






## Sleep quality and burnout in higher education teachers

### Qualidade do sono e *burnout* em docentes do ensino superior

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-  Italo Everton Bezerra Barbosa<sup>1</sup>
-  Isabela Saura Sartoreto Mallagoli<sup>1</sup>
-  Meiry Fernanda Pinto Okuno<sup>1</sup>
-  Cassiane Dezoti da Fonseca<sup>1</sup>
-  Angélica Gonçalves Silva Belasco<sup>1</sup>

<sup>1</sup>Universidade Federal de São Paulo.  
São Paulo, SP, Brazil.

#### Corresponding author:

Italo Everton Bezerra Barbosa  
Rua Guarajá, 397 – Ap 01, Vila Mazzei  
Tucuruvi, CEP: 02310-010. São Paulo, SP, Brazil.  
E-mail: [italoeverton1998@gmail.com](mailto:italoeverton1998@gmail.com)

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#### ABSTRACT

**Objective:** to evaluate the association of sleep quality and the presence of burnout syndrome with the epidemiological profile of higher education teachers. **Methods:** an observational, analytical, cross-sectional study of 140 teachers, using the Pittsburgh Sleep Quality Index and the Maslach Burnout Inventory. **Results:** in the sample, the majority was female (54.3%), aged between 26 and 40 years (58.6%). There was a predominance of teachers with a specialist title (48.6%), with a salary range of up to R\$ 5,000.00 (85.7%), with two or more employment relationships (52.1%). It was found that teachers who received more than R\$ 5,000.00 ( $p=0.003$ ), with two or more jobs, classified the usual sleep efficiency as poor/feeble ( $p=0.027$ ). However, those with good subjective sleep quality had lower scores in the Emotional exhaustion ( $p=0.005$ ) and Depersonalization domains in relation to the syndrome ( $p=0.023$ ). **Conclusion:** several factors contribute to the development of sleep-related disorders in teachers, making them more susceptible to the manifestation of burnout. **Contributions to practice:** the results can support preventive measures for the health of teachers and maintain the quality of their work activities, aiming to reduce the mediation effect of the variables that favor psychological exhaustion.

**Descriptors:** Faculty; Sleep Quality; Occupational Health; Burnout, Psychological; Universities.

#### RESUMO

**Objetivo:** avaliar a associação da qualidade do sono e presença da síndrome de *burnout* com o perfil epidemiológico de docentes do ensino superior. **Métodos:** estudo observacional, analítico, do tipo transversal, realizado com 140 docentes, por meio do Índice de Qualidade do Sono de Pittsburgh e *Maslach Burnout Inventory*. **Resultados:** na amostra, a maioria era do sexo feminino (54,3%), com idades entre 26 e 40 anos (58,6%). Houve predomínio de docentes com título de especialista (48,6%), com faixa salarial de até R\$ 5.000,00 (85,7%), com dois ou mais vínculos empregatícios (52,1%). Constatou-se que docentes que recebiam mais de R\$ 5.000,00 ( $p=0,003$ ), com dois ou mais empregos, classificaram a eficiência habitual do sono como ruim/muito ruim ( $p=0,027$ ). Todavia, aqueles com qualidade subjetiva do sono boa apresentaram menores escores nos domínios Exaustão emocional ( $p=0,005$ ) e Despersonalização em relação à referida síndrome ( $p=0,023$ ). **Conclusão:** diversos fatores colaboram para o desenvolvimento de distúrbios relacionados ao sono na classe docente, tornando-a mais suscetível à manifestação do *burnout*. **Contribuições para a prática:** os resultados podem subsidiar medidas preventivas para a saúde dos docentes e manutenção da qualidade de suas atividades laborais, visando diminuir o efeito-medição das variáveis que favorecem o esgotamento psicológico.

**Descritores:** Docentes; Qualidade do Sono; Saúde Ocupacional; Esgotamento Psicológico; Universidades.

## Introduction

Sleep is a cyclical physiological phenomenon essential for human survival<sup>(1)</sup>. Changes in quality, quantity and conformity are extremely harmful to health, causing in the body several responses capable of altering the physical, cognitive, occupational, and social functioning of the individual, collaborating to the increase in the level of stress, tiredness and other problems that compromise the quality of life<sup>(2)</sup>. In addition to these consequences, sleep-related disorders occur with great frequency nowadays, compromising the repair of cerebral energy metabolism<sup>(3)</sup>.

Sociodemographic and work-related variables aggravate stressful responses, compromising sleep because of negative experiences in the work sector<sup>(4)</sup>. The balance between sleep and daily work activities becomes essential for the full functioning of mental health, since the absence of sleep impairs patterns of recognition and decision-making, which can result in damage to physical and mental health<sup>(5)</sup>.

The teaching profession is considered by the International Labor Organization to be one of the most stressful, with a strong incidence of elements that favor changes in sleep patterns. This process exposes a multi-professional and complex phenomenon that interacts with individual aspects and the work environment, not only in the classroom or institutional context but also in all the factors involved, including political, educational, and socio-historical<sup>(6)</sup>.

Increasingly, several factors are present that favor the emergence of psychosocial stressors in teachers, such as the scarcity of material resources, low salaries, overcrowded classrooms, excessive workload, inexpressive participation in institutional policies and planning, tension in the relationship with students, administrative activities, among others<sup>(7)</sup>. These conditions trigger changes in sleep and favor the appearance of psychological syndromes, such as burnout syndrome<sup>(8)</sup>.

Burnout syndrome is caused by chronic interpersonal stressors resulting from work, occurring

with greater incidence in workers who have direct contact with other people. The word burnout was first described in 1974, in the United States, by the psychoanalyst Freudenberg, when he observed the decrease in the pleasure that his work provided, considering the work activity as an agent causing continuous stress<sup>(9)</sup>. This syndrome is a symptomatologic picture characterized by three interdependent dimensions. Emotional exhaustion corresponds to the physical and mental exhaustion developed by the overload, conceived by the work sector; depersonalization refers to emotional instability with students and co-workers, relating in a cold and impersonal way; and finally personal achievement, which, when low, implies negative self-assessment and feelings of incompetence within the work sector<sup>(10)</sup>.

In a study with 423 higher education teachers, it was identified that the prevalence of poor sleep quality was 61.3%. The following variables were statistically associated with poor sleep quality: employment relationships and irregular and/or insufficient time for leisure activities<sup>(11)</sup>.

Criteria indicative of burnout syndrome were observed in 41.6% of 356 higher education teachers from public and private institutions. In 0.3% of the participants, clinical signs were observed in the severe stage. Having a master's degree and having been teaching for more than ten years were the variables that were associated with 45.6% and 44.1%, respectively<sup>(12)</sup>.

Poor sleep quality and its negative effects are highly detrimental to teachers' health and can favor several complications capable of significantly interfering with the educational system. This process occurs due to the commitment to good work performance, added to the overload and work stress of teachers, contributing to its chronicity. The search for associations and answers related to this syndrome can help the teaching class in the search for improving the quality of life of these professionals.

This study aimed to evaluate the association of sleep quality and the presence of burnout syndrome

with the epidemiological profile of higher education teachers.

## Methods

This is an observational, analytical, cross-sectional study, built according to the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) tool. It was carried out with higher education teachers from a private institution in the Brazilian Western Amazon.

The inclusion criteria were being over 18 years old, having been a teacher at the institution for at least one year, and working directly in the classroom with students. The exclusion criteria were being absent due to leave or vacation during the data collection period, and acting only in managerial and/or administrative activities.

The study sample was random, non-probabilistic, defined according to the number of permanent and contracted teachers in all shifts of the institution. According to the institution where the research was carried out, there were 210 teachers, of which 173 met the inclusion criteria, this being the universe of the study. To identify possible participants, the sample was calculated using the formula for finite population, through the Open Epi platform, in which a maximum error of the sample estimate of 5% and a confidence level of 95% were adopted. The sample initially consisted of 120 teachers. Considering possible losses and refusals, the sample was increased by 20%, resulting in 144. However, after refusals, the final sample of the study consisted of 140 teachers. The interviews lasted between 15 and 20 minutes and were conducted during the break or after classes.

The variables included in the sociodemographic questionnaire were gender, age, education level, nationality, marital status, skin color and number of children. Labor information was also entered, such as time working at the institution, number of students per classroom, number of students for orientation, workload, salary range and number of employment relationships.

The sleep quality of the teachers was verified using the Pittsburgh Sleep Quality Index Questionnaire (PSQI-BR). It is a self-administered questionnaire to assess sleep pattern characteristics and quantify sleep of individuals. It consists of ten questions, with scores ranging from 0 to 21 points; scores greater than 5 reveal poor sleep quality; and scores greater than or equal to 10 reveal sleep disorder<sup>(13)</sup>.

To assess the occurrence of burnout syndrome, the Maslach Burnout Inventory (MBI) was used, translated, and adapted to the Brazilian version. It consists of 22 items distributed in three domains: Emotional exhaustion (nine items), Depersonalization (five items) and Personal accomplishment (eight items). The MBI uses a Likert-type scale, ranging from 0 to 6, and the last subscale is used in reverse to verify Personal Achievement. In the Emotional exhaustion and Depersonalization domains, the higher the score, the greater the severity; in the Personal accomplishment domain, it is the reverse: the lower the score, the greater the severity<sup>(14)</sup>.

Data collection took place from August to November 2022. At first, contact was made with the coordinators of each course to obtain the list of teachers and working hours. The invitation to participate in the research was made through an individual explanation about the importance and purpose of the study. If they accepted to participate, they signed the Informed Consent Form, followed by the application of the research instruments.

All participants received an identification number to ensure anonymity and confidentiality of information. The data was stored in a secure location - to which only the researchers had access - and, after collection, they were grouped, tabulated, and organized in an electronic database by typing in a Microsoft Excel® spreadsheet; and, for the analysis, the SPSS program, version 23® for Windows, was used.

For the descriptive analysis of categorical variables, absolute and percentage frequencies were calculated. To compare components and classify the sleep scale according to salary range and number of

jobs, the Chi-square test was used. To verify the normality of the domains of the burnout scale, the Kolmogorov-Smirnov test was used. The domains did not show normality ( $p < 0.05$ ), so non-parametric tests were used to compare the domains with variables of interest. The Mann-Whitney (two categories) and Kruskal-Wallis (three or more categories) tests were used to compare the domains of the burnout scale with categorical variables of interest, with the components and classification of the sleep scale. A significance level of 5% ( $p < 0.05$ ) was adopted<sup>(15)</sup>.

Considering the ethical aspects of scientific research, this study was submitted to the Research Ethics Committee of the *Paulista* School of Nursing of the Federal University of São Paulo, approved by Opinion No. 5,756,471/2022, Certificate of Presentation of Ethical Appreciation No. 55476422.5.0000.5505, in accordance with Resolution 466/2012 of the National Health Council.

## Results

Of the 144 initially selected, 23 were absent during the collection, and 6 refused to participate. However, to achieve a sample number close to the expected, 25 new collections were carried out with teachers who met the inclusion criteria and had not yet been included in the study, resulting in a final sample of 140 members.

Most participants were female (54.3%), aged between 26 and 40 years (58.6%), married (47.1%), with one child (38.6%), of Brazilian nationality (99.9%) and self-declared white (57.9%). There was a predominance of teachers with the title of specialist (48.6%), with up to 5 years of institution (77.9%), having more than 40 students per class (75.7%) and up to 6 students for guidance of course completion works (87.9%). They were hourly workers (90.7%), with a salary range of up to R\$ 5,000.00 (85.7%), with two or more employment relationships (52.1%).

The analysis of the overall PSQI score showed a predominance of “poor” sleep classification (66.4%); 24 teachers (17.1%) achieved scores that classified

them as having a sleep disorder. Table 1 presents the descriptive analysis of the PSQI components.

**Table 1** – Descriptive analysis of the components of the Pittsburgh Sleep Quality Index Questionnaire for higher education teachers (n=140). Manaus, AM, Brazil, 2022

PSQI-BR Components	n (%)
Subjective sleep quality	
Excellent	22 (15.7)
Good	70 (50.0)
Poor	44 (31.4)
Feeble	4 (2.9)
Sleep latency (minutes)	
≤ 15	16 (11.4)
16 a 30	39 (27.9)
31 a 60	61 (43.6)
> 60	24 (17.1)
Sleep duration (hours)	
> 7	28 (20.0)
6 to 7	66 (47.1)
5 to 6	31 (22.1)
< 5	15 (10.7)
Usual sleep efficiency (%)	
> 85	106 (75.7)
75 to 84	24 (17.1)
65 to 74	8 (5.7)
< 65	2 (1.4)
Sleep disorder (times/week)	
Not once	0 (0)
< 1	1 (0.7)
1 to 2	98 (70.0)
≥ 3	41 (29.3)
Use of sleep medication (times/week)	
Not once	82 (58.6)
< 1	25 (17.9)
1 to 2	30 (21.4)
≥ 3	3 (2.1)
Dysfunction during the day	
None	13 (9.3)
Little	89 (63.6)
Moderate	35 (25.0)
Very much	3 (2.1)

\*PSQI-BR: Pittsburgh Sleep Quality Index Questionnaire

In the analysis of the comparison between the components of the PSQI according to the variables of choice, it was observed, through the Chi-square test, that teachers with a doctorate (42.9%) classified the subjective sleep quality as poor ( $\chi^2 = 8.67$ ;  $gl = 2$ ;  $p = 0.012$ ). However, when dysfunction during the day was compared with education level, it was found that doctors (76.2%) had a lot of dysfunctions during the day ( $\chi^2 = 6.85$ ;  $gl = 2$ ;  $p = 0.026$ ).

Regarding the comparison between the “subjective sleep quality” component of the PSQI and sal-

ary range, most teachers who received more than R\$ 5,000.00 (60%) reported poor/ very poor subjective sleep quality. On the other hand, teachers who received up to R\$ 5,000.00 (56%) had good sleep quality ( $\chi^2 = 11.5$ ;  $gl = 2$ ;  $p=0.003$ ).

Teachers with two or more jobs (68.5%) rated their habitual sleep efficiency as poor/feeble ( $\chi^2 = 7.16$ ;  $gl = 2$ ;  $p=0.028$ ), while those with only one job (83.6%) had good habitual sleep efficiency and lower possibility of developing sleep disorders ( $\chi^2 = 4.36$ ;  $gl = 1$ ;  $p=0.037$ ).

Using the Kruskal-Wallis test, it was observed that teachers with good subjective sleep quality had lower scores in the domains Emotional exhaustion ( $\chi^2 = 10.3$ ; 95% Confidence Interval [CI]: 26.1-34.5;  $gl = 2$ ;  $p=0.005$ ), with a mean of 31.1 (standard deviation of 5.78); and Depersonalization of the MBI ( $\chi^2 = 7.52$ ; CI: 16.1-18.1;  $gl = 2$ ;  $p=0.023$ ), with a mean of 16.6 (standard deviation of 2.56).

Regarding the association between the emotional exhaustion domain of the MBI and the “education” variable, it was evidenced that teachers with a master’s degree had a higher score in the emotional exhaustion domain ( $\chi^2 = 10.4$ ; 95% CI 28.7-36.7;  $gl = 2$ ;  $p = 0.018$ ), with a mean of 33.6 (standard deviation of 5.84), while specialists had a higher score in the Personal fulfillment domain ( $\chi^2 = 6.21$ ; CI: 29.9-33.9;  $gl = 2$ ;  $p=0.027$ ), with a mean of 17.6 (standard deviation of 2.23).

Applying the Mann-Whitney test, we found that teachers who received more than R\$5,000.00 had a higher score in the Depersonalization domain ( $n = 140$ ;  $Z = -1.97$ ; CI: 16.4-20;  $p = 0.031$ ), with a mean of 17.6 (standard deviation of 2.23), and those who received up to R\$5. 000.00 had a higher score in the Personal fulfillment domain ( $n = 140$ ;  $Z = -2.18$ ; CI: 30.5-32.7;  $p=0.023$ ), with a mean of 18.3 (standard deviation of 4.21).

Teachers with one employment relationship achieved a lower score in the Personal fulfillment domain ( $n = 140$ ;  $Z = -1.92$ ; CI: 28.7-36.7;  $p = 0.017$ ), with a mean of 21.4 (standard deviation of 4.92), while those who worked in two or more institutions recorded a

higher score of Depersonalization ( $n = 140$ ;  $Z = -1.94$ ; CI: 16.4-20;  $p = 0.028$ ) with a mean of 17.6 (standard deviation of 2.8). Table 2 shows the association between the MBI Personal Achievement domain and the PSQI-BR “sleep latency” component.

**Table 2** – Association between the Maslach Burnout Inventory Personal Accomplishment domain and the “sleep latency” component of the Pittsburgh Sleep Quality Index Questionnaire of higher education teachers ( $n=140$ ). Manaus, AM, Brazil, 2022

Domain	Sleep latency				p-value*
	Very good (n=16)	Good (n=39)	Poor (n=61)	Very poor (n=24)	
Personal fulfillment					
Mean (standard deviation)	17.1 (5.2)	22.1 (4.7)	21.7 (4.4)	23.5 (3.8)	0.001
Median	18	22	22	23	
Minimum-maximum	7-25	6-29	8-31	14-32	
Mean rank	35.2	74.6	71.2	85.6	

\*Kruskal-Wallis test ( $p<0.05$ ); Mann-Whitney test corrected for Bonferroni multiple comparisons: Very good vs Good ( $p=0.0086$ ) / Very good vs Poor ( $p=0.0067$ ) / Very good vs Very poor ( $p=0.0011$ ) / Good vs Poor ( $p=1.000$ ) / Good vs Very poor ( $p=1.000$ ) / Poor vs Very poor ( $p=1.000$ )

Table 3 shows the association of the MBI Emotional Exhaustion and Depersonalization domains with the PSQI-BR “sleep disorder” component.

**Table 3** – Association of the Maslach Burnout Inventory Emotional Exhaustion and Depersonalization domains with the “sleep disorder” component of the Pittsburgh Sleep Quality Index Questionnaire of higher education teachers ( $n=140$ ). Manaus, AM, Brazil, 2022

Domain	Sleep disorder		p-value*
	Very good/ Good (n=99)	Poor (n=41)	
Emotional exhaustion			
Mean (standard deviation)	31.6 (5.6)	34.3 (5.7)	0.029
Median	32	34	
Minimum-maximum	11-47	22-49	
Mean rank	65.7	82.1	
Depersonalization			
Mean (standard deviation)	16.9 (2.6)	18.2 (2.9)	0.048
Median	17	18	
Minimum-maximum	6-22	13-24	
Medium rank	66.2	80.9	

\*Mann-Whitney test ( $p<0.05$ )

Table 4 shows the association of the MBI Emotional Exhaustion and Depersonalization domains with the PSQI-BR “dysfunction during the day” component.

**Table 4** – Association of the Maslach Burnout Inventory Emotional Exhaustion and Depersonalization domains with the “daytime dysfunction” component of the Pittsburgh Sleep Quality Index Questionnaire in higher education teachers (n=140). Manaus, AM, Brazil, 2022

Domain	Daytime dysfunction			p-value*
	Very good (n=13)	Good (n=89)	Poor/Very poor (n=38)	
Emotional exhaustion				
Mean (standard deviation)	32.6 (7.3)	31.5 (5.6)	34.4 (5.1)	0.005
Median	30	32	35	
Minimum-maximum	26-49	11-47	22-44	
Mean rank	59.1	64.5	88.5	
Depersonalization				
Mean (standard deviation)	16.8 (3.5)	16.8 (2.7)	18.4 (2.4)	0.013
Median	17	17	18.5	
Minimum-maximum	12-23	6-24	13-23	
Medium rank	65.0	64.3	86.9	

\*Kruskal-Wallis's test (p<0.05); Mann-Whitney test corrected for Bonferroni multiple comparisons: Emotional exhaustion domain: Very good vs Good (p=1.0000)/ Very good vs Poor/Very poor (p=0.2608)/ Good vs Poor/Very poor (p=0.0043). Depersonalization domain: Very good vs Good (p=1.0000)/ Very good vs Poor/Very poor (p=0.4430)/ Good vs Poor/Very poor (p=0.0093)

Table 5 shows the association between the MBI domains and the PSQI global score. Teachers with a global score of sleep disorder had higher scores in the domains Emotional exhaustion and Personal fulfillment.

**Table 5** – Association between scores of the Maslach Burnout Inventory domains and overall score of the Pittsburgh Sleep Quality Index Questionnaire of higher education teachers (n=140). Manaus, AM, Brazil, 2022

Domains	Global score of PSQI-BR			p-value*
	Good (n=23)	Poor (n=93)	Presence of the sleep disorder (n=24)	
Emotional exhaustion				
Mean (standard deviation)	30.1(7.1)	32.3 (5.5)	34.9 (4.3)	0.007
Median	30	32	35.5	
Minimum-maximum	11-42	15-49	25-44	
Mean rank	55.5	68.8	91.3	
Depersonalization				
Mean (standard deviation)	17.1(2.4)	17.0 (2.8)	18.4 (2.6)	0.093
Median	17	17	19	
Minimum-maximum	12-21	6-24	13-23	
Medium rank	68.8	66.7	86.7	
Personal fulfillment				
Mean (standard deviation)	20.7(5.4)	21.1 (4.6)	24.3 (3.9)	0.010
Median	22	21	24.5	
Minimum-maximum	6-29	8-31	16-32	
Medium rank	66.6	65.6	93.1	

\*Kruskal-Wallis test (p<0.05); Mann-Whitney test corrected for Bonferroni multiple comparisons: Emotional exhaustion domain: Good vs Poor (p=0.3667)/ Good vs Sleep Disorder (p=0.3667)/ Poor vs Sleep Disorder (p=0.0323). Personal fulfillment domain: Good vs Poor (p=1.0000)/ Good vs Sleep Disorders. (p=1.0000)/ Poor vs Sleep Dist. (p=0.0107).

## Discussion

Poor sleep quality has been described in the literature as frequent in higher education teachers. In this study, 66.4% of the participants had poor sleep quality according to the PSQI. Alterations in sleep patterns predispose to problems that affect cognitive performance, favoring several problems for biopsychosocial health<sup>(12)</sup>. Other studies that used the same

instrument in samples of higher education teachers found lower percentages: 61.3% with teachers from Bahia<sup>(16)</sup>; 53.8% in teachers from Goiás<sup>(6)</sup>; and 52% of teachers in Piauí<sup>(17)</sup>.

Increased workload has been a variable that contributes to the manifestation of sleep disorders. In the present study, 24 teachers had scores compatible with the presence of sleep disorders, which possibly favored difficulty falling asleep, daytime sleepiness, short sleep duration (less than five hours), insomnia, early awakening, and non-restorative sleep. In this context, teachers sometimes need to perform work outside the institutional hours and space, a situation that can favor professional exhaustion, and this working condition explains the poor sleep quality in this and other investigations<sup>(18-19)</sup>.

Doctors had better subjective sleep quality when compared to masters and specialists<sup>(20)</sup>. However, doctors had a 64% prevalence of poor sleep quality and showed greater risks of dysfunction during the day, which causes several metabolic, cognitive, physical, endocrine, and neural disorders, so that the appearance of gastrointestinal problems, eating disorders and deficits in the immune system is favored, affecting health and quality of life<sup>(11-12)</sup>.

Teachers with a master's degree had a higher prevalence of emotional exhaustion when compared to specialists<sup>(21)</sup>. To incorporate more skills and meet the educational objectives proposed by the educational institution, regardless of the title, teachers are instructed to qualify, which predisposes them to chronic stress, due to the responsibilities formed by the work sector<sup>(19)</sup>.

Teachers with salaries above R\$ 5,000.00 and a higher number of employment relationships had poor sleep quality in this research. These labor states interfere with the quality of life, harming the work environment and bringing several losses to the planning of classes, which increases the probability of developing sleep disorders<sup>(22)</sup>.

In burnout syndrome, the domains Emotional exhaustion and Depersonalization are presented in ascending order: the higher the score, the greater the

severity. However, the Personal fulfillment domain is classified in the opposite way: the lower the score, the greater the severity<sup>(23)</sup>. That said, the teachers studied showed a high risk of developing burnout syndrome so that this condition can interfere with professional performance.

Teachers exposed to double working hours become more susceptible to the emergence of sleep disorders, since this working condition compromises physical, psychological, and mental well-being, affecting professional performance<sup>(24)</sup>. However, according to studies, those who worked in only one institution had better habitual sleep efficiency<sup>(21,25)</sup>. The accumulation of employment relationships and working in alternate shifts are work aspects that favor work overload, with activities that include correcting tests, guiding students, having too many students in the classroom, producing, and publishing academic articles. This condition leads to a higher risk of illness due to occupational stress<sup>(19)</sup>.

Teachers who had two or more employment relationships had a higher prevalence of the Depersonalization domain of the MBI, making them more susceptible to manifestations of burnout syndrome<sup>(26)</sup>. Similar results were found, highlighting those teachers with two or more jobs obtained a higher score in the Depersonalization domain. Working in two or more educational institutions is due to financial, personal, and labor conditions, leading them to need more than one job<sup>(23)</sup>. This situation contributes to the appearance of frequent signs such as irritability, sadness, and anxiety, which can lead to psychosomatic symptoms such as stress, insomnia, hypertension<sup>(27)</sup>.

The good subjective sleep quality showed lower scores in the MBI Emotional Exhaustion and Depersonalization domain. Using the PSQI and the MBI with 575 university professors, similar results were found, since only 24.1% of them obtained indications of poor sleep quality, with a low prevalence of emotional exhaustion, pointing to poor sleep quality as an important risk factor for professional burnout<sup>(21)</sup>. When subjected to high demands at work, teachers have little time to perform activities in the personal

sphere, triggering signs and symptoms correlated with this syndrome<sup>(25)</sup>.

The presence of three-dimensional criteria indicates the manifestation of burnout syndrome, and the presence of two, a high risk for development<sup>(28)</sup>. It was evidenced that teachers with poor sleep disturbance had higher scores in the Emotional exhaustion and Depersonalization domains. Participants who had scores in the global score of sleep disorder obtained, in this research, higher scores in the domains Emotional exhaustion and Professional fulfillment. Poor sleep quality is a factor that contributes to the worsening of the dimensions present in the burnout syndrome<sup>(21,29)</sup>.

When knowing the working conditions that contribute to the professional exhaustion of teachers, it is inferred that the practice of physical and leisure activities included in their routine can collaborate to minimize the level of stress caused by the work environment, reducing the chances of burnout<sup>(18)</sup>. Providing this professional class with instruction on strategies with the potential to extinguish the negative sequelae caused by work overload becomes an essential skill, with the possibility of positively impacting sleep quality<sup>(22)</sup>.

## Study limitations

This research was conducted in a private higher education institution, so its results cannot be generalized. However, comparative studies in public institutions should be considered, aiming to verify similar or divergent data, considering the different working conditions.

## Contributions to practice

This research minimizes the gap in the scientific literature on the subject addressed and can contribute to the implementation of measures to improve the sleep quality and life of teachers, to reduce the action of variables that favor the emergence of sleep disorders and Burnout syndrome.

## Conclusion

The sleep quality of teachers is influenced by several factors that predispose them to the appearance of sleep disorders, making them more susceptible to the development of burnout syndrome. There is a need for alertness in the management of work stressors that contribute to physical and emotional exhaustion, influencing professional performance. Thus, it is necessary to develop new studies, actions and programs that promote the decrease of these conditions, for a better quality of life.

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## Authors' contribution

Conception and design or analysis and interpretation of data: Barbosa IEB, Mallagoli ISS, Fonseca CD, Belasco AGS.

Writing of the manuscript or relevant critical revision of the intellectual content: Barbosa IEB, Okuno MFP, Mallagoli ISS, Belasco AGS.

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Responsibility for all aspects of the text in ensuring the accuracy and completeness of any part of the manuscript: Barbosa IEB, Belasco AGS.

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