Common mental disorders among medical students

Transtornos mentais comuns entre estudantes de medicina

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RESUMO

Objetivo: Transtornos mentais comuns (TMC) possuem alto impacto nos relacionamentos interpessoais e na qualidade de vida, sendo potenciais substratos para o desenvolvimento de transtornos mais graves. Estudantes de medicina vêm sendo apresentados como população de risco para o desenvolvimento de TMC. O objetivo deste estudo é estimar a freqüência de TMC em acadêmicos de medicina da Universidade Federal da Bahia e identificar fatores relacionados. Métodos: Realizou-se estudo transversal entre uma amostra de estudantes de medicina. A identificação dos TMC foi feita por meio do 20-item Self-Report Questionnaire. Resultados: Foram avaliados 223 estudantes. A prevalência de TMC foi de 29,6%, sendo independentemente associada a alterações do padrão do sono, não possuir transporte próprio, não trabalhar e não realizar exercício físico. Conclusões: Estes dados demonstram uma elevada prevalência de TMC na amostra pesquisada e são importantes para subsidiar ações de prevenção de transtornos mentais entre futuros médicos e reflexões sobre o modelo curricular vigente nas escolas médicas.

Key-words
Mental disorders, medical students, mental health, learning.

ABSTRACT

Objective: Common mental disorders (CMD) have a high impact on interpersonal relationships and quality of life and are potential underlying causes for the development of more serious disorders. Medical students have been indicated as a risk population for the development of CMD. The aim of this study was to determine the frequency of CMD in undergraduate medical students and to identify related factors. Methods: A cross-sectional study was performed in a sample population of medical students. CMD was identified according to the 20-item Self-Report Questionnaire. Results: Two hundred and twenty-three students completed the questionnaire. The overall prevalence of CMD was 29.6% and its presence was independently associated with sleep disorders, not owning a car, not working and sedentary lifestyle. Conclusions: These findings indicate a high prevalence of CMD in the sample studied and are important for supporting actions to prevent mental disorders in future doctors and for reflecting on the curricula currently in use in medical schools.
INTRODUCTION

Common mental disorders (CMD) are usually characterized as disorders that, although initially requiring no psychiatric treatment, later prove to have great socioeconomic impact. Moreover, there are potential underlying causes for the development of more serious mental disorders. Common mental disorders are related to somatoform disorders and to anxiety and depression (Mari and Jorge, 1997). Characteristic symptoms include insomnia, fatigue, irritability, forgetfulness, difficulty in concentrating and somatic complaints, though psychotic, personality-related disorders and chemical dependence are not involved (Goldberg and Huxley, 1992).

In populations of industrialized nations its prevalence varies from 7% to 30% (Harding et al., 1980). In Brazil, a study performed in 1994 revealed that 22.7% of the adult urban population of Pelotas, Rio Grande do Sul, had CMD (Ludemir and Melo-Filho, 2002). Since these disorders are frequent in the community, they represent high social and economical costs, being responsible for a significant number of lost workdays, and an increased demand for health services (Harding et al., 1980).

It has been demonstrated that the admission of university students into the academic environment consists of a multiple process that involves not only external factors such as the influence of the social environment and of academic norms, but also internal factors that are related to the ability of the individual to deal with diverse situations, psychosomatic physical reactions and mood states (Polydoro et al., 2001). Medical School, itself, is a stressful environment. The course peculiarities that expose the student to many sources of tension from admission into the university include the competitiveness of the selection process, the excessive study load, personal striving and the professors’ demand for excellence, lack of leisure time and contact with death, in addition to other factors (Firth, 1986). Various studies worldwide have demonstrated high rates of psychiatric disorders in this type of population (Rosal et al., 1997; Dahlin et al., 2005; Facundes and Ludermir, 2005). In an African study, it was demonstrated that 64.5% of first-semester medical students presented some degree of stress or depression, with 11% demonstrating very high levels of stress (Vaz et al., 1998). Such situations of stress may lead to mental disorders and may have a negative impact on cognitive function and learning (Saipanish, 2003). As such, this is a population that is recognizably immersed in risk situations, reflecting a need for more detailed studies. The purpose of the present study was to determine the frequency of common mental disorders in students at the School of Medicine of the Federal University of Bahia, and to identify factors involved in the social, economic and academic life of these students that could be related to the presence of CMD.

METHOD

A cross-sectional study was carried out between June and July, 2005, at the end of the first school semester of that year. Students in the eighth semester of medical school delivered self-administered, anonymous questionnaires to male and female students enrolled in the 2nd, 4th, 6th and 8th semesters and in the final two years of Medical School (from the 9th to the 12th semesters) at the Federal University of Bahia (FAMEB/UFBa). Eight hundred and eighty-eight students were enrolled in the medical school and 556 were eligible for enrolment in the study. A sample of half the eligible individuals (278) was selected from students attending theoretical or practical classes during the period of the study. Two hundred and twenty-five students (response rate, 80.9%) agreed to participate in the study, completing and returning the questionnaire. The questionnaire requested information on: identification (age, gender, school semester, marital status, skin color); life habits (diet, physical exercise, use of tobacco, alcohol or other psychoactive drugs, sleep patterns); medical history (previous illnesses and medical treatments), use of medication; socioeconomic conditions (monthly income, hours of work per week, whether the participant owned his/her own home, number of people living in the house, whether the student had his/her own car); and any stressful life events in the 12 months prior to filling out the questionnaire (serious illness, death of near relatives, hospitalization, separation/divorce, obliged to move away from home, grave financial problems, physical violence, assault or robbery). Monthly income was expressed as the number of minimum wages, one minimum monthly wage being R$300 (approximately 140 dollars).

CMD was identified according to the results of the 20-item Self-Report Questionnaire (SRQ-20), initially developed at the beginning of the 1980’s to screen psychiatric disorders in primary health centers (Harding et al., 1980) and validated in Brazil in 1986 (Mari and Williams, 1986). This instrument is composed of 20 questions, with dichotomized responses (yes and no) (yes and no), to which are attributed a score equivalent to 1 (one) for each question with an affirmative response, resulting in a total final score that ranged from 0 to 20. The individuals who participated in the study were divided, by gender, into two groups (suspect and non-suspect), according to scores from the SRQ-20: the cut-off used among the male individuals was established as greater or equal to six points and, among the female individuals, as greater or equal to eight points. These cut-off points demonstrated sensitivity and specificity of 89% and 81%, respectively, for males and 86% and 77% for females (Mari and Williams, 1986).

The results were analyzed using the SPSS (Statistical Package for the Social Sciences), version 9.0 (SPSS Inc. Chicago, Illinois). Descriptive analysis of the variables was carried out, making the appropriate correlations. Student T-test and the
ANOVA test were used to analyze continuous variables according to groups and the Chi-square or Fisher exact test was used to analyze the proportions. In addition, Spearman's correlation was used to quantify the association between two continuous variables. Logistic regression was performed to identify variables associated with a positive score in the SRQ-20, using Backward Stepwise method. The following variables were tested in the multivariate model: gender, age, semester of study, skin color, marital status, whether student has his/her own home, family income, extracurricular activities, employment, main form of transportation, performance of physical exercise, reservation of weekly time for leisure, whether subject has any dietary restrictions, tobacco consumption, alcoholism, use of psychoactive substances, use of regular medication, whether undergoing or have undergone psychotherapy, sleep patterns and whether subject has been submitted to any stressful event in the last 12 months. The tobacco variable was excluded from the model as a result of the sample size. The type I error was considered to be 5% for all analysis. This study was approved by the Institutional Review Board of Federal University of Bahia. All of the participants in the study have signed a written informed consent regarding their participation.

**RESULTS**

Two-hundred and twenty-five medical students were evaluated. The questionnaires of two students were excluded because they failed to answer any of the questions in the evaluation instrument (SRQ-20); therefore, the responses of 223 students were analyzed. The demographic and socioeconomic characteristics of participants are shown in Table 1.

According to the previously established cut-off, the prevalence of common mental disorders in this population was 29.6% (n=66). The average score obtained was 4.87 ± 3.98 (median: 4.00; mode: 1; range: 0-16). No significant difference in the score or in the prevalence of CMD was observed as the students progressed through medical school (Table 2).

The majority of the individuals (76.0%, n=165) performed extracurricular academic activities, with almost half of them (41.2%, n=68) receiving remuneration for these activities. Only 28 (12.6%) students had a job unrelated to their academic activities. Eighty-six individuals (38.7%) practiced regular physical exercise, while 43 (19.4%) declared that they had no time for leisure activities during the week. Tobacco and alcohol use were reported by 4.0% (n=9) and 56.1% (n=125), respectively. Only eight (3.6%) students reported the use of other psychoactive substances. Regular use of medication was reported by 24.8% (n=55). Twenty-three (10.4%) students were undergoing or had undergone some type of psychotherapy. The relationship between the presence of these variables and a positive score for CMD is shown in Table 3.

### Table 1. Demographic and socio-economic characteristics of the studied population.

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>112</td>
<td>50.2</td>
</tr>
<tr>
<td>Female</td>
<td>108</td>
<td>48.4</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean (± SD)</td>
<td>22.0 (± 1.9)</td>
<td></td>
</tr>
<tr>
<td>Median</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>Range</td>
<td>18-30</td>
<td></td>
</tr>
<tr>
<td>Academic semester**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Second</td>
<td>45</td>
<td>20.2</td>
</tr>
<tr>
<td>Fourth</td>
<td>43</td>
<td>19.3</td>
</tr>
<tr>
<td>Sixth</td>
<td>44</td>
<td>19.7</td>
</tr>
<tr>
<td>Eighth</td>
<td>42</td>
<td>18.8</td>
</tr>
<tr>
<td>Ninth to twelfth</td>
<td>47</td>
<td>21.1</td>
</tr>
<tr>
<td>Skin color*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>100</td>
<td>44.8</td>
</tr>
<tr>
<td>Mulatto</td>
<td>112</td>
<td>50.2</td>
</tr>
<tr>
<td>Black</td>
<td>8</td>
<td>3.6</td>
</tr>
<tr>
<td>Marital status***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>211</td>
<td>94.6</td>
</tr>
<tr>
<td>Married</td>
<td>2</td>
<td>0.9</td>
</tr>
<tr>
<td>Widower/separated</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>With whom student lives#</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alone</td>
<td>18</td>
<td>8.1</td>
</tr>
<tr>
<td>Family</td>
<td>173</td>
<td>77.6</td>
</tr>
<tr>
<td>Friends</td>
<td>21</td>
<td>9.4</td>
</tr>
<tr>
<td>Relatives/boy(girl)friend</td>
<td>10</td>
<td>4.5</td>
</tr>
<tr>
<td>Type of residence*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Own home</td>
<td>153</td>
<td>68.6</td>
</tr>
<tr>
<td>Rented home</td>
<td>57</td>
<td>25.6</td>
</tr>
<tr>
<td>Lodging provided by others</td>
<td>5</td>
<td>2.2</td>
</tr>
<tr>
<td>University dormitory/boardinghouse</td>
<td>5</td>
<td>2.2</td>
</tr>
<tr>
<td>Type of transportation most used##</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Own car</td>
<td>122</td>
<td>54.7</td>
</tr>
<tr>
<td>Get a ride</td>
<td>18</td>
<td>8.1</td>
</tr>
<tr>
<td>Bus</td>
<td>75</td>
<td>33.6</td>
</tr>
<tr>
<td>Others (motorcycle, walks)</td>
<td>3</td>
<td>1.4</td>
</tr>
<tr>
<td>Monthly family income (in minimum wages)###</td>
<td></td>
<td></td>
</tr>
<tr>
<td>From 0 to 10 min. wages</td>
<td>46</td>
<td>20.6</td>
</tr>
<tr>
<td>From 10 to 20 min. wages</td>
<td>74</td>
<td>33.2</td>
</tr>
<tr>
<td>More than 20 min. wages</td>
<td>92</td>
<td>41.3</td>
</tr>
</tbody>
</table>

Missing values: * 3; ** 2; *** 10; # 1; ## 5; ### 11.

### Table 2. Total Score and Prevalence of Common Mental Disorders obtained on SRQ-20 according to Semester Studied.

<table>
<thead>
<tr>
<th>Semester of medical course</th>
<th>Total score (average ± SD)</th>
<th>Prevalence (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Second</td>
<td>5.71 ± 4.29</td>
<td>40.0</td>
</tr>
<tr>
<td>Fourth</td>
<td>5.09 ± 4.09</td>
<td>38.2</td>
</tr>
<tr>
<td>Sixth</td>
<td>3.93 ± 3.13</td>
<td>20.5</td>
</tr>
<tr>
<td>Eighth</td>
<td>5.12 ± 4.48</td>
<td>33.3</td>
</tr>
<tr>
<td>Ninth to twelfth</td>
<td>4.55 ± 3.83</td>
<td>25.5</td>
</tr>
</tbody>
</table>

SD: standard deviation
ANOVA: p-value=0.405
Pearson Chi-Square: p-value=0.316

More than half of the students (53.8%, n=120) reported a normal sleep pattern. However, the following disorders were observed in the sleep patterns of the remaining individuals: daytime sleepiness, 27.8% (n=62); difficulty in falling asleep,
16.6% (n=37); premature awakening, 8.1% (n=18); and difficul-
ty in staying asleep, 5.8% (n=13). The presence of some
sleep pattern disorder was associated with a greater preva-
ience of CMD when compared to the group with a normal
sleep pattern (47.6% x 14.2%, respectively; p<0.001).

A total of 119 students (53.4%) reported having expe-
rrienced stressful life events in the previous 12 months. Although
the presence of these events was not associated with a grea-
ter prevalence of CMD, the increase in the number of events
was correlated with a higher score (r=0,188; p=0.041).

In the multivariate analysis, it was demonstrated asso-
ciation between a positive score on the SRQ and alteration
in the sleep pattern, sedentary life style, not working and
not having a car (Table 4). The condition of undergoing or
having undergone psychotherapy, although this was inclu-
ded among the variables selected in the multivariate analy-
sis, showed no significant association with the presence of
common mental disorders (OR: 2.082; 95%CI: 0.749 – 5.784).

Table 4. Factors Independently Associated with Common
Mental Disorders

<table>
<thead>
<tr>
<th>Variable</th>
<th>Beta</th>
<th>SE*</th>
<th>Odds-ratio (95%)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>-4.113</td>
<td>0.782</td>
<td>0.016</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Sleep pattern disorder</td>
<td>1.901</td>
<td>0.369</td>
<td>6.690 (3.244 – 13.797)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Sedentary life style</td>
<td>0.769</td>
<td>0.377</td>
<td>2.159 (1.030 – 4.522)</td>
<td>0.041</td>
</tr>
<tr>
<td>Do not work</td>
<td>1.266</td>
<td>0.641</td>
<td>3.546 (1.009 – 12.455)</td>
<td>0.048</td>
</tr>
<tr>
<td>Do not own a car</td>
<td>1.361</td>
<td>0.366</td>
<td>3.898 (1.904 – 7.982)</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

*SE: Standard error

**DISCUSSION**

The prevalence of CMD in the sample studied was 29.6%.
This value could be considered high, considering the values
in studies conducted in industrialized nations, that vary
from 7% to 30% (Goldberg and Huxley, 1992), because the
rate found in the present study is one of the highest cited.
Other studies carried out in Brazil have reported a lower preva-
ience of CMD in the following professional categories: 
teachers in the private school network (18.7%) (Araújo et
al., 2003), subway workers (25.8%) (Jardim et al., 1996) and
hospital workers (20.9%) (Pitta, 1990), as well as among ado-
lescents (8%) (Feijó et al., 1997). As a risk population for the
development of mental disorders (Rosal et al.,1997; Dahlin
et al., 2005), the values found among Brazilian medical stu-
dents are extremely variable. Similar rates to the general
population were described among others Brazilian students
in two cities in South Brazil (19.0% and 22.19%) (Benvegnu
et al., 1996; Hidalgo et al., 2001). However, more elevated
values were also recorded in Brazilian universities (31.7% to
44.7%) (Facundes and Ludermir, 2005; Benvegnu et al., 1996;
Lima et al., 2006) and in a prior study that involved ninety
medical students of this same School of Medicine, but
using a different diagnostic instrument (37.8%) (Azi, 2002).
High rates of CMD (33.3% and 31.8%) have also been found
in Brazilian dental and nursing students, respectively (Fa-
cundes and Ludermir, 2005), as well as in college professors
in another city in the same state (29%) (Araújo et al., 2003).

Similar rate was found among brazilian doctors (26.0%)
(Nascimento-Sobrinho et al., 2006), which could suggest
that the same factors influencing the development of men-
tal disorders among medical students may be present in
the professional life of the subject, such as the contact with
death and suffering (Firth, 1986). Among the problems po-
tentially associated with working in the medical field, Nas-
cimento-Sobrinho et al. (2006) emphasize the excess worklo-
ad, especially the regime of nights, weekends and holidays
on-duty to insure emergency medical services, which could
be equivalent to the long hours of study encouraged by the
competitive environment in medical schools (Yiu, 2005). Al-
though medical students tend to have high personal stan-
dards, which gives them an advantage in what is a highly
competitive profession, this is associated to perfectionism
that leads to search for high academic performance. Such
factors could act as stress agents within this process. In a
study carried out in Sweden, 77.9% of first-year medical stu-
dents affirmed that their studies controlled their lives, with
little time left over for other activities (Dahlin et al., 2005).
Furthermore, 70.8% of this population mentioned a perci-
vied lack of encouragement from professors in this respect
(Dahlin et al., 2005). Nogueira-Martins et al. (2004) points
out that some of the student’s problems could be overco-
me with the help of a more experienced mentor, who could
offer students support by creating a work and learning en-
vironment that would encourage communication between
professors and students.

A systematic review of 40 articles on North American
medical students psychological distress suggested a high
prevalence of depression and anxiety in this population,
with higher levels of overall psychological distress compared to the general population (Dyrbye et al., 2006). In that review, the authors found that, although distress among medical students has been recognized for decades, limited data are available on causes of this problem, its consequences and solutions (Dyrbye et al., 2006).

The moment during medical school when the risk of developing mental disorders is greater remains controversial. This is due to the different characteristics of each medical school and its students and professors. Among students of the University of Massachusetts, for example, there was an increase in the levels of stress and depression among second and fourth-year students, while in the United Kingdom and Thailand greater levels of mental disorders were recorded among first and third year students, respectively (Rosal et al., 1997; Saipanish, 2003; Guthrie et al., 1998). No difference was found between the semesters in relation to the presence of common mental disorders. Similar results have also been mentioned by other studies, including those involving Brazilian students (Facundes and Ludermir, 2005; Benvegnu et al., 1996; Lima et al., 2006). This could indicate that both in the phase of admission to medical school and in the process of adaptation to academic environment, the characteristics of the teaching-learning process differ, and a specific set of factors with a negative influence on the mental health of the students may occur at each level of this process (Facundes and Ludermir, 2005). However, these conclusions include important limitations inherent to the design of the study. It is possible that a longitudinal inventory of psychiatric morbidity is more capable of estimating the occurrence of diagnoses made throughout the life of students and the influence of the medical curriculum on them, contributing toward the identification of potential risk factors for the development of mental disorders in this population. In addition, another limitation is that only medical students who were in academic activities have answered the questionnaire and the results could be a little different, because common mental disease may be responsible for work days loss (Harding et al., 1980). However, the majority of missing samples referred to students in the final two years of medical school and this population has particular characteristics, such as a greater number of practical activities, a closer relationship with preceptors, and a less intense study workload for theoretical exams. Nevertheless, no significant differences were found between this subgroup and the others.

Some other factors have been related to the increased prevalence of CMD: demographic characteristics (gender, age and marital status); life and work conditions (poor upbringing, precarious living conditions, low income, unemployment and informal employment) and vital stress-generating life events (Ludermir and Melo-Filho, 2002; Lima et al., 1996). In the present study, no difference was found in the prevalence of mental disorders in relation to gender, skin color or marital status, although CMD was more frequent among women and non-white individuals. In relation to marital status, the majority (94.6%) of the individuals in the sample was single; therefore, a possible correlation between marital status and mental disorder was limited due to sample size. In terms of life and work conditions, not exercising, not working and not having their own car were factors independently associated with the presence of mental disorders. Lima et al. carried out a survey in a medical school in the southeast of Brazil and showed that CMD was associated with difficulty in making friends, poor self-evaluation of academic performance, thoughts of dropping out of medical school and a perceived lack of emotional support (Lima et al., 2006). This higher prevalence of CMD and its risk factors may be explained because most students (98%) did not live with their families.

In a population from Northeast of Brazil (Zona da Mata), Costa and Ludermir (2005) demonstrated a prevalence of CMD of 36.0%, which was positively associated with poorer education level, not working and lower monthly income. Although such findings are similar to those of our study, the interpretation may be totally different due to the characteristics of each population. In the population evaluated in the study carried out by Costa and Ludermir (2005), the fact of not working may reflect the lack of socioeconomic support experienced by this community while, among medical students, it may be related to not performing other activities unconnected with the medical field that could keep the student away from the competitive and stressful environment of the medical school. The same logic may be used to explain the better mental health of individuals who perform regular physical activities, beyond the beneficial effect of exercise in improving the overall mental health of the individuals (Fox, 1999). However, in the area of social issues, since most of those interviewed have a reasonable monthly income (more than 10 minimum wages), the fact that the student does not own a car may distinguish those with fewer financial resources. Although previous studies have shown no association between medical students socioeconomic condition and development of CMD (Lima et al., 2006), these individuals may face certain difficulties during their academic life, since part of the curriculum is sometimes given in locations other than the medical school itself, and this may cause transportation problems for students without a car.

Recently, Dyrbye et al. (2006a) showed that the number of negative personal life events in the last 12 months correlated with the risk of burnout among medical students, a measure of professional distress. In the present study, the number of stress factors in the previous 12 months was significantly correlated to a higher score in the (SRQ-20) instrument, although there was no change in the prevalence of CMD in the...
group that had a stress factor. It would appear that 12 months may be too short an evaluation time for determining adverse mental conditions or that this period was able to indicate only events that contribute towards but do not determine the presence of mental disorders. Unlike these events, the presence of special situations during childhood and adolescence, such as illnesses that affect social interaction, difficulty in making friends or relating to authority and family figures, failing grades or even lack of interest in affective relationships, seems to be a factor that influences the mental health of university students (Facundes and Ludermir, 2005).

Reports in the literature describe the occurrence of abnormal sleep patterns among some risk populations, including medical students (Hidalgo et al., 2001; Rodrigues et al., 2002). It was observed that almost half the individuals studied (46.2%) reported some degree of abnormal sleep patterns. Lower percentages have been reported for students in other regions of Brazilian, Rio Grande do Sul (28.15%) (Hidalgo et al., 2001) and Federal District (39.5%) (Rodrigues et al., 2002). The importance given to abnormal sleep patterns as a public health problem has been growing in recent years. It has been shown, for example, that 12% of the American population is affected by excessive daytime sleepiness (Roth and Roehrs, 1996). This has a significant social impact in terms of direct and indirect costs, since it increases expenses related to diagnostic exams, treatment and medical fees, as well as diminishing productivity on the job and hampering academic performance (Rodrigues et al., 2002; Ford and Kamerow, 1989).

Although the hypothesis that increased duration of sleep directly improves quality of life is controversial (Briones et al., 1996), in the current study the presence of sleep pattern disorders was independently associated with the presence of CMD, as previously mentioned by other studies (Ford and Kamerow, 1989). It has been suggested that insomnia may be an early warning of psychiatric disorders such as depression, anxiety and alcohol abuse (Ford and Kamerow, 1989). This relationship has also been shown previously among students at another Brazilian university, using the same evaluation instrument. The prevalence of common mental disorders was lower than that found in our sample (22.19%) (Hidalgo et al., 2001). The frequency of difficulty in falling asleep (17.22%) and of staying asleep (9.6%) was similar in both studies, although premature awakening was more frequent among students in the above-mentioned study (15.23%) (Hidalgo et al., 2001). A high prevalence of difficulty in falling asleep has been observed in many cultures and may be related to the habit of going to bed later, which may be a symptom of anxiety or depression, or even a premature symptom of any mental disorder (Hidalgo et al., 2001). Difficulty in staying asleep does not necessarily result in shorter sleep time, but in fragmented sleep, with this fragmentation often resulting in mood swings and a drop in performance (Bonett, 1985). The frequency of daytime sleepiness in our study was also lower than that registered by Rodrigues et al. (2002) (39.5%). In that study, the authors showed that students with daytime sleepiness had poorer academic performance compared to others (Rodrigues et al., 2002). Although there is a strong relationship between the presence of sleep pattern disorders and the presence of psychiatric morbidities, as previously reported, the methodological design of the majority of the studies performed, including the present study, has some limitations to verifying the direction of the causality.

CONCLUSION

The results presented in this study offer an important panorama of the mental conditions of these medical students, revealing the high prevalence of common mental disorders and identifying factors associated with these disorders. Moreover, these findings may serve as a stimulus for future studies designed to identify causal effects among the associated factors, and may serve in the reformulation not only of the curricula currently in use in our universities, but also the teaching/learning process, to ensure that medical school does not exert any negative effect on the mental health of future health professionals.

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