

# Quality of life, physical and mental health of physicians: a self-evaluation by graduates from the Botucatu Medical School - UNESP

*Qualidade de vida e saúde física e mental de médicos: uma autoavaliação por egressos da Faculdade de Medicina de Botucatu – UNESP*

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## **Abstract**

**Objective:** This paper aimed to analyze self-evaluations in terms of quality of life (QoL), physical health (PH) and mental health (MH) of ex-medical students from a Brazilian public university, correlating these outcomes with demographic data and several professional aspects. **Methods:** a cross-sectional study with a target population of all students graduated from the Botucatu School of Medicine (UNIFESP - São Paulo State University) between 1968 and 2005. A self-administered questionnaire, which could be answered by regular mail or internet, was used. **Results:** From the 2,864 questionnaires that were sent by mail, 1,224 (45%) were answered and sent back. Good or very good QoL, PH and MH were reported by 67.8%, 78.8% and 84.5% of participants, respectively. In the final logistic regression model, positive QoL was associated with good PH and MH, regular attendance to scientific meetings, enough leisure time, and professional satisfaction. Good or very good PH was independently associated with positive QoL and MH, higher income level, regular physical activities, and never having smoked. Positive MH remained associated with professional satisfaction, enough leisure time, and positive evaluation of both QoL and PH. **Conclusions:** Among medical doctors graduated from São Paulo State University, PH and MH were inseparable aspects, which were also related to the self-evaluation of QoL. Good habits, such as regular practice of physical exercise, enough leisure time, and not smoking were associated with positive health in general and should be encouraged. Professional satisfaction had an important impact on the emotional well-being of participants.

**Keywords:** Quality of life. Health. Mental health. Self-evaluation. Physicians.

## Resumo

**Objetivo:** O presente artigo teve como objetivo analisar resultados de autoavaliações em termos de qualidade de vida (QV), saúde física (SF) e saúde mental (SM) realizadas por ex-alunos do curso de medicina de uma universidade pública brasileira, associando-se tais indicadores a dados demográficos e diversas dimensões da atuação profissional. **Métodos:** estudo de corte transversal que teve como população-alvo todos os egressos da Faculdade de Medicina de Botucatu (UNESP) no período de 1968 a 2005, utilizando-se um questionário autoaplicável, respondido por correio ou internet. **Resultados:** Dos 2.864 questionários enviados, 1.224 (45%) foram respondidos. Tanto a QV como SF e SM foram avaliadas como boa ou muito boa por 67,8%, 78,8% e 84,5% dos participantes, respectivamente. Nos modelos finais de regressão logística, associaram-se a avaliação favorável de QV: ter boa SF e SM, frequentar congressos regulamente, ter tempo suficiente de lazer e estar satisfeito com a profissão. SF boa ou muito boa associou-se independentemente com QV e SM positivas, faixa de renda mais alta, prática regular de atividades físicas e nunca ter fumado. SM favorável permaneceu associada com satisfação profissional, tempo para lazer, e boa avaliação da QV e da SF. **Conclusões:** Entre os médicos egressos da UNESP, SF e SM foram aspectos indissociáveis e também relacionados à QV. Bons hábitos, como praticar atividades físicas, ter tempo para lazer e não fumar foram associados à melhor avaliação da saúde em geral e devem ser incentivados. A satisfação profissional teve um peso importante no bem-estar emocional relatado pelos participantes.

**Palavras-chave:** Qualidade de vida. Saúde. Saúde mental. Autoavaliação. Médicos.

## Introduction

The medical profession has highly demanding aspects, such as the requirement of great dedication of time, involvement with much social responsibility, and constant contact with patients' and family members' suffering<sup>1</sup>. Recent research performed by the *Conselho Regional de Medicina do Estado de São Paulo* (CREMESP – State of São Paulo Regional Council of Medicine) revealed that the mean number of working hours of interviewed doctors was 52 hours per week, that these had three different jobs on average, and that approximately one third of them surpassed this average. In addition to the number of employment relationships and long working hours, unsatisfactory working conditions (such as lack of recognition, adequate pay, autonomy, stability, infrastructure and safety) can further overload doctors, causing stress and negatively affecting their family life and quality of life (QoL)<sup>2</sup>.

According to Firth-Cozens<sup>3</sup>, the prevalence of doctors being stressed above the usual cut-off points is approximately 28%. Nonetheless, few studies have analyzed the mental (MH) and/or physical health (PH) of Brazilian doctors. More recent studies have been conducted with specific groups, such as doctors who work in intensive care units<sup>4,5</sup>, doctors on call in pediatric emergency departments<sup>6</sup> or oncologists<sup>7-9</sup>. In general, poor working conditions are important predictors of psychological distress. Nascimento-Sobrinho et al.<sup>10</sup> studied the working conditions of 350 doctors in the city of Salvador, BA, Brazil, and observed a high frequency of time burden, multiple jobs, low pays and professional instability, in addition to a prevalence of 26% of “minor” psychological disorders. By using the demand/control model, authors found that doctors who had high demand and low control over work (high strain) were three times more likely to have psychological disorders, when compared to colleagues who worked under low strain conditions. In an international literature review conducted in 2010,

Lourenção<sup>11</sup> approached resident doctors' health and QoL particularly and observed high incidences of stress, fatigue, sleepiness and depression in this population, suggesting the implementation of specific health care programs.

In a review published about 20 years ago, which still remains current, Martins<sup>12</sup> emphasizes that stress during medical qualification and practice would be an etiological factor for the onset of mental health problems, including psychoactive substance abuse and dependence, work overload and occupational stress syndrome.

The present study was part of a survey conducted by the *Faculdade de Medicina de Botucatu (FMB-UNESP – Botucatu Medical School of the Universidade Estadual de São Paulo)*, which aimed to evaluate the former medical students' opinion about their graduate course, their inclusion in the job market and professional satisfaction, in addition to their self-evaluation of QoL, MH and PH. The present study specifically approaches the three last aspects of this survey.

## Methods

A cross-sectional study was conducted, in which all doctors graduated from the FMB – UNESP between 1968 (1<sup>st</sup> class) and 2005 (38<sup>th</sup> class) were considered potential participants. A questionnaire was especially developed and sent by mail in February 2007 to the target population of this study, i.e. a total of 2,864 former medical students. The questionnaire included questions about socio-demographic data (such as sex, age, marital status and place of residence), and data on graduation and continuing education (first and last year of course, medical residence, specialization, post-graduation, title of specialist, participation in scientific events, reading of periodicals), professional activity (specialization, employment relationships, work in different types of services, management or coordination jobs, income, level of stress due to the medical practice), QoL, leisure, MH, PH, and smoking habit, in addition to their opinion about their gradu-

ate course at the FMB (how prepared they felt to work in certain areas and to perform certain procedures). Sealed envelopes with a questionnaire, an explanatory letter and a stamped envelope were sent, which should be then sent back to the FMB with the anonymously completed questionnaire. An informed consent form was also included, to be returned in a separate envelope, thus enabling the control of refusals. The questionnaire was sent a second time in October 2007, in an attempt to reduce the number of these refusals. The returned questionnaires were subsequently typed. There was still the option of responding to the online questionnaire through the FMB website using a password, when former students preferred this. Online completion followed the same procedure of the written questionnaire, although including an adaptation to the virtual environment and having the signed consent form as a prerequisite for its completion. Self-evaluation of QoL, in addition to that of MH and PH, was performed, with five possible responses as parameter: very good, good, fair, poor or very poor, which were subsequently grouped.

## Statistical Analysis

The analysis was performed using quantitative methods in the Stata 10.0 software<sup>13</sup>. First, a descriptive analysis of variables was made, followed by univariate analyses to identify possible associations, selecting the following as dependent variables: self-evaluation of QoL, PH and MH. Pearson's chi-square test was used (or Fisher's exact test, when recommended) for categorical variables, while Student's t-test was used for continuous variables. Next, a multivariate analysis was performed using stepwise logistic regression, thus obtaining the adjusted odds ratios (OR)<sup>14</sup>. A total of three logistic models were constructed, one for each dependent variable, where the explanatory variables that showed  $p < 0.10$  in the univariate analysis were included in the logistic regression models. Regardless of their statistical significance, age, sex and

income were included in the logistic models, because the objective was to obtain adjusted OR not confounded with these variables. Age is a variable which is closely associated with physical health, whereas the female sex and income show a significant association with more common mental disorders<sup>15</sup>. The statistical significance level adopted was  $p < 0.01$ , due to the large sample size and to the high number of tabulations performed, which could result in mathematically significant results exclusively.

### Ethical Aspects

Questionnaires were not identified and their data were analyzed together, guaranteeing participants' anonymity, who signed an informed consent form to be included. The present study was approved by the *Comitê de Ética em Pesquisa da FMB* (Botucatu Medical School Research Ethics Committee), in November 2006.

### Results

Of all 2,864 questionnaires sent, 1,224 (44.9%) were completed. A total of 72 (2.5%) former students had addresses which had not been updated and thus were not found, and 64 deaths were reported (2.2%). The remaining questionnaires were not responded in the interval of one year, although a second questionnaire was sent by mail. As each class had 90 students, the response rate varied from 12.2% to 51.1% of medical graduates, and all classes were represented in the study.

Of all 1,224 former students who responded to the questionnaire, 791 (64.6%) were males and 411 (33.6%) were females, and there were no differences between the sample and universe of former students ( $p=0.24$ ), evaluated by the Chi-square test. A total of 22 questionnaires (1.8%) did not include information about sex. Mean age of former students was 46.5 years  $\pm$  10.9, ranging from 24 to 72 years, of which 5.7% were aged up to 30 years; 22.3%, between 31 and 40 years; 28.4%, between 41 and 50

years; 26.2%, between 51 and 60 years; and 17.3%, more than 60 years. The majority of former students were either married or cohabiting (77.5%) and reported having at least one child (76.0%).

In addition, most of them (96.4%) lived in the state of São Paulo, of which 844 (70.4%) lived in cities in the countryside and 728 (61.1%) in cities with less than 500,000 inhabitants. A total of 98% reported practicing medicine and 66.1% affirmed they were professionally satisfied. With regard to the level of income, 10.5% reported earning less than R\$ 5,000.00 per month (approximately US\$ 2,500); 34.2%, between R\$ 5,000.00 and R\$ 10,000.00 (between US\$ 2,500 and US\$ 5,000); 28.6%, between R\$ 10,000.00 and R\$ 15,000.00 (between US\$ 5,000 and US\$ 7,500); 41.1%, between R\$ 15,000.00 and R\$ 20,000.00 (between US\$ 7,500 and US\$ 10,000); and 12.5%, more than this value.

Table 1 shows the frequencies of the three main indicators (QoL, PH and MH), self-assessed by participants. It was observed that 68% of former students considered their QoL as "very good or good" and that, likewise, 79% and 85% considered their PH and MH, respectively.

"Average, high, or very high" levels of stress were reported by 656 (56.3%) participants when dealing with situations of death of patients; 644 (54.7%), when dealing with seriously ill patients; 330 (27.7%), when communicating with patients and family members; and 363 (31.1%), when dealing with civil law suits. No or little stress in such situations was reported by the remaining participants, except for 29 who did not respond to these items in the questionnaire (data not shown).

Table 2 shows data on former students' QoL, leisure, physical activity practice, smoking habit, MH and PH, according to sex. Among men, ex-smokers and smokers predominated (60.7%), whereas "never smoked" was the most frequent response among women (78.6%). There were no significant differences between men and women in the remaining aspects. Only 52.3% of participants reported having sufficient lei-

**Table 1** – Distribution of graduates from Botucatu Medical School-UNESP (n = 1,224) as to their self-evaluation of quality of life, physical health and mental health.

**Tabela 1** - Distribuição dos ex-alunos da FMB-UNESP (n = 1.224), quanto à autoavaliação de qualidade de vida, saúde física e mental.

	Quality of Life		Physical Health		Mental Health	
	N	%	N	%	N	%
<b>Very good</b>	245	20.0	276	22.5	414	33.8
<b>Good</b>	585	47.8	689	56.3	621	50.7
<b>Fair</b>	301	24.6	210	17.2	145	11.9
<b>Poor</b>	58	4.7	20	1.6	15	1.2
<b>Very poor</b>	11	0.9	2	0.2	6	0.5
<b>Did not respond</b>	24	2.0	27	2.2	23	1.9

sure time. Moreover, with regard to lifestyle, 44.4% practiced physical activities at least three times per week, whereas 28.6% did not practice any regular activities (Table 2).

The QoL variable was categorized into “very good or good” and “fair, poor or very poor” for the multivariate analysis, whose results are shown in Table 3. In the final logistic regression model, “very good or good” QoL was found to be independently associated with: regular participation in congresses or scientific events, considering one’s MH and PH as “good or very good”, being satisfied with one’s profession, reporting that one would take up medicine again, and having sufficient leisure time (Table 3).

The “self-evaluation of PH” variable was also categorized into “very good or good” and “fair, poor or very poor” for the multivariate analysis. “Good or very good” PH remained associated with the following independent variables: having a higher income, having never smoked, considering one’s QoL and MH as “good or very good” and performing regular physical activity (Table 4).

When the “good and very good” levels of MH were grouped for the multivariate analysis, the following variables remained independently associated: being older, considering one’s QoL and PH as “good or very good”, having sufficient leisure time and being satisfied with one’s profession (Table 5).

## Discussion

This is a pioneer study in terms of coverage, because its target population was the entire universe of former students who had graduated from the FMB-UNESP in the first 38 classes. It evaluated socio-demographic aspects and those related to professional satisfaction and inclusion in the job market, opinion about the course, occupational stress, QoL, MH and PH, these last three indicators being the objects of the present study. Thus, differently from the 2002 CREMESP survey<sup>2</sup>, which interviewed a sample of 400 doctors of this state exclusively, this study aimed to evaluate the entire population of former FMB students.

It was observed that 80% of former students evaluated their own PH and MH positively, despite all stressful factors and demands of their professional practice. Although this may have occurred as a result of response bias, i.e. former students with better health conditions have higher representativeness among the study participants, it is known that poor or very poor MH and PH conditions are practically incompatible with the professional practice. This result was similar to that found by the CREMESP<sup>2</sup>, where such satisfaction was attributed to positive aspects of the medical practice, such as doing a relevant job that results in fulfillment or gratification; helping people; being valued; earning a reasonable income; and achieving status, respect or social

**Table 2** – Self reported quality of life, leisure, exercise, smoking, physical health, and mental health in graduates from the Botucatu School of Medicine Botucatu Medical School-UNESP, by sex (n = 1,224)<sup>1</sup>.

**Tabela 2** - Autoavaliação de qualidade de vida, lazer, prática de atividade física, tabagismo e saúde física e mental dos ex-alunos da Faculdade de Medicina de Botucatu (UNESP), de acordo com o sexo (n = 1.224)<sup>1</sup>.

	Male 791 (64.4%)		Female 411 (33.6%)		Total <sup>1</sup>		p
	n	%	n	%	N	%	
<b>Quality of Life*</b>							0.16
Good or very good	553	70.4	271	66.4	824	69.0	
Fair, poor or very poor	233	29.6	137	33.6	370	31.0	
<b>Sufficient leisure time**</b>							0.93
Yes	409	52.4	211	52.1	620	52.3	
No	391	48.6	200	47.9	591	47.7	
<b>Physical activity practice</b>							0.25
No	223	28.2	121	29.5	344	28.6	
1 to 2 time per week	204	25.8	120	29.3	324	27.0	
3 or more times per week	364	46.0	169	41.2	533	44.4	
<b>Smoking habit</b>							<0.001
Never smoked	475	60.7	319	78.6	794	66.8	
Ex-smoker or smoker	307	39.3	87	21.4	394	33.2	
<b>Physical Health***</b>							0.11
Good or very good	621	79.2	338	83.1	959	80.5	
Fair, poor or very poor	163	20.8	69	16.9	323	19.5	
<b>Mental Health****</b>							0.20
Good or very good	684	87.0	345	84.3	1029	86.1	
Fair, poor or very poor	102	13.0	64	15.7	166	13.9	

<sup>1</sup> 22 subjects did not report sex. *Sem informação sobre sexo de 22 sujeitos.*

\* 6 subjects did not report it. *Sem informação de 6 sujeitos.*

\*\* 13 subjects did not report it. *Sem informação de 13 sujeitos.*

\*\*\* 11 subjects did not report it. *Sem informação de 11 sujeitos.*

\*\*\*\* 7 subjects did not report it. *Sem informação de 7 sujeitos.*

recognition. The fact that a higher number of working hours did not remain associated with worse MH supports this hypothesis, suggesting that, although this may be important, aspects such as job satisfaction are relevant to determine the health status of doctors.

It should be emphasized that favorable MH and PH were positive and statistically associated with each other, as well as with “good or very good” QoL. In a recent article entitled “No health without mental health”,

published in The Lancet<sup>16</sup>, the authors stated again the long known fact that there is a close association between psychological problems or, strictly speaking, mental disorders and other general health conditions. Emotional problems increase the risk of communicable (such as AIDS and tuberculosis) or non-communicable diseases (such as cardiovascular diseases, diabetes and neoplasias) and contribute to the occurrence of injuries, whether intentional or not, such as self- or hetero-aggressions, and

**Table 3** - Final logistic regression model for Quality of Life<sup>1</sup> among graduates from the Botucatu Medical School (n = 1,224): variables that remained significantly associated with regular, bad or very bad Quality of Life.

**Tabela 3** - Modelo Final de Regressão Logística para Qualidade de Vida<sup>1</sup> entre egressos do curso de medicina da Faculdade de Medicina de Botucatu (n = 1.224): variáveis que permaneceram associadas significativamente a Qualidade de Vida regular, ruim ou muito ruim.

Variable	Adjusted Odds Ratio <sup>2</sup>	CI 95%**	p <sup>3</sup>
<b>Goes to congresses regularly</b>			<b>0.002</b>
Yes	1		
No	2.03	1.34-3.06	
<b>Physical Health</b>			<b>&lt;0.001</b>
Good/very good	1		
Fair/poor/very poor	3.90	2.61-5.81	
<b>Mental Health</b>			<b>0.002</b>
Good/very good	1		
Fair/poor/very poor	2.09	1.30-3.35	
<b>Satisfaction with one's profession</b>			<b>&lt;0.001</b>
Yes	1		
No	2.51	1.76-3.58	
<b>Would choose medicine again</b>			<b>0.009</b>
Yes	1		
No	2.24	1.22-4.12	
<b>Has sufficient leisure time</b>			<b>&lt;0.001</b>
Yes	1		
No	8.89	6.16-12.82	

\* Odds Ratio \*\* 95% confidence interval. *Intervalo de Confiança de 95%.*

<sup>1</sup> Reference category good or very good (0) quality of life, compared to regular, bad or very bad quality of life (1). *Categoria de referência qualidade de vida boa ou muito boa (0), comparado com qualidade de vida regular, ruim ou muito ruim (1).*

<sup>2</sup> Adjusted for sex, income, age and other variables of the model. *Ajustado para sexo, renda, idade e demais variáveis do modelo.*

<sup>3</sup> Waldt's test. *Teste de Waldt.*

occupational and traffic accidents. Mental disorders are also associated with risk factors for chronic diseases, such as smoking, alcohol and drug use, little physical activity, unhealthy dietary habits and arterial hypertension. On the other hand, many health conditions increase the risk of mental disorders and this co-occurrence can hinder the search for services, diagnosis and treatment, with a negative impact on the prognosis of cases<sup>16</sup>. Thus, it was observed that mental disorders contribute to mortality and that they are important causes of incapacitation and dependence. In addition, in the 2005 World Health Organization (WHO) report<sup>17</sup>, 32% of all years lived with disability were attributed to neuropsychiatric conditions. The above mentioned publication has recently launched a movement<sup>18</sup> that warns about the importance of MH in one's general

health, emphasizing that MH care is still a neglected issue that, however, should be integrated into the remaining aspects of planning and offering of health services. Thus, greater attention should be paid to the emotional aspects of well-being and health, whose care must be fully included in the general public health policies, because psychosocial interventions can improve several physical health outcomes<sup>16</sup>, including that of professionals working in this area.

With regard to the positive self-evaluation of PH in particular, it could be observed that this was also independently associated with higher level of income, having never smoked and practicing physical activity at least three times per week. As a result, the association between healthy habits and lifestyle and good PH was confirmed, even when controlling for variables such as age

**Table 4** – Final logistic regression model for physical health1 among graduates from the Botucatu Medical School (n = 1,224): variables that remained significantly associated with regular, bad or very bad Physical Health.

**Tabela 4** - Modelo Final de Regressão Logística para Saúde Física<sup>1</sup> entre egressos do curso de medicina da Faculdade de Medicina de Botucatu (n = 1.224): variáveis que permaneceram associadas significativamente a Saúde Física regular, ruim ou muito ruim.

Variable	Adjusted Odds Ratio <sup>2</sup>	CI 95%**	p <sup>3</sup>
<b>Income (in monthly reais)<sup>4</sup></b>			<b>0.01</b>
15,000 or more	1		
Less than 15,000	1.73	1.13-2.65	
<b>Smoking habit</b>			<b>0.004</b>
Never smoked	1		
Smoker or ex-smoker	1.75	1.19-2.57	
<b>Quality of Life</b>			<b>&lt;0.001</b>
Good or very good	1		
Fair, poor or very poor	3.46	2.41-4.94	
<b>Mental Health</b>			<b>&lt;0.001</b>
Good or very good	1		
Fair, poor or very poor	4.97	3.30-7.48	
<b>Physical activity</b>			<b>&lt;0.001</b>
0 to 2 times/week	1		
3 or more times/week	2.71	1.82-4.04	

\* Odds Ratio \*\* 95% confidence interval. *Intervalo de Confiança de 95%.*

<sup>1</sup> Reference category good or very good (0) physical health, compared to regular, bad or very bad physical health (1). *Categoria de referência saúde física boa ou muita boa (0) comparado com saúde física regular, ruim ou muito ruim (1).*

<sup>2</sup> Adjusted for sex, income, age and other variables of the model. *Ajustado para idade, sexo e demais variáveis do modelo.*

<sup>3</sup> Waldt's test. *Teste de Waldt.*

<sup>4</sup> With the minimum wage of R\$ 380.00 in 2007, R\$ 15,000.00 are equivalent to slightly less than 40 minimum wages (39.5 minimum wages). *Com o salário mínimo no valor de R\$380,00, em 2007, 15 mil reais equivaleriam a pouco menos de 40 salários mínimos (39,5 salários mínimos).*

and income. Although the cross-sectional design of the study does not enable the direction of causality to be inferred, it is possible that professionals with higher levels of income can focus on physical activities more regularly, which would have a positive impact on their PH.

With regard to MH, it is interesting to observe that there was an independent association between favorable assessment and older age, having leisure time and being satisfied with one's profession. Consequently, it is possible that more experienced professionals have a more stable and safer professional condition, including their financial condition, which has a repercussion on greater professional satisfaction and enables one to have more leisure time. In the survey conducted by the CREMESP in 2007, younger professionals worked for more hours, had a higher number of jobs

and received lower salaries, when compared to the older ones<sup>2</sup>. A study conducted in Turkey by Uncu et al.<sup>19</sup> found a significant association between negative emotional perceptions of work and the occurrence of depression, anxiety and stress among doctors working in primary care services. In a nationwide study conducted by Gouveia et al.<sup>20</sup>, older age was also associated with doctors' greater satisfaction – in this case, with life in general – in five Brazilian regions.

According to Firth-Cozens<sup>3</sup>, the prevalence of doctors whose level of stress was above average totaled approximately 28%, in both longitudinal and cross-sectional studies. It is not this prevalence that has changed throughout the years, but rather the awareness of such professionals, who began to report their suffering more easily than before. In the present study, the prevalence of MH rated as “fair, poor or very



**Table 5** – Final logistic regression model for Mental Health<sup>1</sup> among graduates from the Botucatu Medical School (n = 1,224): variables that remained significantly associated with regular, bad or very bad Mental Health.

**Tabela 5** – Modelo Final de Regressão Logística para Saúde Mental<sup>1</sup> entre egressos do curso de medicina da Faculdade de Medicina de Botucatu (n = 1.224): variáveis que permaneceram associadas significativamente a Saúde Mental regular, ruim ou muito ruim.

Variável	Odds Ratio ajustado <sup>2</sup>	IC 95%	p <sup>3</sup>
<b>Age<sup>4</sup></b>	0.96	0.94-0.97	<b>&lt;0.001</b>
<b>Quality of Life</b>			<b>&lt;0.001</b>
Good or very good	1		
Fair, poor or very poor	2.40	1.53-3.75	
<b>Sufficient leisure time</b>			<b>0.01</b>
Yes	1		
No	2.33	1.44-3.78	
<b>Satisfaction with one's profession</b>			<b>0.001</b>
Yes	1		
No	3.05	2.02-4.61	
<b>Physical Health</b>			<b>&lt;0.001</b>
Good or very good	1		
Fair, poor or very poor	4.53	3.00-6.83	

<sup>1</sup> Reference category good or very good (0) mental health, compared to regular, bad or very bad mental health (1). *Categoria de referência saúde mental boa ou muito boa (0) comparada com saúde física regular, ruim ou muito ruim (1).*

<sup>2</sup> Adjusted for other variables of the model. *Ajustado para demais variáveis do modelo.*

<sup>3</sup> Wald's test. *Teste de Wald.*

<sup>4</sup> Age was included as a continuous variable, as complete years. *Idade foi incluída como variável contínua, em anos completos.*

poor” was only 18%. However, it should be noted that this survey did not use standardized instruments to identify psychological suffering.

According to Martins<sup>21,22</sup>, there are few studies that analyzed Brazilian doctors' MH or PH, although the theme has deserved more attention in the literature. In this author's view<sup>22</sup>, psychologically unhealthy conditions inherent to the medical practice can cause psychological and psychiatric disorders in more vulnerable individuals. The development of new diagnostic and therapeutic technologies, the influence of the pharmaceutical industry and companies that provide medical services have considerably changed the practice of medicine. These changes have repercussions, such as the decrease of autonomy and income, increase in work demand, change in lifestyle and relationship with patients and colleagues, and effect on professionals' health<sup>23</sup>. Thus, despite the innumerable psychological gratifications and the possibility of material, emotional and intellectual

fulfillment, the medical profession is usually highly stressful and anxiogenic<sup>23</sup>.

Certain recent studies evaluated psychological aspects in specific groups, such as doctors who work in emergency services, intensive care units (ICUs)<sup>4,5</sup> and first-aid rooms; those on call in pediatric emergency units<sup>6</sup>; or oncologists<sup>7-9</sup>. In general, working conditions appear as important predictors of psychological suffering. In a study conducted by Cabana et al.<sup>4</sup>, although the difference did not reach statistical significance, the prevalence of common mental disorders (which include anxiety, somatoform and “minor” depressive disorders) was higher among professionals who worked in emergency services (32%), when compared to those who worked in ICUs or first-aid rooms (approximately 17%). In addition, the former showed less favorable working conditions, including a higher number of jobs and weekly working hours, greater feeling of work overload, and lower level of income. In a study conducted by Tironi et al.<sup>5</sup>, the prevalence of burnout syndrome among

doctors working in ICUs was 7.4%, being closely associated with high psychological demand of work, including a high number of weekly on call hours, younger age, fewer years of professional practice, lower income, lack of physical activity practice or hobbies.

In a qualitative study conducted with professionals of pediatric emergency services, Feliciano et al.<sup>6</sup> identified unequal feelings such as tiredness, anguish, fear of making mistakes and outrage caused by work overload and a salary incompatible with the responsibility and effort required and, on the other hand, satisfaction for enjoying the work and feeling useful. For this reason, authors concluded that there is a great need for health promotion actions in the work environment of professionals of this area.

An English study that evaluated the possible impact of working conditions on the health of young doctors<sup>24</sup> found a positive correlation between the feeling of work overload and several long term measures for work performance, and MH and PH. In a different study,<sup>25</sup> the same authors reported that young doctors had several health complaints and that 30% of them were classified as “positive cases” in relation to the cut-off point for psychiatric symptoms. Moreover, many showed maladaptive patterns of self-care, such as continuing to work when one is not feeling well, not going on sick leaves, and self-medicating oneself, in addition to the tendency of informally consulting friends instead of setting up regular consultations. Gardner and Ogden<sup>26</sup>, while studying English general practitioners, reported that many do not do for themselves what they recommend their patients should do. Martins<sup>23</sup> reports the same type of posture in Brazil, where the difficulty to seek a colleague as a patient causes many doctors to have a tendency towards self-diagnosing and self-medicating themselves.

In a study conducted by Glasberg et al.<sup>9</sup>, moderate or severe levels of burnout syndrome (which involves emotional exhaustion, depersonalization and low personal fulfillment) occurred in 16% of the oncolo-

gists studied. Lower levels of the syndrome were associated with the following: older age, being in a stable marital relationship, participating in a religious group, practicing physical activities or, having a hobby, and sufficient vacation time. Lack of personal time was the main factor associated with the burnout syndrome among oncologists as well<sup>7</sup>. It is interesting to observe that, in the present study, leisure remained associated with positive evaluation of MH, but not of PH or QoL.

Certain limitations to this study must be taken into consideration. The first one is the response rate, a key issue in cross-sectional studies. The percentage of responses obtained (45%) can be considered satisfactory, because a rate varying from 30% to 40%<sup>27</sup> is what is expected of a mail survey and because all classes were represented in the sample. In addition, even if a higher rate were ideally expected, the rate obtained was higher than those of similar studies conducted in Brazil, which varied from 25.0% to 32.1%, in the *Faculdade de Medicina de Ribeirão Preto* (Ribeirão Preto School of Medicine)<sup>28</sup> and in the *Universidade Luterana do Brasil* (Brazilian Lutheran University)<sup>29</sup>, respectively. Moreover, the number of deaths (only 2.2%) is probably underestimated. Another aspect to be emphasized is that the cross-sectional design of the study only indicates associations between the outcomes of interest and possible explanatory variables, not enabling conclusions about causality to be made. Another question which cannot be disregarded is the possibility of response bias, because former students with better self-evaluation of their PH and/or MH may be more likely to participate in the survey. The question of demand/control<sup>30</sup> and that of participants' specialty were not evaluated, which could also be associated with health and QoL<sup>31</sup>. Finally, this survey did not use standardized instruments to evaluate health problems, psychological suffering or QoL, only direct questions about these aspects, with five response choices.

## Conclusions

Despite professional practice demands, approximately 80% of FMB-UNESP former students reported good levels of MH or PH. A direct and significant association between good PH and good MH emphasizes the inseparability of these two aspects, which should be considered in an integrated way, when planning not only therapeutic actions, but also possible health promotion and illness prevention actions among doctors. It should be noted that these two aspects, like the two sides of a coin, are also significantly associated with participants' better evaluation of QoL. In addition, good life habits, such as practicing physical activities regularly, having leisure time and not smoking, were associated with better health evaluation in general and should be promoted, whenever possible. On the other hand, favorable MH was associated with professional satisfaction. Considering the fact that the majority of doctors spends a great part of their time with professional activities, job satisfaction – whose positive aspects cannot be ignored – seem to have an important influence on their emotional well-being.

In conclusion, the present study identified certain relevant factors that were independently associated with each of the outcomes evaluated. It is essential for professionals in the medical area to adequately care for their own PH and MH, because these are directly associated with one another and also with self-evaluation of QoL. It is necessary that doctors pay attention to their own needs to better perform the important task of caring for the health of others.

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