M = 65.58, SD = 13.57$; female: $M = 56.05, SD = 15.74$), this difference represented a large effect size ($d = 0.65$); in psychological well-being (male: $M = 65.06, SD = 15.05$; female: $M = 57.75, SD = 14.65$), the effect size was moderate ($d = 0.49$). Table 3 presents the mean scores and standard deviations by gender, WHOQOL-BREF domains and year in medical school.

Discussion

Medical students exhibited poorer psychological well-being and social relationships than age-matched young people in the general population. These differences represented a moderate effect size and one-half of the students revealed a low quality of life in the psychological and social domains. While the medical students as a group reported physical health and environmental scores similar to those of the general population, one-quarter presented a low quality of life in these domains. Year in medical school did not influence quality of life; however, gender had a large effect. Specifically, female students had poorer physical health and psychological well-being than male students.

The present study revealed poor psychological well-being and social relationships of medical students, regardless of medical school phase. Medical students may perceive devoting time to personal well-being as being less important than academic commitments. In addition, many medical schools do not provide effective social support and health care to students.^[9]

Women's health care, in particular, could be neglected,^[10] which can explain the findings of worse physical and psychological health among female students in the present study. Dysmenorrhea and premenstrual dysphoric disorder have high prevalence rates and affect the quality of life among female medical students.^[11] Although female students know palliative management,^[11] the connections among academic distress, dysmenorrhea, premenstrual dysphoric disorder, and poor quality of life are rarely addressed by medical schools.^[12]

The results of the present study are in general agreement with those of a prior study^[2] that also used the WHOQOL-BREF. However, our research may have common disadvantages. Our samples originated from similar but different cities, and the two surveys were not conducted in the same period. Another shortfall was that the normative study did not show job status of the subsample aged 20 to 29.

Table 3: Mean scores and standard deviations by gender, World Health Organization Quality of Life Instrument-BREF domains, and year in medical school

Quality of life domains (WHOQOL-BREF)	Second-year						Fourth-year			Internship			Total medical students											
	Female (n=32)		Male (n=29)		Total (n=61)		Female (n=41)		Male (n=29)		Total (n=70)		Female (n=42)		Male (n=33)		Total (n=75)							
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD						
Physical health	51.90	(15.39)	63.79	(13.72)	57.55	(15.69)	57.67	(15.25)	64.78	(13.39)	60.61	(14.83)	57.65	(16.25)	67.86	(13.72)	62.14	(15.93)	56.06	(15.74)	65.58	(13.58)	60.26	(15.53)
Psychological	59.64	(13.74)	62.36	(14.84)	60.93	(14.21)	57.42	(14.98)	66.38	(16.70)	61.13	(16.22)	56.65	(15.21)	66.29	(13.83)	60.89	(15.30)	57.75	(14.65)	65.06	(15.06)	60.98	(15.24)
Social relationships	67.97	(15.71)	66.09	(18.49)	67.08	(16.97)	66.67	(16.46)	67.82	(20.13)	67.14	(17.94)	67.86	(17.80)	68.43	(18.72)	68.11	(18.09)	67.46	(16.63)	67.49	(18.92)	67.48	(17.64)
Environment	59.77	(13.08)	60.56	(10.81)	60.14	(11.96)	56.71	(11.30)	57.87	(14.72)	57.19	(12.74)	57.14	(16.18)	61.74	(13.71)	59.17	(15.22)	57.72	(13.68)	60.13	(13.16)	58.78	(13.47)

WHOQOL-BREF=World Health Organization Quality of Life Instrument-BREF

The compromise of psychological well-being and social relationships can have implications that exceed a physician's personal well-being. Personal well-being makes it possible for individuals to have a true empathic attitude,^[13] which, in turn, is important to supporting patients. Patient care may be impaired by the poor performance of physicians with a low quality of life. Thus, physician's quality of life goes beyond an individual standpoint and involves a social standpoint as physicians are integral components of a good healthcare system. A system for optimal health should address the quality of life of its future physicians.

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Conflicts of interest

There are no conflicts of interest.

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