

# Burnout syndrome and satisfaction with life among neurologists in Rio de Janeiro, Brazil

## *Síndrome de burnout e satisfação com a vida em neurologistas do Rio de Janeiro, Brasil*

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### ABSTRACT

**Objective:** To determine the correlation between burnout syndrome and satisfaction with life in neurologists in the state of Rio de Janeiro, and to identify associated demographic and social/occupational variables. **Methods:** A questionnaire was sent by Internet to the 243 members of the Rio de Janeiro Neurologists Association. The Maslach Burnout Inventory (MBI) was used to individually evaluate each of the dimensions of emotional exhaustion, depersonalization and feeling of reduced personal accomplishment, while the Satisfaction with Life Scale was used to assess satisfaction with life. The chi-square test, Fisher's exact test and Pearson's correlation coefficient were used in the statistical analysis. **Results:** Ninety-four questionnaires were returned (38.8%). The rate of burnout was 60.6% (Grunfeld) compared to 6.4% (Ramirez). Satisfaction with life was found in 86.2% of cases. There was a significant correlation between burnout and satisfaction with life, in both burnout criteria. When each dimension of the MBI was correlated with satisfaction with life, the following associations were found: emotional exhaustion ( $p < 0.0001$ ;  $r = -0.417$ ), depersonalization ( $p = 0.0013$ ;  $r = -0.329$ ) and feeling of reduced personal accomplishment ( $p = 0.0001$ ;  $r = -0.491$ ). **Conclusion:** There is a correlation between burnout and dissatisfaction with life among neurologists in Rio de Janeiro. Although the majority is satisfied with their lives, a high occurrence of burnout was found with both sets of criteria. The principal variables associated with burnout syndrome and dissatisfaction with life were long working hours, being unmarried, not being religious, having worked for less time in the specialty, lack of vacations, and not taking part in any form of physical activity or hobby.

**Keywords:** burnout, satisfaction with life, neurologists

### RESUMO

**Objetivo:** Determinar a correlação entre a síndrome de burnout e satisfação com a vida em neurologistas do estado do Rio de Janeiro e identificar variáveis demográficas e sociocupacionais associadas. **Métodos:** Um questionário foi enviado pela Internet para 243 neurologistas, membros da Associação de Neurologia do Estado do Rio de Janeiro (ANERJ). O Inventário de Burnout de Maslach (MBI) foi usado para avaliar individualmente cada uma das dimensões de exaustão emocional, despersonalização e sentimento de realização pessoal reduzido, enquanto a satisfação com a vida de escala foi utilizada para avaliar a satisfação com a vida. O teste de qui-quadrado, teste exato de Fisher e coeficiente de correlação de Pearson foram utilizados na análise estatística. **Resultados:** Noventa e quatro questionários foram respondidos (38,8). A taxa de burnout foi 60,6 (Grunfeld) em comparação com 6,4 (Ramirez). Satisfação com a vida foi definida em 86,2. Houve uma correlação significativa entre burnout e satisfação com a vida em ambos os critérios de burnout. Quando cada dimensão do MBI correlacionou-se com a satisfação com a vida, foram encontradas as seguintes associações: exaustão emocional ( $p = 0.0001$ ;  $r = -0.417$ ), despersonalização ( $p = 0.0013$ ;  $r = -0.329$ ) e sensação de redução da realização pessoal ( $p = 0.0001$ ;  $r = -0.491$ ). **Conclusão:** Existe uma correlação entre estresse e insatisfação com a vida entre os neurologistas do Rio de Janeiro. Embora a maioria esteja satisfeita com suas vidas, uma alta ocorrência de burnout foi encontrada.

**Palavras-chave:** burnout, satisfação com a vida, neurologistas

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## INTRODUCTION

Work-related ailments have currently become an important research topic in view of the transformations imposed by globalization, the technological evolution, market competitiveness and the economic and political changes on the daily routine of individuals. In a system in which information and work methods change rapidly, workers become more and more prone to imbalances in their physical, emotional and mental health.

Physicians are more susceptible to occupational stress than any other professional class irrespective of the field of medicine in which they work, the healthcare level or even their specialty, since doctors in general are more likely to have to deal with situations of suffering, pain and death<sup>1,2</sup>.

Various studies on work-related disorders have concluded that the medical profession is more susceptible to burnout syndrome because of the inherent characteristics of the profession such as having to deal with lives that are almost always in situations of vulnerability, having to make decisions that involve risks to an individual's life and having to perform clinical and surgical interventions in gravely ill patients<sup>3-5</sup>. Burnout syndrome was first described in 1974 by the American psychologist Herbert Freudenberger, who observed a gradual decline in mood and/or a lack of motivation in many of the volunteers who worked with him, generally accompanied by physical and psychological symptoms indicative of a certain state of burnout or exhaustion as a result of intense dedication or effort in an occupation, with the repercussions of this being felt in various realms of the professional, personal, family and social life of the individual<sup>6</sup>.

There are two principal dimensions in subjective well-being: an affective or emotional dimension represented by positive feelings (pleasure) and negative feelings (displeasure), and another cognitive dimension that corresponds to satisfaction with life<sup>7</sup>.

Some investigators have given greater emphasis to external criteria or specific dimensions as constituting indicators of satisfaction with life (*e.g.* health, work, family) in the expectation that individuals will take these factors into account when reporting how satisfied they are with life<sup>8</sup>. Despite the importance of these dimensions, the overall way in which people assess their lives has to be taken into consideration.

Although there is a correlation between burnout syndrome and the cognitive notion of satisfaction with life, they represent different constructs and little is currently known regarding the actual association between these two states.

The objective of the present study was to evaluate and quantify the existence of a correlation between burnout syndrome and satisfaction with life among neurologists in the state of Rio de Janeiro, Brazil, and to attempt to identify possible associations with demographic and social/occupational characteristics.

## METHODS

A questionnaire designed to collect demographic and social/occupational data that also included the Maslach Burnout Inventory (MBI) and the Satisfaction with Life Scale (SWLS) was sent by Internet to the 243 physicians affiliated to the Rio de Janeiro Neurologists Association (ANERJ), inviting them to participate anonymously in the study. In conformance with the Brazilian regulations on research studies involving human beings, a consent form containing all the information regarding the study was sent together with the questionnaire. The study protocol was approved by the Internal Review Board of the Federal University of Rio de Janeiro, as well as by the President of ANERJ.

Inclusion criteria consisted of physicians working in any area related to neurology who had worked in the specialty for at least a year. Physicians who were not actively working in this field at the time of the study were excluded.

The first part of the questionnaire was designed to collect demographic data such as the individual's name (optional), registration number in the Rio de Janeiro State Medical Council, date of birth, marital status, gender, number of children, whether the individual actively participated in some form of religious practice and whether he/she had some support from his/her family. The second section on social/occupational data was designed to obtain professional information such as: year of graduation, time since specializing in neurology, area of neurology in which the physician worked, number of hours worked per week, number of patients seen and whether the individual practiced any form of physical activity or had a hobby. In addition, the third section consisted of the MBI and the SWLS.

The MBI was adapted and validated for use in the Portuguese language by Roazzi<sup>9</sup>. It consists of 22 questions distributed into three dimensions: emotional exhaustion (EE), depersonalization (DP) and feeling of reduced personal accomplishment (RPA), which deals with professional status/esteem. As previously described<sup>10</sup>, the scores obtained in these dimensions permit classification of the degree to which the individual is affected: severely, moderately or minimally, in accordance with the scoring system of the MBI questionnaire. Since the crude scores for EE, DP and RPA provided by the MBI are difficult to interpret, the criteria proposed by Ramirez *et al.* and Grunfeld *et al.* were used to diagnose the presence or absence of burnout syndrome. According to the Ramirez criteria, burnout is present when all three dimensions are severely affected<sup>11</sup>, whereas according to the Grunfeld criteria, burnout is present when at least one dimension is severely abnormal<sup>12</sup>.

The SWLS is used to evaluate the judgment individuals make regarding how satisfied they are with their lives<sup>13</sup>. The scale consists of five items that evaluate the cognitive component of subjective well-being. The research subjects respond on a 7-point scale that ranges from 1 (disagrees completely) to 7 (agrees completely). The questions were adapted in the Portuguese version to make them more adequate for use in Brazil<sup>14</sup>. The principal advantages of this measurement in relation to the others used to evaluate satisfaction with life appear clear: it is a short scale consisting of multiple items covering a single factor and its format ensures that it is simple to complete<sup>7,15</sup>. Data collection was performed over the ten-week period between July 14 and September 20, 2009.

Fisher's exact test and the chi-square test were used to evaluate correlations between categorical variables. To evaluate correlations between continuous and categorical variables, Pearson's correlation analysis test was used. P-values  $\leq 0.05$  were considered statistically significant.

## RESULTS

Of the 243 questionnaires mailed by Internet to neurologists, 94 were completed and returned, a response rate of 38.8%. Mean age of the respondents was  $43.3 \pm 11.5$  years (mean  $\pm$  SD); 64.9% were

female; 55.3% were married; 5.4% lived with a partner and 61.7% had children. Most (78.7%) lived in the state capital city and 81.9% were affiliated to some form of religion (Table 1).

**Table 1.** Demographic characteristics of this sample of neurologists from the state of Rio de Janeiro, Brazil

Variable	Valid answers	Percentage
Age (mean)	94	43.3 ( $\pm$ 11.5) years
Age-group		
20 – 30 years	15	16.0%
31 – 40 years	33	35.1%
41 – 50 years	19	20.2%
51 – 60 years	19	20.2%
$\geq$ 61 years	8	8.5%
Sex		
Male	33	35.1%
Female	61	64.9%
Marital status		
Married	52	55.3%
Single	24	25.5%
Widowed	5	5.3%
Separated	7	7.4%
Divorced	5	5.4%
In a stable union	1	1.0%
Children		
Yes	58	61.70%
1 child	19	20.21%
2 children	26	27.66%
3 children	5	5.32%
$\geq$ 4 children	3	3.19%
No	41	43.62%
Place of residence		
State capital city	74	78.7%
Another town	20	21.3%
Religion		
Yes	77	81.9%
Attends frequently	17	18.1%
Attends occasionally	43	45.7%
Attends rarely	19	20.2%
No	15	16.0%

With respect to the occupational section of the questionnaire, most respondents stated that they worked in general neurology (87.3%), in a private office (69.1%), in a public hospital (43.6%), in a private hospital (43.6%) or at a University Teaching Hospital (37.2%). Over two-thirds of respondents (67.4%) worked more than 40 hours a week. Most (56.4%) spent 10-30 minutes with each patient. In terms of the number of patients seen per day, 66% of respondents saw up to 20, while 34% saw more than

20 patients a day. Most of the neurologists surveyed reported that they received support from their family (64.9%), regularly performed some kind of physical activity and/or had a hobby (80.85%). The majority of participants (73.4%) took vacations regularly, 23 (24.7%) taking 15 days, and 46 (49.1%) taking 30 or more days per year (Table 2).

**Table 2.** Social/occupational characteristics of this sample of neurologists from Rio de Janeiro, Brazil

Variable	Valid responses	Percentage
Area of work*		
General neurology	82	87.2%
Pediatric neurology	16	17.0%
Neurological intensive care	8	8.5%
Neurosurgery	0	0%
Neurology diagnostics	3	3.2%
Neurophysiology	16	17.0%
Epilepsy	7	7.4%
Sleep disorders	5	5.3%
Teaching activities	20	21.9%
Multiple sclerosis	2	2.3%
Others	12	12.8%
Place of work*		
Public hospital	41	43.6%
Private hospital	41	43.6%
University teaching hospital	35	37.2%
Private clinic	20	21.3%
Private office	65	69.1%
Diagnostics center	3	3.2%
Intensive care unit	12	12.8%
Teaching institute	22	23.4%
Public healthcare unit	12	12.8%
Rehabilitation clinic	2	2.1%
Others	13	13.8%
Hours worked per week		
< 30 hours	4	4.3%
31 – 40 hours	27	28.7%
41 – 50 hours	28	29.8%
51 – 60 hours	23	24.8%
> 61 hours	12	12.8%
Number of patients seen/day		
< 10	20	21.3%
11 – 20	42	44.7%
21 – 30	22	23.4%
31 – 40	7	7.4%
> 41	3	3.2%
Mean time of consultation		
10 – 20 minutes	16	17.0%
21 – 30 minutes	37	39.3%
31 – 40 minutes	21	22.3%
41 – 50 minutes	16	17.0%
> 51 minutes	4	4.3%

Variable	Valid responses	Percentage
Family support		
Yes	61	64.9%
Always	24	25.2%
Regularly	27	28.7%
Rarely	11	11.7%
No	30	31.9%
Frequency of vacation		
At least one week per year	13	13.8%
15 days per year	23	24.5%
30 days per year	42	44.9%
> 30 days per year	4	4.2%
No vacations in the past year	5	5.3%
Does not usually take vacation	5	5.3%
Has never taken vacation	1	1.0%
Hobby or physical activity		
Yes	76	80.8%
Always	13	13.8%
Regularly	32	34.0%
Rarely	31	33.0%
No	18	19.1%

\* The results obtained for the variables *area of work* and *place of work* add up to more than 100% due to the fact that several of the neurologists work in more than one area and in more than one place.

Results and interpretations of the MBI in accordance with the Grunfeld or Ramirez definitions are shown in table 3. According to the Ramirez criteria in which burnout is considered present when all three dimensions are severely abnormal, the prevalence of burnout was 6.4%. According to the Grunfeld criteria in which burnout is considered to be present when at least one dimension is severely abnormal, the prevalence of the syndrome was 60.6%.

Since no consensus has yet been reached regarding the definition of burnout syndrome, it was decided to consider the mean scores and percentages of cases for individuals in whom all three dimensions were severely affected. The mean score of the emotional exhaustion dimension was  $24.26 \pm 11.19$  and 39.4% of individuals were severely affected in this dimension. Evaluation of the depersonalization dimension showed that 31 of the 94 neurologists (33%) were severely affected in this dimension, with a mean MBI score of  $8.3 \pm 7.69$ . Mean score for the feeling of reduced personal accomplishment dimension was  $38.10 \pm 7.65$ . This dimension is scored inversely, i.e. lower scores are indicative of a poorer level of fulfillment and personal involvement at work. Of the physicians evaluated, 20.2% were severely affected in this dimension.

**Table 3.** Results of the Maslach Burnout Inventory (MBI)

Dimensions	Results
Emotional exhaustion (mean ± SD)	<b>24.26 (± 11.19)</b>
Low	28 (29.8%)
Moderate	29 (30.8%)
<b>High</b>	<b>37 (39.4%)</b>
Depersonalization (mean ± SD)	<b>8.30 (± 7.69)</b>
Low	47 (50%)
Moderate	16 (17.0%)
<b>High</b>	<b>31 (33.0%)</b>
Reduced personal accomplishment (mean ± SD)	<b>38.10 (± 7.65)</b>
Low	45 (47.9%)
Moderate	30 (31.9%)
<b>High</b>	<b>19 (20.2%)</b>
Grunfeld <i>et al.</i> Presence of: A high degree of emotional exhaustion OR A high degree of depersonalization OR A high degree of reduced personal accomplishment	<b>60.6%</b>
Ramirez <i>et al.</i> Presence of: A high degree of emotional exhaustion AND A high degree of depersonalization AND A high degree of reduced personal accomplishment	<b>6.4%</b>

According to both the Ramirez and the Grunfeld criteria, no statistically significant correlations were found between burnout and any of the demographic or social/occupational variables.

Nevertheless, when the demographic and social/occupational data were correlated with the results of each individual dimension of the MBI, statistically significant associations were found between working ≥ 40 hours a week and a lower score in the reduced

personal accomplishment dimension ( $p = 0.0312$ ;  $RR = 0.55$ ;  $95\%CI: 0.32 - 0.96$ ). Likewise, being religious and having worked as a neurologist for a shorter period of time were variables significantly associated with the depersonalization dimension ( $p = 0.0357$ ;  $RR = 0.72$ ;  $95\%CI: 0.48 - 1.07$  and  $p = 0.0264$ ;  $RR = 1.47$ ;  $95\%CI: 2.14$ , respectively).

According to the findings of the SWLS, the participants had a mean score for satisfaction with life of  $26.3 \pm 5.8$ , which is above the theoretical median of the total score for the scale ( $M = 20$ ; range 5-35). The internal consistency (Cronbach's alpha) found for the study sample was 0.87.

With the objective of determining the percentage of satisfaction, the cut-off point was defined as the theoretical median value of the total score of the scale ( $M = 20$ ), scores below this value being considered indicative of dissatisfaction with life, while those above 20 were considered indicative of satisfaction with life. Overall, 81 participants (86.2%) were found to be satisfied with their lives compared to 13 participants (13.8%) who were dissatisfied. When correlation was sought between satisfaction with life and the demographic and social/occupational variables, a statistically significant association was found between greater satisfaction with life (SWLS > 25) and the variables *vacation* ( $p = 0.0061$ ;  $RR = 0.7$ ;  $95\%CI: 0.46-1.06$ ); *marital status* (married or in a stable union) ( $p = 0.0383$ ;  $RR = 0.65$ ;  $95\%CI: 0.4 - 1.07$ ); and *physical activity or hobby* ( $p = 0.0356$ ;  $RR = 0.65$ ;  $95\%CI: 0.4 - 0.07$ ). The other results are shown in table 4.

**Table 4.** Statistically significant correlations between the variables and each dimension of the Maslach Burnout Inventory individually or according to the sets of criteria defined by Grunfeld or Ramirez

Variables	Dimensions			Burnout		Satisfaction
	EE	DP	RPA	Grunfeld	Ramirez	SWLS score > 25
Being male	0.1264	0.3477	0.0653	0.2218	0.2949	0.1971
Age (< 40 years old)	0.0664	0.0910	0.3984	0.0683	0.3384	0.2437
Married or in a stable union	0.0600	0.3889	0.2136	0.4943	0.4477	<b>0.0383</b>
Having children	0.4625	0.4491	0.1831	0.1854	0.5295	0.4418
Residing in the state capital	0.3411	0.3293	0.1105	0.4746	0.2387	0.3145
Practices a religion	0.3935	<b>0.0357</b>	0.3613	0.3833	0.1230	0.4212
Time in neurology < 12 years	0.1080	<b>0.0264</b>	0.2876	0.0891	0.4658	0.1715
Working hours/week > 40h	<b>0.0312</b>	0.4135	<b>0.0027</b>	0.1424	0.0762	0.4365
Patients > 20/day	0.0809	0.3010	0.3723	0.2453	0.3585	0.3472
Consultation time (< 30 min)	0.0708	0.2700	0.0604	0.4171	0.1603	0.1019
Family support	0.2800	0.4796	0.2465	0.1840	0.5748	0.0631
Vacation	0.0901	0.1410	0.1002	0.3999	0.3178	<b>0.0061</b>
Hobby or physical activity	0.1195	0.4709	0.2876	0.5015	0.4216	<b>0.0356</b>

EE: emotional exhaustion; DP: depersonalization; RPA: reduced personal accomplishment.



Likewise, a correlation was found between the presence of burnout syndrome, defined according to either of the two sets of criteria, and satisfaction with life in which SWLS scores > 20 were considered indicative of satisfaction and SWLS < 20 indicative of dissatisfaction. A statistically significant association was found between the presence of burnout, defined by either of the two sets of criteria, and dissatisfaction with life (Grunfeld criteria:  $p = 0.0126$ ;  $RR = 1.69$ ;  $95\%CI: 1.31 - 2.19$  and the Ramirez criteria  $p = 0.0002$ ;  $RR = 26.33$ ;  $95\%CI: 8.67 - 79.92$ ), the latter being extremely significant (Table 4).

Pearson's correlation analysis test was applied to investigate the correlation between burnout and the dimensions of the SWLS, using the continuous variables obtained in each individual dimension of the MBI and the overall SWLS score. Results showed an extremely significant correlation with the emotional exhaustion dimension ( $p = 0.0001$ ;  $r = -0.417$ ), while correlation with the depersonalization dimension resulted in a p-value of 0.0013 ( $r = -0.329$ ). The correlation found between SWLS score and the feeling of reduced personal accomplishment dimension was extremely significant ( $p < 0.0001$ ;  $r = 0.491$ ) (Table 5).

**Table 5.** Correlation between Maslach Burnout Inventory and Satisfaction with Life Scale

		EE	DP	RPA	Grunfeld	Ramirez
Dissatisfaction with life (SWLS < 20)	(p)	< 0.0001	0.0013	< 0.0001	0.0126*	0.0002*
	(r)	-0.417	-0.329	0.491	-	-

\* Fisher's exact test (Aguilar *et al.*, 2000).

EE: emotional exhaustion; DP: depersonalization; RPA: reduced personal accomplishment.

## DISCUSSION

The response rate to the questionnaire was 38.8%, higher than that obtained in two similar studies conducted in Brazil with oncologists affiliated to the Brazilian Society of Clinical Oncology (SBOC) in which rates of 21.5% and 22.3%, respectively, were obtained<sup>16,17</sup>.

In the present study, electronic mail was used to send the majority of the questionnaires (89.4%), with only ten (10.6%) being filled out and returned manually.

The sample consisted of 94 participants, the majority of whom ( $n = 61$ ; 64.9%) were female. In agreement with the majority of studies involving

healthcare professionals, most of the participants were in the 31-50 years age-group. Clúa Espuny and Aguilar Martín reported that 68.5% of healthcare workers in their study were under 45 years of age<sup>18</sup>, whereas Sánchez-González *et al.* reported that 38.6% of the participants in their study were between 30 and 39 years of age<sup>19</sup>.

One alarming fact found in the present study was the excessive workload of the respondents, as reflected in the fact that 67% of the study sample reported working more than 40 hours a week. This finding is in agreement with the report entitled "The Profile of Physicians in Brazil" (*Perfil dos médicos no Brasil*) issued by the *Fundação Oswaldo Cruz* (Fiocruz), which considered the fact that physicians accumulate jobs, resulting in a working day of 12 or even 14 hours, with drastic repercussions on the quality of the service provided and on the physical and mental health of these professionals<sup>20</sup>. This situation is believed to facilitate the onset of burnout, as shown here in the association found between this syndrome and the dimensions of emotional exhaustion and reduced personal accomplishment. The number of hours worked per day has been shown to be the variable most closely related to burnout, a fact that has been widely reported in the pertinent literature.

No consensus has yet been reached in the literature regarding the definition of professional burnout based on MBI scores. Most authors describe the scores obtained in the three different dimensions, albeit without any defined criteria with which to classify them. Therefore, the definition of professional burnout is confused with the dimensions themselves. Although the MBI is specifically designed to diagnose this syndrome, lack of standardization for its evaluation hampers the interpretation of results. In the present study, the emotional exhaustion domain was found to be severely affected in 37 individuals (39.3%), making this the dimension most affected in this population. Emotional exhaustion describes basic tension in the burnout syndrome and refers to the sensations of excessive effort and emotional tedium that develop as a consequence of the continuous interactions workers are obliged to maintain with their clients and with each other<sup>10</sup>. This is in agreement with the theory that considers emotional exhaustion to be responsible for the onset of burnout and that it is triggered by individuals' personal characteristics and by workload<sup>21</sup>. After this

initial stage, defense mechanisms are triggered. When these are insufficient or inadequate, the individual develops attitudes of depersonalization, which were found to a high degree in 31 individuals in this population (32.9%). Depersonalization is associated with excessive distancing from people, silence, the adoption of depreciative attitudes and attempts to blame the client for his/her own frustrations<sup>22</sup>. Reduced personal accomplishment was found in 19 individuals (20.2%). It would, therefore, be reasonable to conclude that the study population was affected to a lesser extent by feelings of inadequacy and dissatisfaction with personal accomplishment; nevertheless the effect on this dimension could deteriorate if the impact on the other dimensions of the syndrome is not reduced. The onset of reduced personal accomplishment is considered to coincide with the onset of emotional exhaustion and is a direct cause of labor-related stress factors, principally with respect to lack of social support and opportunities for professional development<sup>23</sup>.

If the Grunfeld criteria are used to define the syndrome, i.e. if burnout is considered to be present when only one of the three dimensions is severely affected, then 60.6% of this study population of neurologists were affected, a rate that is considered high. Nevertheless, if the Ramirez criteria are considered, then a rate of 6.3% was found, which is also considered high for this set of criteria. It should be emphasized, however, that these values are similar to those reported in a study conducted with Brazilian oncologists<sup>17</sup>.

With respect to the demographic variables that according to the results of the MBI were associated with burnout, statistically significant correlations were found with a longer working week ( $\geq 40$  hours) and with higher scores in the reduced personal accomplishment dimension ( $p = 0.0027$ ) and in the emotional exhaustion dimension, which is to be expected given the fact that the excess workload found in the majority of respondents is a chronic labor-related stress factor that affects motivation. These data suggest that the greater the workload, the greater the distancing, the silence, depreciative attitudes, feelings of incompetence and reduced personal accomplishment in these professionals.

In the depersonalization dimension, two variables were found to be correlated with burnout: a lack of religiousness ( $p = 0.0357$ ), the presence of which

would confer certain values and religious principles such as altruism, charity and compassion to others, and less time working in neurology ( $p = 0.0264$ ), which gives strength to the hypothesis that behavior such as distancing and being cynical with patients is more prevalent in individuals with less experience in certain areas of the specialty.

Although not statistically significant, the association between living with a stable partner and higher scores in the emotional exhaustion dimension ( $p = 0.0664$ ) is worthy of mention, since this finding has not previously been reported in the literature. Nevertheless, it would appear logical that marital commitment would contribute in some way towards greater emotional exhaustion. To evaluate this hypothesis, further studies dealing with this specific relationship would be required.

The SWLS adds a new angle to the study by dealing with a more subjective dimension concerning the quality of life of physicians, more specifically neurologists. Previous studies conducted in the Brazilian population in general and in students in primary schools, high schools and universities show the importance of this construct in explaining a series of day-to-day feelings and behaviors<sup>24</sup>.

Despite the adverse work conditions faced by physicians over the past decade, the study shows a mean score ( $M = 26.3 \pm 5.8$ ) that is within the range classified as being indicative of satisfaction (26-30 points)<sup>15</sup>. When considering the theoretical median or the neutral point of the scale of 20 points, 81 participants (86.2%) were found to score above this mean; therefore indicating satisfaction with their lives, whereas the remainder were found to be unsatisfied ( $n = 13$ ; 13.8%). This percentage is below that found in the study conducted by the Brazilian Medical Council in 2004 among physicians from all the states of the country, which revealed that around one-third of doctors are dissatisfied with their lives<sup>24</sup>, a rate that could be considered less problematic, but not when taking into consideration the fact that this is a professional class that enjoys a high degree of recognition and status worldwide. Therefore, the Brazilian Medical Council has been promoting research into factors that could explain this variability in the satisfaction of physicians with their lives.

With respect to the correlations between the demographic and social/occupational variables and satisfaction with life, the present study showed

a correlation between being married or in a stable union and scores indicative of satisfaction with life (SWLS > 25) ( $p = 0.0383$ ), i.e. individuals in stable relationships were more likely to be satisfied with their lives. This information is in conflict with other findings of the present study in which a correlation, albeit not statistically significant ( $p > 0.05$ ), was established between being married or in a stable union and higher scores in the emotional exhaustion dimension, i.e. a higher incidence of emotional burnout.

Evaluation of the results obtained in the SWLS and the MBI showed a statistically significant correlation between burnout and low SWLS scores (< 20) both when the Grunfeld criteria ( $p = 0.0126$ ) and the Ramirez criteria ( $p = 0.0002$ ) were applied, establishing a correlation between these two constructs for the first time with respect to physicians.

This information confirms the hypothesis that professional well-being is closely related to the cognitive sensation of satisfaction with life. To confirm this hypothesis, the MBI was used to correlate each of the three dimensions of burnout individually in order to evaluate which were more closely related to satisfaction with life. All the dimensions were found to be associated with satisfaction with life ( $p < 0.05$ ). Nevertheless, statistical significance was higher in the case of the correlations between the reduced personal accomplishment and emotional exhaustion dimensions and SWLS score, resulting in correlation coefficients of  $r = -0.417$  and  $r = 0.491$ , respectively. Therefore, the higher the scores in the reduced personal accomplishment and emotional exhaustion dimensions, the greater the individual's degree of dissatisfaction with life.

## CONCLUSION

In conclusion, a statistically significant correlation was found between burnout and the cognitive sensation of dissatisfaction with life among neurologists in the state of Rio de Janeiro, Brazil.

The results obtained in the MBI when each dimension was evaluated separately were inversely proportional to the findings of the Satisfaction with Life Scale, revealing a correlation between all the dimensions of the burnout syndrome and satisfaction with life.

A high occurrence of burnout was found in neurologists in the state of Rio de Janeiro irrespective of which set of criteria was adopted, showing that these physicians rank among the professional categories most affected by burnout.

Emotional exhaustion was the dimension of the burnout syndrome that was most severely affected in these neurologists, followed by depersonalization and finally reduced personal accomplishment.

No correlations were found between the demographic and social/occupational characteristics of the physicians evaluated and burnout. Nevertheless, statistically significant correlations were found between a longer working week and the emotional exhaustion and reduced personal accomplishment dimensions. The absence of religious practice and less time working in neurology were factors found to be associated with a greater effect on the depersonalization dimension. On the other hand, being married or in a stable union, taking vacations and the frequent or regular practice of physical activity or a hobby were significantly associated with satisfaction with life.

## COMPETING INTEREST

None declared.

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