

Assessment of Sleep and Occupational Stress Among Primary Health Care Professionals

Avaliação do Sono e Estresse Ocupacional de Profissionais de Saúde da Atenção Primária
Evaluación del Sueño y Estrés Ocupacional en Profesionales de la Atención Primaria de Salud

RESUMO

Objetivo: Avaliar a relação entre a qualidade do sono e os níveis de estresse ocupacional em profissionais de saúde da Estratégia Saúde da Família. **Método:** Estudo transversal, descritivo e analítico, realizado em 2025 com 57 profissionais de cinco unidades da Estratégia Saúde da Família. A coleta de dados ocorreu por meio de questionário sociodemográfico e de hábitos de vida, Índice de Qualidade do Sono de Pittsburgh e Job Stress Scale. **Resultados:** Verificou-se predominância de má qualidade do sono em 98,2%. Quanto ao estresse ocupacional, 59,6% apresentaram alta demanda psicológica e 63,2% alto controle sobre o trabalho, configurando o perfil ativo. **Conclusão:** A maioria apresentou sono de baixa qualidade, possivelmente influenciado por fatores psicossociais e laborais, destacando a necessidade de estratégias institucionais voltadas à promoção da saúde mental, ao equilíbrio entre demandas e recursos e ao cuidado com o sono como parte essencial da saúde ocupacional na Atenção Primária.

DESCRIPTORIOS: Sono; Estresse Ocupacional; Atenção Primária à Saúde; Saúde Ocupacional.

ABSTRACT

Objective: To assess the relationship between sleep quality and occupational stress levels among health professionals working in the Family Health Strategy. **Method:** This was a cross-sectional, descriptive, and analytical study conducted in 2025 with 57 professionals from five Family Health Strategy units. Data were collected using a sociodemographic and lifestyle questionnaire, the Pittsburgh Sleep Quality Index, and the Job Stress Scale. **Results:** Poor sleep quality was observed in 98.2% of participants. Regarding occupational stress, 59.6% exhibited high psychological demand and 63.2% high control over work, characterizing an active job profile. **Conclusion:** Most participants presented poor sleep quality, possibly influenced by psychosocial and work-related factors. These findings underscore the need for institutional strategies aimed at promoting mental health, balancing work demands and resources, and addressing sleep as an essential component of occupational health in Primary Health Care.

DESCRIPTORS: Sleep; Occupational Stress; Primary Health Care; Occupational Health.

RESUMEN

Objetivo: Evaluar la relación entre la calidad del sueño y los niveles de estrés ocupacional en profesionales de la salud de la Estrategia de Salud de la Familia. **Método:** Estudio transversal, descriptivo y analítico, realizado en 2025 con 57 profesionales de cinco unidades de la Estrategia de Salud de la Familia. Los datos se recopilaron mediante un cuestionario sociodemográfico y de hábitos de vida, el Índice de Calidad del Sueño de Pittsburgh y la Escala de Estrés Laboral (Job Stress Scale). **Resultados:** Se verificó predominio de mala calidad del sueño en el 98,2% de los participantes. En cuanto al estrés ocupacional, el 59,6% presentó alta demanda psicológica y el 63,2% alto control sobre el trabajo, configurando un perfil activo. **Conclusión:** La mayoría presentó sueño de baja calidad, posiblemente influenciado por factores psicossociales y laborales, lo que resalta la necesidad de estrategias institucionales dirigidas a promover la salud mental, equilibrar las demandas y los recursos, y considerar el sueño como un componente esencial de la salud ocupacional en la Atención Primaria de Salud.

DESCRIPTORIOS: Sueño; Estrés Laboral; Atención Primaria de Salud; Salud Laboral.

RECEIVED: 10/07/2025 APPROVED: 10/24/2025

How to cite this article: Nicoliello L, Mendes SS, Jorgetto GV, Moraes JA. Assessment of Sleep and Occupational Stress Among Primary Health Care Professionals. *Saúde Coletiva (Brazilian Edition)* [Internet]. 2025 [cited year month day];16(102):17790-17805. Available from: DOI: 10.36489/saudecoletiva.2025v16i102p17790-17805

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INTRODUCTION

The health of Primary Health Care (PHC) professionals has become a growing concern, especially in relation to sleep quality and psychological stress. Evidence suggests that these factors can compromise both the well-being of workers and their performance in the exercise of their duties⁽¹⁾. The Coronavirus Disease 2019 (COVID-19) pandemic has intensified this scenario, increasing the overload and emotional vulnerability of professionals, which reinforces the need for adequate support strategies⁽²⁾.

Sleep plays an essential role in cognitive processes, especially in memory consolidation and information retention, and is also essential for maintaining the body's physiological balance⁽³⁾. The recommended duration varies according to age group, with adults between 18 and 60 years of age being advised to sleep at least seven hours per night. Adopting an adequate sleep routine helps prevent disease, aids in weight control, contributes to stress reduction, and has a positive influence on mood regulation⁽⁴⁾.

However, insufficient sleep is associated with negative outcomes such as metabolic, cardiovascular, and psychological changes⁽⁵⁾. Those who work night shifts or long hours are at high risk of developing sleep disorders, which increase stress and reduce the quality of care provided. Evidence

shows that shift work is strongly associated with insomnia, changes in the circadian cycle, and damage to the physical and mental health of health-care professionals⁽⁶⁾.

PHC represents the preferred gateway for users to the healthcare system, guiding comprehensive and continuous care. In the Brazilian context, its structure is mainly based on the Family Health Strategy (ESF), which is the central strategy for the organization and operation of PHC⁽⁷⁾. Professionals working at this level of care, such as doctors, nurses, community health workers, and other professionals, face working conditions that can negatively impact their physical and mental health. Research has shown a high prevalence of sleep disorders⁽⁸⁻⁹⁾ and high levels of occupational stress, often associated with work overload, lack of organizational support, sociodemographic factors, and chronic health conditions⁽¹⁰⁾.

Given this context, it is essential to understand how sleep and psychological stress interact and affect the health of PHC professionals, considering the complexity of the demands and the strategic role they play in the Unified Health System (SUS). The relevance of this study lies in identifying factors that compromise the well-being of these workers and the quality of care provided, contributing to the development of institutional policies and strategies aimed at promoting health and improving working conditions in primary care.

Thus, this study aimed to assess the relationship between sleep quality and occupational stress levels in ESF health professionals.

METHOD

This is a cross-sectional, descriptive, and analytical study with a quantitative approach, conducted in five PHC units linked to the SUS in the municipality of Tambaú, in the interior of the state of São Paulo. The research scenario covered all five ESF units in the municipality, ensuring the entirety of this model of care in local PHC.

Data collection was carried out between January and February 2025, through the in-person application of structured questionnaires to health professionals working in the ESF by the first author. The target population of the study corresponded to all health professionals working in the ESF units in the municipality. The sample was obtained by convenience and intentionality, thus covering all of these workers. Of the 59 eligible professionals, 57 participated in the study, corresponding to a participation rate of 96.6%. Two professionals were not included: one because they were on vacation and the other because they were on medical leave at the time of data collection.

Health professionals working in the five ESF units in the municipality of Tambaú, São Paulo, provided they had been working for at least six months, were aged 18 years or older,

gave their formal consent by signing the Free and Informed Consent Form (FICF), and were available to respond fully to the research instruments. Professionals on sick leave, maternity leave, or other reasons during the data collection period; those with a clinical diagnosis of severe sleep disorders undergoing treatment or with severe medical/psychiatric conditions (such as schizophrenia or unstable bipolar disorder) that could compromise the results; as well as those who did not complete the questionnaires or withdrew from participation at any stage of the study.

It should be noted that, in addition to the five FHS units, the municipality had a Basic Health Unit (BHU). However, this was not included in the study because it had a different organizational model from the ESF units, with a different team composition and care dynamics, which could compromise methodological homogeneity and the comparability of results. Thus, it was decided to include only the ESF units, ensuring uniformity in the organizational profile of the units investigated.

Data collection was performed using three instruments: a sociodemographic questionnaire and a questionnaire on professional characteristics and lifestyle habits. The second instrument was the Pittsburgh Sleep Quality Index (PSQI-BR), a validated instrument in Brazil that subjectively assesses sleep quality in the 30 days prior to completion. It consists of 19 self-administered questions, grouped into seven components: subjective quality, latency, duration, habitual efficiency, sleep disturbances, use of sleep medication, and daytime sleepiness. Each component is scored from 0 to 3, resulting in an overall score of 0 to 21 points, in which values ≤ 5 indicate good sleep quality and > 5 indicate poor sleep quality⁽¹¹⁾.

The third instrument assessed occupational stress using the Job Stress

Scale (JSS), a self-administered instrument validated and adapted for Brazil⁽¹²⁾, consisting of 17 questions distributed across three domains: Psychological Demand (questions 1 to 5), which assesses the intensity and conflicts of demands; Control (questions 6 to 11), which analyzes autonomy, use of skills, and decision-making; and Social Support (questions 12 to 17), which measures the support received from colleagues and superiors. The answers follow a Likert scale from 1 to 4 points, with total scores varying according to each domain. To classify stress levels, the methodology of Karasek and Theorell⁽¹³⁾ was adopted, using the median of the scores as a cutoff point to categorize each domain into high or low values.

The questionnaires were administered individually in a private setting at the FHS units, by prior appointment with the participants. The average time to complete the questionnaire ranged from 20 to 30 minutes. Throughout the process, the researchers remained available for clarification, ensuring the standardization of data collection. The data were organized in Microsoft Excel® spreadsheets and analyzed using Statistical Analysis System (SAS) software. Categorical variables were described in absolute (n) and relative (%) frequencies. Continuous variables were presented as mean, standard deviation, and median. The Mann-Whitney test, suitable for nonparametric distributions, was used to compare domains between groups. A significance level of 5% ($p < 0.05$) was adopted.

The study followed the ethical precepts established by Resolution No. 466/2012 of the National Health Council and was approved by the Research Ethics Committee of the University Center of the Associated Faculties of Education (UNIFAE), under opinion No. 7,014,185 and CAAE No. 82103424.3.0000.5382. Participation was voluntary, upon signing

the TCLE, ensuring confidentiality, anonymity, and the possibility of withdrawal at any time, without prejudice.

RESULTS

The study sample consisted of 57 participants, mostly women (57.9%), with children (57.9%) and married or in a stable relationship (66.7%), with a mean age of 42.7 years ($SD = 9.5$). The main occupation was Community Health Agent (CHA) (40.4%), followed by Nursing Technicians (26.3%). The most common length of service was 11 to 15 years (35.1%), followed by 6 to 10 years (28.1%), and most had a weekly workload of between 31 and 40 hours (94.7%), with no other employment (75.4%).

Regarding health, 63.2% reported comorbidities, mainly anxiety (28.1%) and hypertension (22.8%). Sleep was considered “sometimes” restful by (42.1%) and “rarely” by (24.6%). Regarding lifestyle, (38.6%) practiced physical activity three to five times a week, while (17.5%) did so once or twice a week. The most frequently mentioned leisure activity was watching movies or TV series, reported by 56.1% of participants. Most denied smoking (94.7%) and reported alcohol consumption as “never” (38.6%) or “rarely” (33.3%).

Sleep data revealed that participants slept an average of 8 hours per night ($SD = 1.4$), with an average latency time of 26.4 minutes ($SD = 17.8$). Sleep efficiency averaged 94.4% ($SD = 96.2$).

Table 1 shows the distribution of participants according to sleep quality and occupational stress levels. Poor sleep quality was predominant, associated with high levels of psychological demand and high control over work.

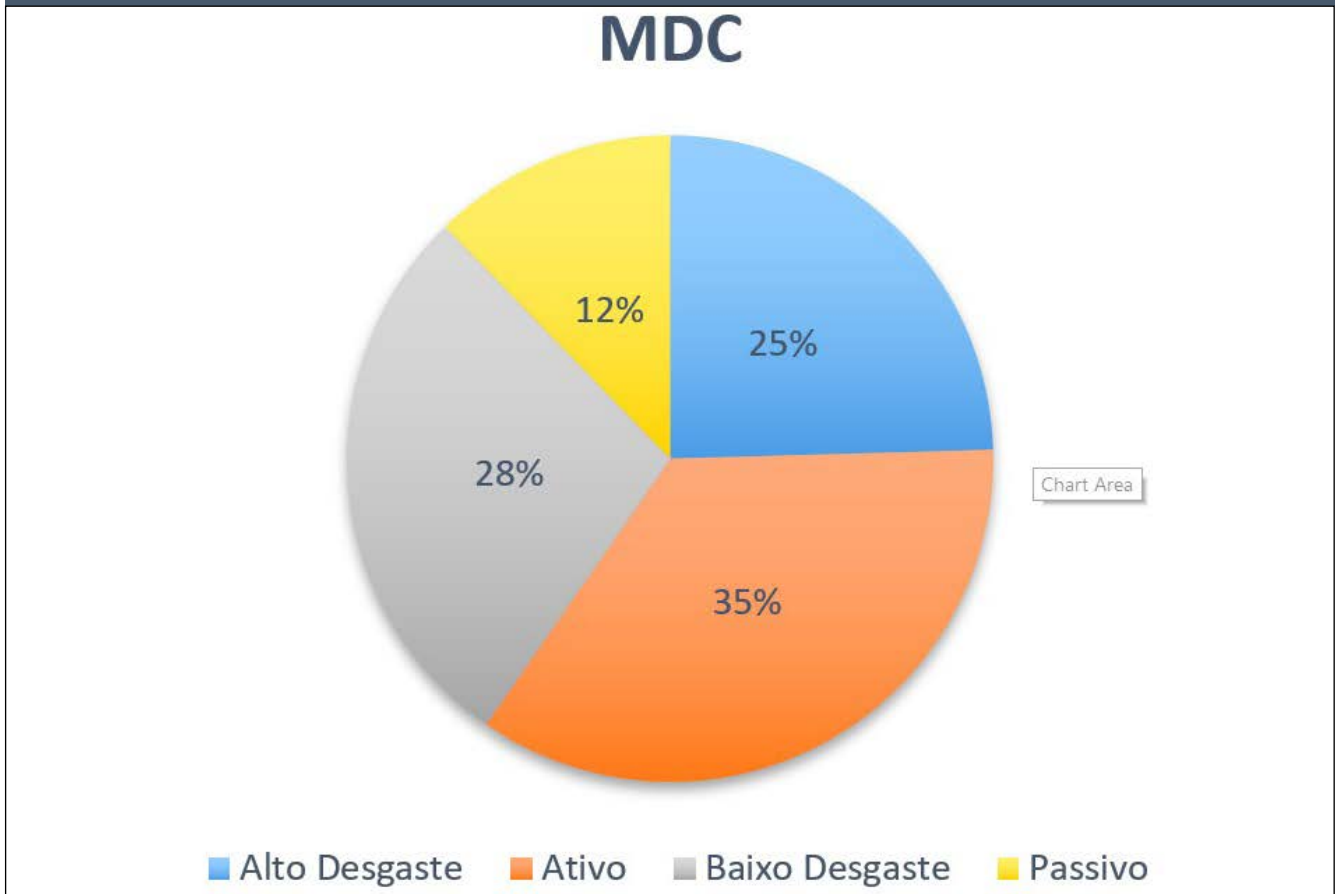
Table 1. Classification of the Job Stress Scale domains and PSQI global score among FHS professionals, Tambaú, São Paulo, Brazil, 2025.

Assessed Domains	n	%
Psychological Demand		
High	34	59,6%
Low	23	40,4%
Control		
High	36	63,2%
Low	21	36,8%
Total PSQI		
Good Sleep Quality	1	1,8%
Poor Sleep Quality	56	98,2%

Source: Prepared by the authors.

Figure 1 shows the distribution of ESF professionals according to the Demand-Control Model (DCM). There is a predominance of the active profile, characterized by a combination of high psychological demand and high control over work.

Figure 1. Distribution of Demand-Control Model profiles among ESF professionals, Tambaú, São Paulo, Brazil, 2025.



Source: Prepared by the authors.

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Table 2 presents a comparison between groups with high and low psychological demand in relation to the

domains and overall PSQI score. No statistically significant differences were identified between the groups.

Table 2. Comparison of PSQI domains according to the level of control over work among ESF professionals, Tambaú, São Paulo, Brazil, 2025.

PSQI Domains	High Psychological Demand				Low Psychological Demand				p-value*
	n	mean	Standard deviation	median	n	mean	Standard deviation	median	
Subjective Sleep Quality	34	1,18	0,94	1,00	23	1,48	0,79	1,00	0,1724 [†]
Sleep Latency	34	1,50	0,90	2,00	23	1,52	0,85	1,00	0,9931 [†]
Sleep Duration	32	0,25	0,57	0,00	22	0,27	0,55	0,00	0,7740 [†]
Sleep Efficiency	34	3,00	0,00	3,00	23	3,00	0,00	3,00	> 0,9999 [†]
Sleep Disturbance	32	1,38	0,49	1,00	23	1,39	0,58	1,00	0,8203 [†]
Use of Sleeping Medication	34	0,12	0,54	0,00	23	0,57	1,12	0,00	0,0775 [†]
Daytime Dysfunction	34	1,29	1,00	1,00	23	1,35	0,88	1,00	0,7600 [†]
Total PSQI	34	8,62	2,75	8,00	23	9,57	2,94	10,00	0,2339 [†]

Source: Prepared by the authors.

Table 3 shows the comparison of

PSQI domain scores between groups with high and low control over work.

No statistically significant differences were observed between the groups.

Table 3. Comparison of PSQI domains between professionals with high and low control over work, Tambaú, São Paulo, Brazil, 2025.

PSQI Domains	High Control				Low Control				p-value*
	n	mean	Standard deviation	median	n	mean	Standard deviation	median	
Subjective Sleep Quality	36	1,44	0,84	1,00	21	1,05	0,92	1,00	0,0879 [†]
Sleep Latency	36	1,61	0,84	2,00	21	1,33	0,91	1,00	0,2663 [†]
Sleep Duration	34	0,24	0,55	0,00	20	0,30	0,57	0,00	0,5679 [†]
Sleep Efficiency	36	3,00	0,00	3,00	21	3,00	0,00	3,00	>0,9999 [†]
Sleep Disturbance	35	1,49	0,51	1,00	20	1,20	0,52	1,00	0,0695 [†]
Use of Sleeping Medication	36	0,39	0,93	0,00	21	0,14	0,65	0,00	0,2171 [†]
Daytime Dysfunction	36	1,42	0,84	1,00	21	1,14	1,11	1,00	0,2045 [†]
Total PSQI	36	9,53	2,65	10,00	21	8,10	3,00	8,00	0,0585 [†]

Source: Prepared by the authors.

DISCUSSION

The sociodemographic and occupational data of the participants in this study revealed a characteristic profile of the PHC workforce, marked mainly by the presence of women, many of whom had children and were in stable marital relationships. This finding converges with the widely described trend in the

literature on the feminization of health, which highlights the overload imposed by the double shift and its effects on the physical and mental health of female workers. Previous studies show that women who balance family and professional demands are more vulnerable to stress and sleep disorders, reinforcing the association between working conditions and adverse psychosocial impacts⁽¹⁴⁾.

The prevalence of CHWs as the predominant occupation reflects the central role of these professionals in health promotion and prevention actions in the territory. Their direct and continuous contact with the population exposes them to multiple demands and challenges, which can result in higher levels of occupational stress and emotional overload. Evidence shows that, due to the nature of their duties, CHWs often ex-

perience situations of vulnerability and social suffering among the families they assist, which potentially impacts their mental health and well-being⁽¹⁵⁾.

The length of service was mainly concentrated between 11 and 15 years, followed by 6 to 10 years, indicating a prolonged bond with the unit. In addition, there was a high weekly workload and a predominance of exclusive dedication to public health services, aspects that may contribute to greater exposure to stressors. This scenario may contribute to the accumulation of occupational burnout and an increased risk of psychological distress over time. Studies indicate that the longer the length of service, the greater the risk of psychological distress, due to remaining in continuously challenging environments⁽¹⁶⁾.

Regarding lifestyle, insufficient physical activity and a predominance of sedentary leisure activities were observed, despite the low prevalence of smoking and reduced alcohol consumption, indicating partially protective behaviors, but with significant gaps in the adoption of active habits. Similar findings have been described in international studies, which point to physical activity as a protective factor for sleep quality, metabolic health, and quality of life among healthcare professionals, reinforcing the need for institutional strategies that encourage active habits in primary care⁽¹⁷⁾. However, these results differ from a national study, which pointed to physically active workers with low rates of sedentary behavior⁽¹⁸⁾.

The presence of comorbidities, especially anxiety and hypertension, highlights the impact of occupational demands on the health of professionals. These results are consistent with a study conducted in Diamantina (MG) with 203 PHC workers, which identified the occurrence of hypertension, depression, and stress, in addition to associating the presence of multimorbidities with older age, the occurrence of common mental disorders, and organizational factors at work, highlighting social support as a

protective element⁽¹⁹⁾.

Despite an average of eight hours of sleep and satisfactory efficiency, the overall PSQI score indicated poor sleep quality for almost all professionals, accompanied by negative subjective perception. Factors such as insomnia, interruptions, tiredness upon waking, and difficulty falling asleep, possibly related to occupational stress, resulted in non-restorative sleep. These findings converge with the literature, which shows a high prevalence of sleep disorders among primary care workers, often associated with work overload and emotional demands^(8,14). In addition, national studies point to insomnia associated with anxiety, depression, and chronic pain, especially among community health workers and nursing technicians, while cohort studies show that increased occupational stressors and reduced coping resources increase the risk of sleep disorders.

With regard to **occupational stress**, participants presented high levels of psychological demand accompanied by high control over work, characterizing, for the most part, the active profile according to the Demand-Control Model. Although this profile is associated with greater engagement and learning, it can lead to overload when there is no balance between demands and resources. Recent evidence highlights that long working hours, night shifts, and intense demands increase the risk of adverse physical and psychological outcomes, such as cardiovascular disease and emotional exhaustion⁽²¹⁾. In addition, community health workers have reported deficiencies in appreciation and multiple stress-related symptoms⁽²²⁾. On the other hand, protective factors, such as spiritual and subjective well-being, are associated with reduced perceived stress, suggesting the importance of institutional strategies that promote psychosocial support and more effective coping practices⁽²³⁾.

However, **when integrating the findings on sleep and stress**, it was observed that no significant differences

in sleep quality were identified between groups with different levels of psychological demand and control over work. This result suggests that factors other than the perception of demand and control may be influencing sleep quality, such as mental health, the presence of comorbidities, and individual coping resources. In this sense, sleep quality should be understood as the result of the interaction between work and non-work aspects, including long working hours, night work, depressive symptoms, and lack of social support, reinforcing the need for interventions that consider the individual as a whole⁽²⁴⁾.

It is important to consider, however, that the cross-sectional design adopted in this study does not allow for establishing causal relationships between the variables analyzed. The sample, obtained for convenience and restricted to a single municipality, limits the generalization of the results to other PHC realities. Thus, it is recommended that future investigations adopt longitudinal designs and larger samples in order to deepen the understanding of the interactions between sleep, stress, and psychosocial factors, consolidating evidence to support institutional policies aimed at promoting worker health in PHC.

CONCLUSION

The study showed a high prevalence of poor sleep quality among FHS professionals, associated with high levels of psychological demand and control over work. Despite the apparent balance between demand and autonomy, occupational stress and psychosocial factors had a significant impact on the well-being and rest of these workers. The results reinforce the importance of institutional policies aimed at promoting mental health, managing workloads, and valuing sleep care as an essential component of occupational health in Primary Care.

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ACKNOWLEDGMENTS

The authors thank the Coordination of the Municipal Health Department of Tambaú-SP and all the professionals who kindly participated in this research.

FINANCIAL OR TECHNICAL SUPPORT

Research conducted with the authors' own resources.

DECLARATION OF FINANCIAL AND/OR AFFILIATION CONFLICTS OF INTEREST

The authors declare that there are no financial, institutional, or personal conflicts of interest related to this study.