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Analysis of the sleep quality of professors at the Universidade Paranaense de Cascavel

Análise da qualidade do sono dos docentes da Universidade Paranaense de Cascavel

Análisis de la calidad del sueño de los docentes de la Universidad Paranaense de Cascavel

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Abstract
Objective: The present study aimed to evaluate the sleep quality of the professors of a private university in the municipality of Cascavel, Paraná/Brazil, based on the fact that sleep is a physiological mechanism of paramount importance for human metabolism, as it has an impact on the various functions performed by the body. Since the impairment of the sleep-wake cycle from external occasions or environmental factors, one of them being work, results in the triggering of sleep disorders, negatively impacting health. Methodology: Cross-sectional and quantitative-qualitative research with descriptive analysis and non-probalistic convenience sampling, carried out between March and June 2025 with 28 professors from the University of Paranaense (UNIPAR), based on the application of online questionnaires, including the Morning-Evening Identification (IMV) and the Epworth Sleepiness Scale (ESS). Results: Most teachers do not have excessive daytime sleepiness (75%), however, factorssuch as extensive workload, overweight (mean BMI of 26.94 kg/m²), use of electronic devices before bedtime (92.9%), and regular consumption of medications (53.6%) indicate risks to sleep quality. In addition, influences of marital status, multiple professional functions and divergent chronotypes in relation to working hours were identified. Conclusion: Although the data do not indicate an alarming prevalence of sleep disorders, there are relevant signs of impairment of the quality of night rest among teachers. These findings reinforce the importance of institutional measures aimed at promoting workers' health, with a focus on sleep hygiene, adequacy of the workload, and psychosocial support.
Keywords: Sleep; Sleep Quality; Teachers; Teaching; Sleep Wake Disorders.

Resumo
Objetivo: O presente estudo teve como objetivo avaliar a qualidade do sono dos docentes de uma universidade privada do município de Cascavel, no Paraná/Brasil, fundamentado que o sono é um mecanismo fisiológico de suma importância para o metabolismo humano, pois possui impacto nas diversas funções exercidas pelo corpo. Visto que, o comprometimento do ciclo sono-vigília a partir de ocasiões externas ou fatores ambientais, uma delas sendo o trabalho, decorre o desencadeamento de distúrbios do sono, impactando negativamente a saúde. Metodologia: Pesquisa transversal e quanti-qualitativa com análise descritiva e amostragem não probalística de conveniência, realizada entre março e junho de 2025 com 28 docentes da Universidade Paranaense (UNIPAR), a partir da aplicação de questionários online, incluindo a Identificação Matutinidade-Vespertinidade (IMV) e a Escala de Sonolência de Epworth (ESE). Resultados: A maioria dos docentes não apresentam sonolência diurna excessiva (75%), porém,

fatores como carga horária extensa, sobrepeso (média de IMC de 26,94 kg/m²), uso de dispositivos eletrônicos antes de dormir (92,9%), e consumo regular de medicamentos (53,6%) indicam riscos para a qualidade do sono. Além disso, foram identificadas influências do estado civil, múltiplas funções profissionais e cronotipos divergentes em relação ao horário de trabalho. Conclusão: Ainda que os dados não apontem uma prevalência alarmante de distúrbios do sono, há sinais relevantes de comprometimento da qualidade do descanso noturno entre os docentes. Tais achados reforçam a importância de medidas institucionais voltadas à promoção da saúde do trabalhador, com foco na higiene do sono, adequação da carga laboral e suporte psicossocial.
Palavras-chave: Sono; Qualidade do Sono; Docentes; Ensino; Transtornos do Sono-Vigília.

Resumen
Objetivo: El presente estúdio tenía como objetivo evaluar la calidad del sueño de los docentes de una universidad privada del municipio de Cascavel, en Paraná/Brasil, fundamentado en que el sueño es un mecanismo fisiológico de suma importancia para el metabolismo humano, ya que tiene impacto en diversas funciones ejercidas por el cuerpo. Dado que la alteración del ciclo sueño-vigilia debido a situaciones externas o factores ambientales, uno de ellos siendo el trabajo, provoca el desencadenamiento de transtornos del sueño, impactando negativamente en la salud. Metodología: Investigación transversal y cuanti-cualitativa con análisis descriptivo y muestreo no probabilístico de conveniencia, realizada entre marzo y junio de 2025 con 28 docentes de la Universidad Paranaense (UNIPAR), a partir de la aplicación de cuestionarios en línea, incluyendo la Identificación de Matutinidad-Vespertinidad (IMV) y la Escala de Somnolencia de Epworth (ESE). Resultados: La mayoría de los docentes no presentan somnolencia diurna excesiva (75%), sin embargo, factores como carga horaria extensa, sobrepeso (IMC promedio de 26,94 kg/m²), uso de dispositivos electrónicos antes de dormir (92,9%), y consumo regular de medicamentos (53,6%) indican riesgos para la cualidad del sueño. Además, se identificaron influencias del estado civil, múltiples funciones profesionales y cronotipos divergentes en relación con el horario de trabajo. Conclusión: Aunque los datos no señalan una prevalencia alarmante de transtornos del sueño, si muestran señales relevantes de compromiso de la cualidad del descanso nocturno entre los docentes. Tales hallazgos refuerzan la importancia de medidas institucionales orientadas a la promoción de la salud del trabajador, con enfoco en la higiene del sueño, adecuación de la carga laboral y apoio psicossocial.
Palabras clave: Sueño; Cualidad del Sueño; Docentes; Enseñanza; Transtornos del Sueño-Vigilia.

1. Introduction

Sleep is defined in a wakefulness mode, where there is a decrease in metabolic, muscular and sensory exercises. It is therefore considered an indispensable physiological process for the good metabolism of the human body, since, when there is quality sleep, it competes with cognitive activities, improving reasoning and language skills, in addition to softening the levels of emotional stress (Maciel et al., 2023). On the other hand, studies indicate that lifestyle, and even the increase in working hours, are possible causes of sleep cycle disorder (Crepaldi & Carvalhais, 2020).

Consequently, to decrease in the quantity and quality of sleep, excessive daytime sleepiness is noted that correlates with high body mass index (BMI), diabetes *mellitus*, depression and reduced quality of life. Therefore, authors report that fatal traffic accidents affect one third of sleepy drivers (Alshareef, 2022), that is, the importance of good sleep wakefulness is indisputable, as it directly impacts the physical, emotional, relational, and productive aspects of individuals, characterizing itself as a public health problem (Freitas et al., 2021).

It is known that poor sleep quality and insufficiency contribute to prolonged alertness, insomnia, nightmares, daytime overload, and fatigue (Telles et al., 2021). Such sleep disorders also lead to changes in the endocrine and immune system, cardiovascular diseases, obesity, oxidative stress and compromised mental health (Maciel et al., 2023). Thus, investigating the factors associated with these sleep interventions, one of them being work, becomes essential, since in such an environment the increases in stressful responses are conducive to an increase in the release of the regulatory hormone of these reactions, glucocorticoid-GC, which leads to a bad rest period, before and after work functions (Freitas et al., 2021).

Singularly, higher education requires teaching professionals to have a long workload, which in addition to teaching, guiding students, organizing, evaluating tests, producing articles and so on, are led to acquire extra hours of professional practice, following the renunciation of essential time for rest, directly implying sleep and quality of life, negatively inducing full work performance (Crepaldi & Carvalhais, 2020).

A survey carried out by Alvim, Ferrarezi, Silva, Floriano and Rocha (2019) points out that university professors report feeling headaches constantly, gastric discomfort, nausea, insomnia, difficulty concentrating, anxiety and anguish caused by stress. In addition, De Sousa and Mendonça (2009) obtained reports of emotional exhaustion, depersonalization and decreased personal fulfillment among teachers, which are parameters previously related to Burnout Syndrome.

In view of the above, the present study aimed to evaluate the sleep quality of the professors of the Universidade Paranaense do Município de Cascavel, Paraná, while the academic period took place, based on the hypothesis that the work and the demands required by it are relevant aspects for the effectiveness of the adequate period of the sleep-wake cycle. This study sought to fill a gap in the literature by critically analyzing the interferences that directly impact the main theme of this context.

2. Methodology

The present study was conducted after approval by the Ethics Committee for Research involving Human Beings (CEP) of the Universidade Paranaense Campus Cascavel, Paraná and by the Ethics Committee – Plataforma Brasil under opinion No. 7.487.141/2025, Certificate of Presentation of Ethical Appreciation No. 87350225.0.0000.0109/2025.

Based on this, professors who worked at night at the University of Paranaense, located in the municipality of Cascavel, Paraná, aged 18 years or older, were interviewed, who agreed to sign the Informed Consent Form (ICF).

This study adopted a cross-sectional and quantitative-qualitative methodology through descriptive analysis, through a non-probabilistic convenience sampling (Pereira et al., 2018) in which simple descriptive statistics were used with pie charts, bar charts, data classes, absolute frequency and relative percentage frequency (Shitsuka et al., 2014; Akamine & Yamamoto, 2009). Data collection took place through online questionnaires developed on the Google Docs platform, to know the profile and sleep quality of the research participants, and the analysis of interfering factors for the definition of habits and conditions that negatively impact sleep quality.

Likewise, the Morningness-Afternoon Identification (IMV) questionnaires were used, which determines the chronotype of the teachers and their adaptation to work schedules, and the Epworth Sleepiness Scale (ESS), which refers to the possibilities of napping in eight daily situations, identifying the presence of excessive daytime sleepiness.

The data obtained were analyzed by a comparative, qualitative method and through SCORES for evaluation, as shown in Table 1 and Table 2.

Table 1 – Representative scores of Identification Matutinity-Evening.

SHIFT	SCORE
Variables	16-86 points
Morning individuals	70-86 points
Relatively morning individuals	59-69 points
Neutral individuals	42-58 points
Relatively evening individuals	31-41 points
Evening individuals	16-30 points

Source: Research data (2025).

Table 2 – Sleepiness probability score.

PROBABILITY	SCORE
Absence of somnolence	≤10
Excessive daytime sleepiness	11-15
Severe drowsiness	≥16

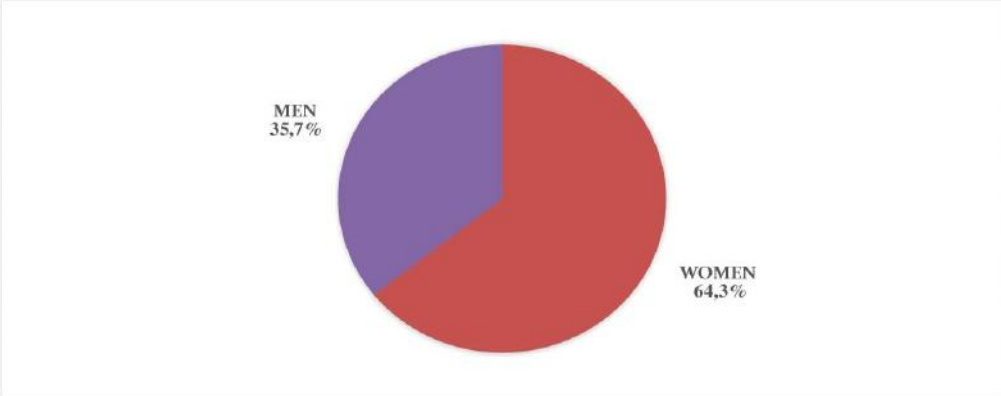
Source: Research data (2025).

Based on this, the data were plotted, and descriptive analyses were performed to calculate the incidence of responses in relation to the different variables investigated in the study.

3. Results and Discussion

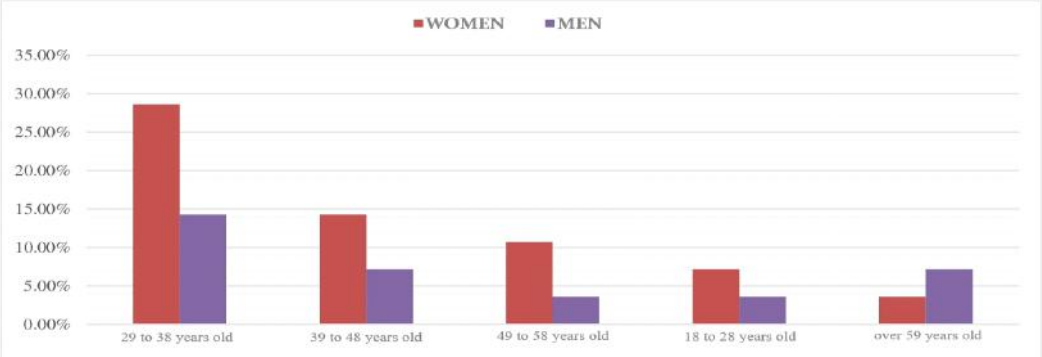
Through the intermediary of the questionnaires, on the substantiated relationship between the quality of sleep of the professors of the Universidade Paranaense in the municipality of Cascavel in Paraná, it was indicated that, of the 28 professionals analyzed, 64.3% women were predominant, and the remainder, men, with a percentage index of 35.7% (Figure 1). The highest age parameter was 42.9%, represented by university professors who reported being between 29 and 38 years old, while the others, 21.4% were between 39 and 48 years old, 14.3% were between 49 and 58 years old, 10.7% were between 18 and 28 years old, and another 10.7% belonged to the group aged 59 years or older (Figure 2).

Figure 1 – Gender distribution of the group studied.



Source: Authors.

Figure 2 – Age group of the participants.

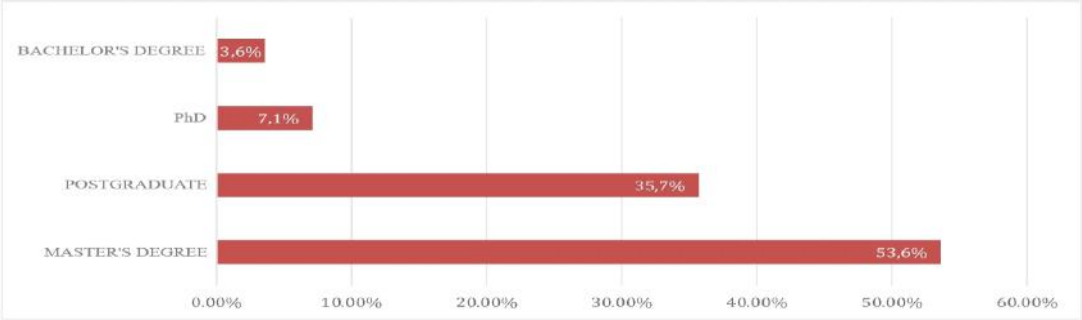


Source: Authors.

Above this criterion, where the University studied had a larger and noticeable female faculty, it is noteworthy that throughout the history of social development, women had unequal participation in the field of science, occupying a smaller space than men, as they were considered values strictly associated with the male sex (Ferreira, Texeira & Ferreira, 2022). However, in a survey conducted by Vossen et al. (2023) using data from member countries of the Organization for Economic Cooperation and Development (OECD) pointed out that, at all levels of education, women represented 70% of the teaching community, but only 44% constituted higher education. However, when operating data from the National Institute of Educational Studies and Research Anísio Teixeira (INEP) regarding the social profile of eleven private and public universities during the years 2015 to 2019, a decline in the insertion of female professors in university teaching was found, since in 2015 the percentage was 25.33% and in 2019, it became only 18.35%. This percentage correlates with data collected by the Union of Commercial Education Establishments in the State of São Paulo (SEMESP) in 2020, where 73.2% of higher education vacancies in the areas of health were occupied by women, but, except for this field of science, they covered only 52.8% of vacancies in other courses, considering that, commonly, women are professionally associated with areas of knowledge said to be feminine, that are related to domestic functions, segregating work according to biological gender (Hirata & Kergoat, 2007; Santos et al., 2023). In this tangent, the feminine ability to add to scientific knowledge factors that make it inclusive, dynamic and democratic is evidenced, as this knowledge is fundamental for human construction, considering its political, historical and social influence on human development (Kuhn, 1998; Lopes, Lopes & Santos, 2016).

Regarding the education of the interviewees, 53.6% have master's degrees, 35.7% are specialists, 7.1% have doctorates, and only 3.6% say they have only completed higher education as a school level (Figure 3).

Figure 3 – Education level of the teachers studied.



Source: Authors.

From the 2000s onwards in Brazil, there was a notable increase in the number of graduates in higher education, due to the democratization of teaching and greater investment made, both in the public and private space, collaborating for the social advancement of vocational training (Brasil, 2014). However, the academic journey of higher education does not materialize as the end of professional training, but only the beginning of a long journey in search of professional ascension, continuing other training and titles, as proposed by postgraduate, master's and doctoral degrees. However, in this journey, the subject tends to encounter divergent problems, in which the labor market has gradually imposed the need for workers who constantly seek to evolve in the knowledge of the selected career, requiring professionals trained for the labor demand. Nevertheless, there is still the fact that many of these higher education graduates are workers, disadvantaged in needing to reconcile this routine with professional training, in addition to the responsibility of supporting themselves and their families, especially women, in the attribution of mother, worker, and student (Lima & Cunha, 2022).

Based on this conception, Monteiro et al. (2021) focused on investigating the challenges faced by a group of seven basic education teachers in the state of Ceará, while teaching and attending in the same period some continuing education, such

as master's or doctorate, in which, when questioned about the impacts observed on the quality of the profession because they did not have a license for studies, they reached reports that, Not only was it exhausting, but also frustrating as it did not meet the demands of the job with excellence, in addition to directly implying the use of time, the reduction of the workload and consequently the remuneration. Another research that corroborates this strand is the analysis carried out by Lima and Cunha (2022), who collected narratives from twenty-three students of a certain master's program, where of the difficulties faced in the course, women declare that they confront more compared to men, because they show greater concern in search of harmony in professional and family life, In addition, it found obstacles in the selection process and financial limitations, compromising the completion of the training process.

Thus, there is a lack of public policies that intervene in such problems, considering this to be also a lever for the triggering of dimensions that affect the quality of life, because as Lima (2001, p. 36) reflects, "the condition of the teacher is beyond a mere executor, it goes beyond the limits of the title and the certificates that he can display in his curriculum. It is, rather, in their professional and intellectual competence".

Most of the teachers in this sample are married with a percentage of 46.4% followed by 28.6%, which refers to the "single/never married" group, and 10.7% are engaged and another 10.7% divorced, in addition to 3.6% being widowed. Parallel to this index, interpersonal relationships directly imply the quality of sleep, through a psychological, behavioral, chronobiological and physiological bonding, as portrayed by Troxel et al. (2007), showing that affective relationships of a positive nature favor sleep through well-established wakefulness cycles, promoting the release of the stress-reducing hormone, oxytocin, while observed in bad relationships, the activation stimulus of the sympathetic nervous system, unbalancing the hypothalamic-hypophilese-adrenal axis, which consequently causes sleep disturbance, or even factors that interfere with it, such as the use of alcohol and other substances (Wang et al., 2025).

On the other hand, studies prove that single people are prone to develop more sleep disorders than married people, for the reason that single people have routines that lag behind healthy habits, arousing greater risks of cardiovascular diseases and suicide (Enright et al., 1996; Nock et al., 2008). Married life, on the other hand, has been shown to encourage the excessive use of alcohol and tobacco, contributing to well-being and, consequently, to the quality of sleep (Leonard & Rothbard, 1999; Duncan, Wilkerson & England, 2006). It was from this question that Matsumoto, Uchimura, and Ishitake (2021) sought to correlate the marital status and sleep of daytime workers in Japan, where single men and women had late and irregular sleep cycles, prone to evolving to sleep disorders in relation to the married group, such parameters led the authors to understand that, having a life partner helps in health care, defining a regular routine and instituting a good sleep-wake cycle.

Regarding the Body Mass Index (BMI) of the community studied, the mean is equivalent to 26.94 kg/m2, a number that, according to the classification of the nutritional status of adults and risk of comorbidity of the Brazilian Ministry of Health, is slightly above the range considered normal, alluding to a predisposition to overweight in the group, as shown in Table 3.

Table 3 – Stratification of individuals in relation to Body Mass Index (BMI).

Classification	BMI	Risk of comorbidities	Group studied
Underweight	<18.50	Low	0
Eutrophic	18,50 – 24,99	Medium	11 (32,14%)
Overweight	25,00 – 29,99	Low elevation	13 (42,86%)
Obesity grade I	30,00 – 34,99	High	7 (21,43%)
Obesity grade II	35,00 – 39,99	Very high	1 (3,57%)
Obesity grade III	≥ 40.00	Very high	0

Source: BRAZIL. Ministry of Health (2020).

The mean BMI of the analyzed group fits the overweight classification, although it is not an excessively high body mass index, this means is an indication of concern for the health of the population studied, considering that overweight is a risk factor for several comorbidities (BVS, 2025).

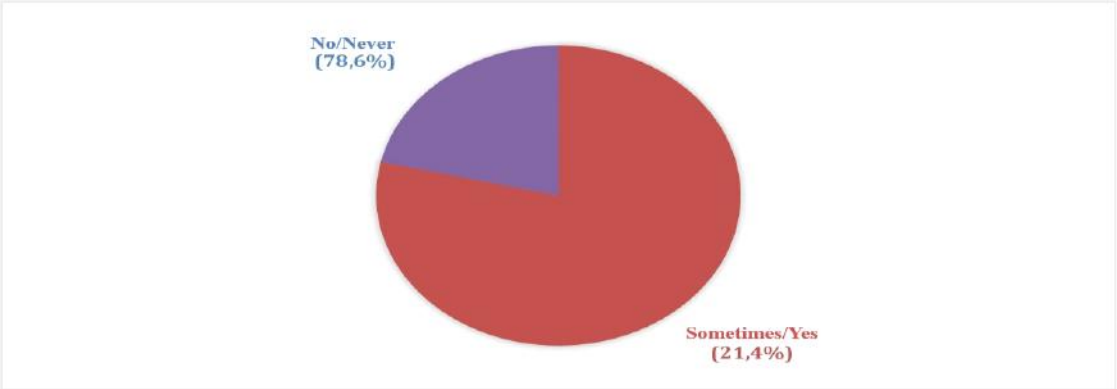
The relationship between sleep and BMI has been discussed with great emphasis globally, because, as highlighted by Struéva et al. (2013), a high BMI can negatively affect sleep quality, and, conversely, sleep deprivation can contribute to an increase in BMI (Jordaim, Destefane & Risso, 2024). The urgency of this issue is highlighted by the World Health Organization (WHO), which classifies obesity as one of the most serious health problems today. The projections are worrying: the Brazilian Association for the Study of Obesity and Metabolic Syndrome - ABESO (2023) estimates that, in 2025, 2.3 billion adults will be overweight globally, with 700 million of them classified as obese (BMI above 30).

According to Racz et al. (2018), when the amount of sleep is insufficient, it can lead to an imbalance of hormones that are related to the regulation of hunger and satiety. Chaput et al. (2023) reports that the appetite-stimulating hormone ghrelin, and the satiety hormone leptin, are affected by energy intake, sleep, and circadian rhythm in healthy adults.

Previously, there is a correlation between reduced sleep duration (less than 6 hours) and a high BMI, as well as obesity, because based on this premise, Hasler et al. (2004) conducted a prospective cohort study, investigating young adults, in which data were collected through four interviews conducted when the participants were 27, 29, 34 and 40 years old, totaling 496 individuals. The research revealed an inverse association between sleep duration and BMI in the population evaluated, where this relationship was maintained even after controlling for potential confounding variables, such as family history of body mass problems, physical activity levels, and demographic factors. Interestingly, the intensity of this association between sleep duration and obesity decreased after age 34. Additionally, there was a tendency (P = 0.08) that the average rate of change in body mass gain was negatively linked to the average rate of change in sleep duration, suggesting that, as sleep duration decreased, there was a tendency towards greater body mass gain, and vice versa.

Consequently, when asked how often university professors usually consume alcohol, 78.6% answered "sometimes" and 21.4% answered "never", this same percentage was analyzed when asked if they are smokers, where 78.6% say they are not, but 21.4% say they are (Figure 4).

Figure 4 – Patterns of alcohol and tobacco use among university professors.



Source: Authors.

According to the Health and Alcohol Information Center (CISA), alcohol has several effects on the brain that directly impact sleep regulation. Chronic use of this substance, for example, increases the signaling of the neurotransmitter GABA (gamma-aminobutyric acid) while impairing that of acetylcholine. Soon, after consumption, the nervous system can enter a state of "hyperarousal", manifesting symptoms such as anxiety, risk of seizures and insomnia.

Alcohol use disorders, including abuse and dependence, can cause significant changes in sleep. These effects vary according to the intensity of consumption and the individual's state, whether during intoxication, acute deprivation, or prolonged withdrawal. REM *(Rapid Eyes Movement*) sleep is a phase of sleep essential for mental recovery and memory consolidation, characterized by accelerated eye movements, unlike Non-REM sleep, which is understood as the stages of sleep in which the eyes do not have this rapid movement (Martinez, Latorre & Fischer, 2022).

A set of studies analyzed by Reid-Varley et al. (2020) details the different interactions between alcohol and sleep in each of these phases: 1 – acute phase of alcohol intoxication, where ease of falling asleep is one of the immediate effects, however, this rapid induction of sleep is compensated by a reduction in the deeper and more restorative stages of sleep and, after a few hours, due to a higher probability of nocturnal awakenings, these impacts of acute alcohol intoxication on the two parts of sleep, show that, in the first part, REM sleep is reduced, while in the second part, it tends to be prolonged, and the cycles of alternation between Non-REM sleep and REM sleep are less frequent after excessive alcohol consumption, which results, in total, in a decrease in the amount of REM sleep, instead of fulfilling about 6 cycles typical of a normal night, only 2 or 3 are observed after an episode of excessive alcohol intake.

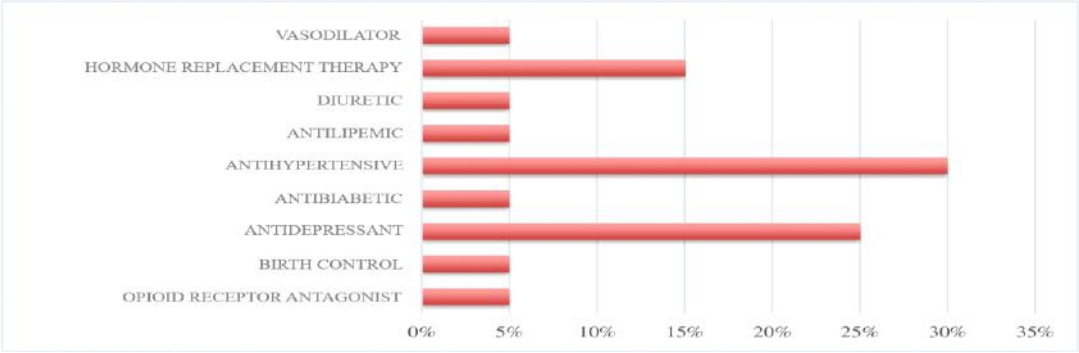
Phase 2 according to Reid-Varley et al. (2020), refers to the acute deprivation phase, which for people with alcohol dependence, sleep is compromised even during consumption deprivation, the changes tend to be opposite to those of the acute phase: there is greater difficulty in falling asleep and a predisposition to insomnia, however, a rebound of REM sleep can be observed, characterized by a normalization or even increase in the deeper stages of sleep. Phase 3 is the phase of prolonged abstinence, even after a long period without consuming alcohol (months or even years), individuals with a history of dependence may still have problems in sleep architecture when compared to people without this history, suggesting that the damage caused by alcohol to sleep can have long-term consequences. Therefore, the authors concluded that 18% of people with alcohol use disorder in North America reported having had insomnia in the six months prior to the interview (Reid-Varley et al., 2020).

Sleep can be impaired in different patterns and gradations of harmful alcohol consumption, whether in an episode of intoxication, alcohol use disorder, acute deprivation or withdrawal, as the multifaceted relationship between alcohol and sleep disorders must be considered within a comprehensive mental health framework, since both constitute a risk factor or aggravating factor for several psychiatric disorders, especially alcohol dependence itself (Martinez et al., 2022). In addition, inadequate sleep is directly linked to severe changes in sleep architecture (Wilkinson et al., 2018), which include sleep disturbance (difficulty falling asleep), insufficient sleep duration (sleep deprivation or restriction), and hypersomnia (the excessive desire and/or need to sleep), as pointed out by Hasler, Soehner, and Clark (2015).

Although the research by Reid-Varley et al. (2020) points to a significant deterioration in sleep quality as a result of alcohol intoxication, it was not observed that professors at the Universidade Paranaense de Cascavel/PR sleep poorly, or even that their sleep is impaired specifically due to alcohol consumption based on the data presented.

Regarding the group of teachers who use medication periodically, the percentage of 53.6% is observed, and for those who do not, the number is 46.4%. Among those who do, there were reports of the use of drugs belonging to the appropriate pharmaceutical classes: antidiabetics, diuretics, hormone replacements, antidepressants, antihypertensives, antilipemics, vasodilators, opioid receptor antagonists and contraceptives, which are administered in the routine of the professionals studied (Figure 5).

Figure 5 – Percentage of drug classes compounded.



Source: Authors.

The use of continuous medications is pointed out as one of the relevant factors that interfere with poor sleep quality, as this is a mechanism ordered by biological functions such as the circadian and homeostatic processes, both responsible for consolidating and regulating the sleep-wake cycle, when compromised by social, environmental and medical interventions, they tend to trigger sleep disorders and also, other health conditions (Silva, Coimbra & Carrara, 2017). An example of this is obstructive sleep apnea syndrome (OSAS), which during the waking state blockages the upper airways for a few seconds can extend for up to a minute. Due to this condition, some cases may develop secondary complications, such as hypertension (Baran et al., 2021). Or even the opposite, when hypertensive patients have this syndrome, which is a common case, in which it is estimated that 40% of hypertensive patients and 80% of resistant hypertensive patients have obstructive apnea (Hanus et al., 2015).

Regarding the therapy of antihypertensive drugs, the action of this measure can influence the general aspects of sleep, especially in OSAS, because in a situation of unregulated blood pressure with decreased genioglossal muscle activity, when regulated by drugs, there will be a stabilization of the upper airways, offering positive results for the syndrome (Krurshid et al., 2016). However, according to Garcia et al. (2021) in a pharmacoepidemiological research, they indicated that beta-blocker antihypertensives with high lipid solubility, such as metoprolol and propranolol, or those with affection for serotonergic receptors, such as pindolol, were prone to trigger nightmares if they resembled pharmacological agents restricted to pharmacodynamics such as atenolol, carvedilol and labetalol. As for diuretics, although studies have shown an improvement in the severity of sleep apnea (Zeng et al., 2022), patients have negatively reported the nocturnal use of the therapeutic drug, specifically at bedtime, due to the occurrence of nocturia, thus reducing medication adherence (Garrison et al., 2023).

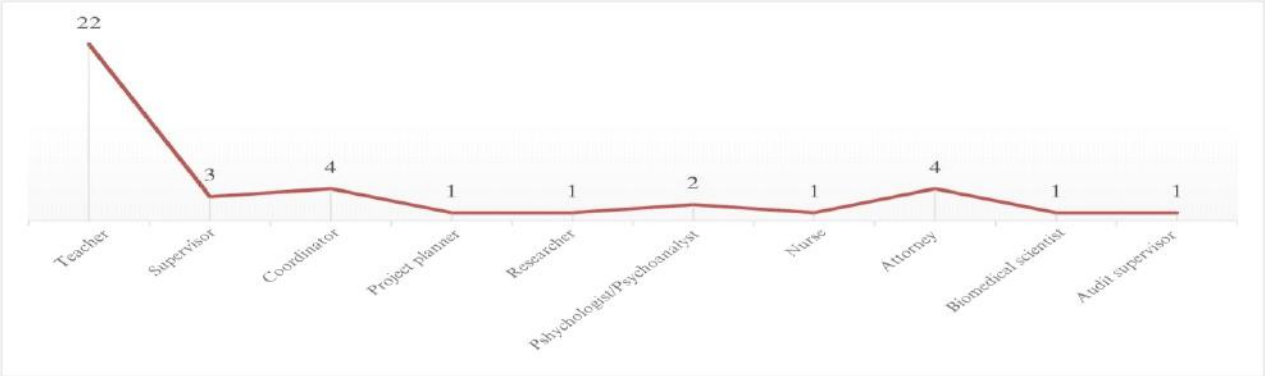
The relationship between sleep and antidepressants, the second pharmaceutical class most used by teachers, concerns substances normally administered in cases of depression and anxiety, conditions where sleep disturbance is a notorious symptom (Camacho-Artega et al., 2022). Such drugs tend to have sedative actions and cause insomnia depending on the drug, as demonstrated in a systematic review led by Zhou et al. (2023) who analyzed the dose and effect of antidepressants, ascertaining the probability of causing drowsiness and insomnia compared to placebo, where the drugs that had a sleepiness rate of 4.5% were: fluvoxamine, trazodone, mirtazapine, amitriptyline, duloxetine, escitalopram, paroxetine, sertraline, fluoxetine, venlafaxine, desvenlafaxine, and milnacipran. On the other hand, those that cause insomnia with a rate of 5.4% would be: vilazodone, desvenlafaxine, duloxetine, bupropion, venlafaxine, sertraline, citalopram, fluoxetine, paroxetine, and escitalopram.

Since there is greater use of antihypertensive drugs in the individuals studied, it is inevitable to emphasize the importance of previously investigating the sleep quality of patients with increased blood pressure in order to prescribe medications, since these aspects are closely linked to each other in human physiology (Hanus et al., 2015). Likewise, primary

health care should conceptualize this growing problem of sleep disorders and consider the impact of any drug class on the sleep-wake cycle, paying attention to their adverse effects, especially in preexisting cases of poor sleep quality (Klugherz, Mansukhani & Kolla, 2025).

Regarding the working hours, where the interviewees were able to mark various shifts, 96.4% of them worked at night, another 75% also worked in the afternoon and, finally, 64.3% also had working hours in the morning shift. In the report of the work functions they performed in the workplace, the consecutive answers that are described and presented in Figure 6 were collected: teacher, advisor, coordinator, designer, researcher, psychologist and psychoanalyst, nurse, lawyer, biomedical and audit supervisor.

Figure 6 – Labor functions of professors in the university community.



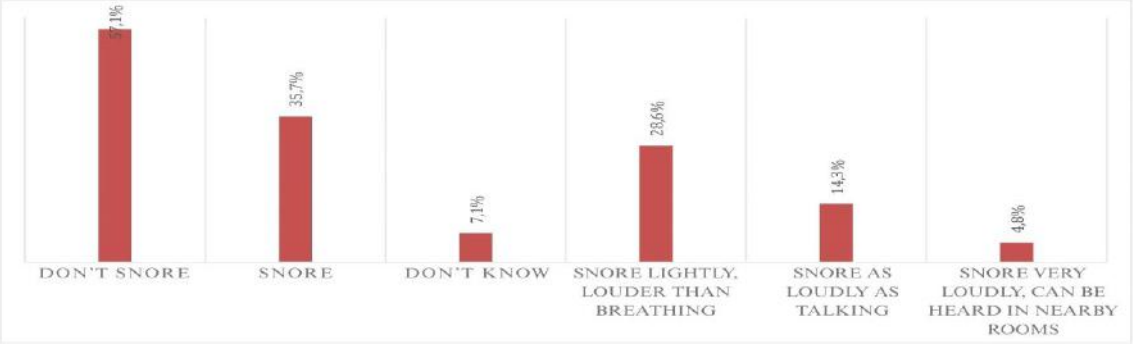
Source: Authors.

It should be noted that given the data, part of the research respondents work professionally in addition to teaching, that is, having as a starting point for this study participants who teach at night at the university, some of these, during the morning and/or afternoon work in another professional branch, confirming the fact that, when there is greater production of work, consequently there will also be an increase in the working day, which causes in prolongation, exhaustion and exhaustion of workers (Marx, 2013; Rodrigues et al., 2020).

Furthermore, as Freitas and Navarro (2019) describe, the work demands of teaching professionals become greater at every moment, in addition to the knowledge required in a certain area of knowledge in preparation for teaching, which is often based on the number of articles published, there is also the preparation of projects, reports, accountability, completion of data platforms and other variables, that directly impact the work vehemence for non-working time, thus implying the physical and mental health of teachers.

Regarding snoring, 57.1% say they do not snore, but 35.7% say they do and another 7.1% do not know how to answer. 28.6% of those who snore, 28.6% claimed that they snore "little, louder than breathing", while those who snore "as loud as talking" correspond to 14.3%. Only 4.8% fit those who snore "too loud that can be heard in nearby rooms" and 52.4% do not apply to this question (Figure 7).

Figure 7 – Pattern of the presence of snoring in university professors.



Source: Authors.

According to the Virtual Health Library – VHL (2025), an initiative in partnership with the Ministry of Health, snoring is a sound caused by the vibration of the pharyngeal tissues when air passes through this region, with a natural relaxation of this muscle that can vibrate with the passage of air, when we sleep, in which, A soft, discreet snoring is often considered normal, especially when sleeping on your back, a position that allows for relaxation and slight backward displacement of the tongue.

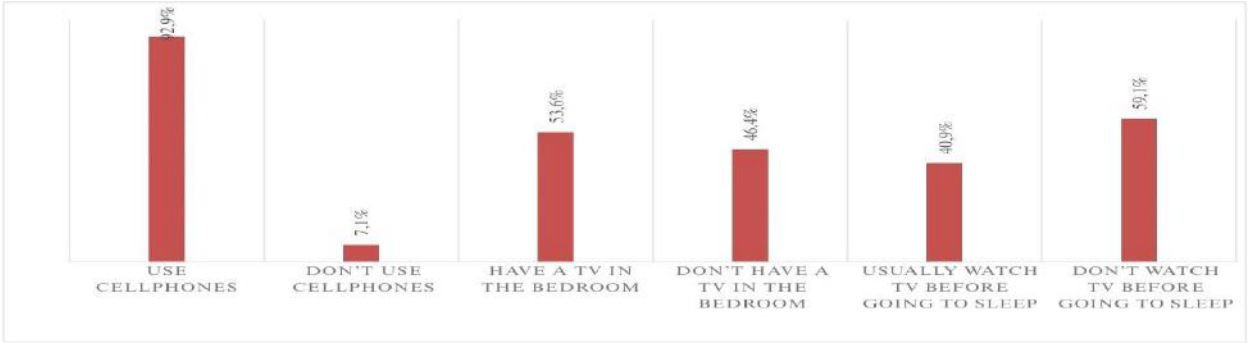
However, the predisposition to snoring is accentuated by several conditions. Overweight individuals, breathing difficulties (such as rhinitis, sinusitis, deviated nasal septum, enlarged adenoids and tonsils), gastroesophageal reflux, smoking and problems in the dental arch are more susceptible, in addition to the consumption of alcoholic beverages and the very position of sleeping on their backs can induce snoring even in those who do not snore habitually. Although often underestimated, persistent snoring is not harmless, in the long run, it can trigger a series of health problems, such as headache upon waking up, cardiac arrhythmias, poor concentration, daytime sleepiness, tiredness, and irritability, negatively impacting the patient's quality of life (VHL, 2025).

Still in relation to the information from the VHL (2025), snoring can be more than a nuisance, but a sign of more serious health problems, such as OSAS, which, as mentioned earlier, is a disease characterized by obstruction of the airway at the level of the throat during sleep, resulting in stops in breathing. OSAS is more prevalent in men and affects approximately 5% of the general population, with the incidence rising to about 30% in individuals over 50 years of age, admittedly, this is a significant risk factor for cardiovascular disease and stroke, underlining the urgency of identifying and treating it.

These disturbances caused by snoring, by fragmenting sleep and preventing the achievement of restorative stages, are directly part of the broader panorama that sleep quality is a critical factor and is linked to a wide range of health conditions that extends to diseases such as diabetes, high blood pressure, stroke, myocardial infarction and chronic kidney disease, in addition to affecting mental status, contributing to depression, cognitive impairment, and pain, from this, in a meta-analysis that reviewed 16 prospective studies, a "J"-shaped trend was observed between total sleep time and stroke risk, indicating that the lowest risk of stroke was found in individuals who slept 7 hours per night (He et al., 2017). Also, Ieto et al. (2015) point out that snoring is a prominent symptom of sleep-disordered breathing, characterized by an audible and intense noise, this sound is generated by the decrease in space in the upper airway during sleep, where narrowing results in greater resistance to airflow, which, in turn, It reduces pressure and triggers the vibration of the soft tissues of the pharyngeal and oral cavity, so these findings highlight the importance of an ideal sleep duration for the prevention of events harmful to health.

There was a considerable predominance of teachers who use cell phones before bedtime with 92.9%, with only 7.1% claiming not to use them, 53.6% having a TV in their room and 46.4% reporting not having them, among those who declare they do, 59.1% answer that they do not usually watch them before going to sleep, however, 40.9% say they do (Figure 8).

Figure 8 – Index of the use of cell phones and TV before bed.



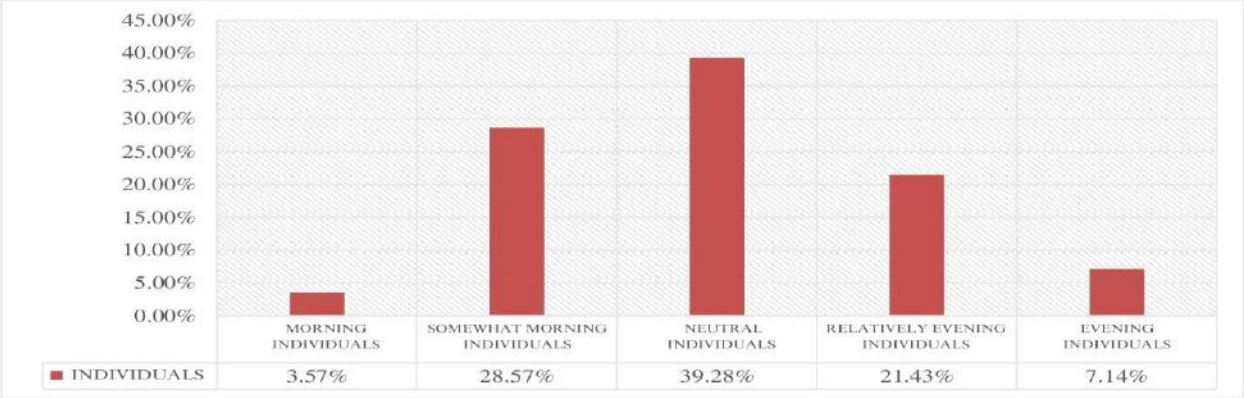
Source: Authors.

In recent years, the vast proliferation of mobile phones has radically transformed human communication, driven by rapid technological advancement (Balakrishnan & Raj 2012; Rabiu et al., 2016). The popularity of these devices is mainly due to their multifunctionality (alarm clock, music player, games, internet, SMS, video calls) and the ubiquity proposed, which allows instant connection and real-time communication at any time (Gupta, 2011; Lemola et al. 2015; Carvalho, Sette & Ferraro, 2018).

Researchers have conducted several studies on the relationship between cell phone use at bedtime and sleep quality (Adams, Daly & Williford, 2013). It is common for cell phones to be kept in bed or next to it, resulting in difficulty falling asleep due to constant awakenings due to notifications and problems turning off the device (Gupta, 2011). Even the moderate use of the device at night, before bedtime, can already compromise the quality of sleep (Kubiszewski et al., 2014). From a physiological point of view, exposure to the light emitted by cell phones is a critical factor, this light causes the suppression of melatonin (the sleep hormone) and increases the rate of stimulation in the circadian system, culminating in sleep disorders (Adams, Daly & Williford, 2013; Wood et al., 2013). Interestingly, individuals who already experience sleep problems such as insomnia may exhibit a high engagement with cell phone use before bed, perhaps as a strategy to pass the time (Adams & Kisler, 2013).

Therefore, by analyzing through the Morning-Evening Questionnaire – IMV whether teachers work better in the morning or afternoon, it was possible to ascertain that, although the target audience of the research are professionals who work at night, it is represented by 39.28% of neutral individuals, that is, according to the parameter adopted, they did not classify themselves as morning and/or afternoon. Subsequently, 28.57% classified themselves as "relatively morning" and only 3.57% as morning, and another 21.43% as "relatively afternoon" and 7.14% as definitely afternoon, as shown in Figure 9.

Figure 9 – Result of the Morning Questionnaire – Evening.

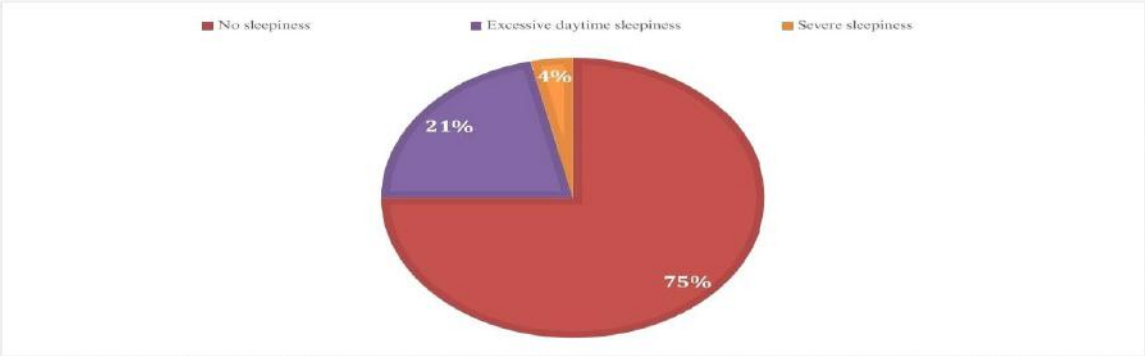


Source: Authors.

The various physiological functions in the human body are intrinsically linked to a pattern of approximately 24 hours, called circadian rhythm, where the sleep-wake cycle is a prominent example of this synchronization, in general terms, individuals exhibit distinct preferences in relation to their activity and rest schedules, which can be classified as morning, afternoon or indifferent, such inclinations are conceptualized as the chronotype, indicating the predisposition to morningness, eveningness or an intermediate profile (Adan et al., 2012; Sławińska, Stolarski & Jankowski, 2018).

However, when identifying a possible presence of daytime sleepiness among the participants based on the Epworth Sleepiness Scale (ESS), the absence of this probability was observed in the majority, with an index of 75%, but, on the other hand, 21.43% had excessive daytime sleepiness and 3.57% had severe sleepiness in agreement with the ESS scores (Figure 10).

Figure 10 – Epworth Sleepiness Scale – ESS score.



Source: Authors.

The evaluation through the Epworth Sleepiness Scale aims to assist in the diagnosis of excessive daytime sleepiness, a condition associated with chronic sleep deprivation, pharmaceutical effects, depressive disorders, narcolepsy, idiopathic hypersomnia, psychogenic hypersomnia, and obstructive sleep apnea-hypopnea syndrome (Matnei et al., 2017).

It is worth mentioning that, although the percentage is positive for the absence of daytime sleepiness of the teachers evaluated, there are still teachers who present it excessively, an aspect that resonates in the various faculties of life, especially at work, negatively impacting the work exercise, impairing, for example, memory, judgment and the aptitude of activities that

correlate in the unfolding of diseases, such as obesity, diabetes *mellitus* and cardiovascular diseases (Eanes, 2015; Silva et al., 2019).

However, when analyzing the research by Silva and Lima (2022) that had as a guiding question to describe the quality of sleep, and equally, the excessive daytime sleepiness of the teachers of the Federal Rural University of Pernambuco in the context of the COVID-19 pandemic, it was evident that, although the teachers manifested poor sleep quality with a significance index of 73%, there was no predominance of the presence of excessive daytime sleepiness (35%), due to the different demands that were made in the pandemic reality, but in contrast to this, there is the work overload increasingly imposed on teachers and little discussed, especially with regard to public health practices (Amaral, 2018).

Therefore, the adherence to preventive practices of the factors that cause damage to the health of the worker carried out by the institutions, would avoid the stimulation of such disorders discussed, having conducive times for the work and determining rest times, aiming to replace sleep, will add to the improvement of the quality of life of individuals (Souza & Passos, 2015). From this, sleep will finally be conceptualized as an indispensable part of human health, both in the physical and cognitive areas, being characterized by being an essential and obligatory physiological process (Silva et al., 2023).

4. Conclusion

In view of the above, it is concluded that, although the study group does not have negative sleep alterations and most of the teachers do not present excessive daytime sleepiness of a marked nature, despite manifesting factors that compromise the effectiveness of sleep, such as the high workload, the excessive use of electronic devices at night, overweight and the continuous consumption of medications, Social and behavioral aspects, such as marital status and various professional functions, also negatively influence sleep hygiene. The absence of more severe clinical symptoms does not rule out the existence of future risks to the sleep health of these professionals, especially if the current working conditions are maintained.

The results reinforce the need for scientific deepening on the subject, especially with regard to the consequences of disorders related to the deprivation of the sleep-wake cycle. The importance of implementing public policies and institutional interventions aimed at preventing these disorders is also highlighted, with work overload standing out as a determining factor.

Therefore, it is essential to formulate and implement integrated health promotion strategies aimed at teaching workers, including health education actions, reorganization of the workload and provision of psychosocial support. Such interventions are essential for the construction of more balanced and sustainable work environments, capable of favoring physical and mental well-being, improving sleep quality and, consequently, contributing to the improvement of the quality of life of these professionals.

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