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Review Article

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Sleep disorders in university professors: An integrative review

Alterações do sono em professores universitários: uma revisão integrativa

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Abstract

Introduction: In addition to their hour load in front of the students, university professors from various knowledge areas constantly add extra-classroom tasks that extend their working hours, multiple jobs, and execution of tasks with tight deadlines. Given the above, these professionals can present negative conditions in relation to sleep, including its deprivation and a reduction in its quality, thus impacting on their health and well-being. **Objective:** To evidence the main sleep disorders in university professors, highlighting the factors associated and the repercussions of these occurrences. **Materials and methods:** An integrative review conducted in the PubMed, Web of Science, Scopus, CINAHL and *Biblioteca Virtual em Saúde* portals, using the following descriptors *Faculty*, *Sleep Deprivation*, *Dyssomnias*, *Sleep Wake Disorders* and *Sleepiness*, in addition to the free term *Sleep Quality*, with original studies published between 2002 and 2021 in the Portuguese, English and Spanish languages. **Results:** Five studies were selected, conducted in Brazil (80.0%) and China (20.0%) between 2018 and 2021, with a cross-sectional design (100.0%) and level of evidence 4 (100.0%), which showed that sleep disorders in university professors are characterized by a reduction in subjective sleep quality and by daytime sleepiness. **Conclusions:** Aspects related to the university professors' work exerted an influence on sleep quality, such as long working hours, overwork, workaholism and high demand at work. The reduction in sleep quality and daytime sleepiness had repercussions in the perceptions of quality of life and in aspects linked to Burnout. It becomes indispensable to search for robust scientific data, widely exploring sleep disorders in university professors and monitoring their repercussions.

Keywords: faculty; sleep deprivation; dyssomnias; sleep-wake disorders; sleep quality; sleepiness.

Resumo

Introdução: Professores universitários, de diversas áreas do conhecimento, constantemente, agregam, além de sua carga horária frente ao aluno, tarefas extraclasse que alongam sua jornada laboral, múltiplos empregos e execução de tarefas em prazos reduzidos. Diante disso, esses profissionais podem apresentar quadros negativos em relação ao seu sono, incluindo sua privação e redução da sua qualidade, impactando em seu bem-estar e saúde. **Objetivo:** evidenciar as principais alterações do sono em professores universitários, salientando os fatores associados e as repercussões destas ocorrências. **Materiais e métodos:** revisão integrativa realizada nos portais *PubMed*, *Web of Science*, *Scopus*, CINAHL e Biblioteca Virtual em Saúde, utilizando-se os descritores *Faculty, Sleep Deprivation, Dyssomnias, Sleep Wake Disorders* e *Sleepiness*, além do termo livre *Sleep Quality*, com estudos originais publicados entre 2002 e 2021, nos idiomas português, inglês e espanhol. **Resultados:** foram eleitos cinco

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estudos, realizados no Brasil (80,0%) e China (20,0%), entre 2018 e 2021, com desenho transversal (100,0%), nível de evidência 4 (100,0%), os quais mostraram que as alterações do sono em professores universitários caracterizaram-se por redução da qualidade subjetiva do sono e sonolência diurna. **Conclusões:** Aspectos relacionados ao trabalho do professor universitário influenciaram na qualidade do sono, como jornadas extensas, o trabalho excessivo, *workaholism* e a alta exigência no trabalho. A redução na qualidade do sono e a sonolência diurna repercutiram nas percepções de qualidade de vida e em aspectos ligados ao *Burnout*. Torna-se imprescindível a busca por dados científicos robustos, explorando amplamente as alterações de sono em professores universitários e monitorando suas repercussões.
Palavras-chave: docentes; privação do sono; dissonias; transtornos do sono-vigília; qualidade do sono; sonolência.

Introduction

The work of a professor comprises a complex function due to its broad social importance and its formative role, as well as to the need to constantly adapt to new realities, challenges and innovations[1]. This is a profession characterized by constant emotional and mental tensions, often aggravated by adverse environmental conditions and lack of prospects for professional growth and development, in addition to personal problems[2].

Besides their hour load in front of the students, university professors constantly add extra-classroom tasks that extend their working hours, multiple jobs and execution of tasks with tight deadlines, as well as dealing with interpersonal relationships with students, colleagues and university leaders[3-4]. In addition, according to the academic activity developed, the search for scientific productivity in *stricto sensu* performance has required that the professors admit a resolute and immediate character, attentive to constant evolutions and updates, increasingly extending the working hours and generating unfavorable health scenarios[5-6].

Given the above, university professors from various knowledge areas can present negative conditions in relation to their sleep, including its deprivation and a reduction in its quality. Sleep is a reversible and recurrent biological state, in which the person presents relative immobility and loss of environmental perception. It is a highly necessary period for energy maintenance and restoration and to reorganize the neurological information, contributing to recovery of the mental resources, preparing the individual for the awake period[7].

According to the Sleep Foundation (a North American non-profit organization for research and practices in sleep health), sleep is fundamental for good health and its quality is conceptualized as "an individual's satisfaction with their sleep, integrating aspects of sleep initiation, maintenance and duration, as well as feeling refreshed upon waking up"[8]. Sleep quality impairments trigger organic responses that modify the cognitive, behavioral and psychomotor functions, as well as they can impair mood, increase stress levels, generate a sensation of tiredness and discouragement, and other conditions that compromise health and quality of life[9].

Among university professors, the reduction in sleep quality, as well as of its beneficial effects such as mental and physical recovery, exerts a direct impact on their well-being and quality of life, with the possibility of triggering work-related stress, harmful eating habits, and Burnout symptoms, a condition defined as a psychosocial syndrome that arises as a chronic response to the interpersonal stressors that occur in work situation[10]. All these factors added together can have repercussions on the professors' physical and mental health, as well as on their neurocognitive behavior, directly affecting their work performance[1,4,11,12], extremely threatening consequences that can become a public health issue.

Although there are several recent studies with these variables, it is noted that,

specifically among university professors, there is still a gap in relation to a situational diagnosis. In this context, evidencing the occurrence of sleep disorders in this population, as well as their main causes and direct and indirect repercussions, becomes extremely relevant not only for the implementation of conditions that favor the health of these workers, but also to mitigate possible consequences for professional performance. Therefore, the objective of this study was to evidence the main sleep disorders in university professors, highlighting the factors associated and the repercussions of these occurrences.

Materials and methods

Study sample and type

This is an integrative review study with the purpose of answering the following research question: "Which are the most common sleep disorders in university professors, as well as their causes and possible repercussions?". This guiding question was formulated based on the PICO strategy[13]. Consequently, the following was defined for this study: P – University professors; I – Main sleep disorders in university professors; C – It does not apply to this study, as there are no comparative processes; and O – Factors associated and repercussions of the sleep disorders in this population.

Research design

Elaboration of this study from original, observational and cross-sectional research studies followed the recommended six-stage procedure: theme identification and hypothesis selection, definition of the research strategy, data definition and collection, analysis of the data collected, interpretation and presentation of the results[14,15]. The review of the process was based on the recommendations set forth in the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) checklist[16].

The search and selection of scientific evidence was in charge of two reviewers, who worked simultaneously between June and August 2021 in the following databases: Medical Literature Analysis and Retrieval System Online (MEDLINE) via the National Library of Medicine (PubMed), Scopus, Web of Science (WoS), and CINAHL via EBSCO Host, in addition to *Biblioteca Virtual em Saúde* (BVS). The following standardized descriptors in the MeSH Terms were used: "Faculty", "Sleep Deprivation", "Dyssomnias", "Sleep Wake Disorders" and "Sleepiness", in addition to the free term "Sleep Quality", as well as their synonyms. For the advanced search corresponding to each term, the Boolean operator "OR" was used in between them, including all the synonyms. The Boolean operator "AND" was employed for the crossings between terms.

No filters were applied to identify all the available articles in the databases and reduce the risk of publication bias, except for the time restriction to the last 20 years (from 2002 to 2021). The articles were independently read and selected by two reviewers, via the Rayyan QCR[17] online selection platform, starting with the titles and followed by the abstracts and the texts. In selection of the titles, all those that included the terms "professors" or "sleep" or any related synonym were included. When applying the eligibility criteria was not enough to determine if the article would be included or not in a given stage, it was maintained to read its abstract. The last selection stage took place by reading the full texts of the articles.

Inclusion and exclusion criteria

For this review, studies conducted exclusively with university professors were included, published in the last twenty years, in English, Portuguese or Spanish, with strong evidence of poor sleep quality or other sleep disorders and their repercussions and relationships with other variables, shown by means of self-reporting instruments or through polysomnography or actigraphy. Case series and reports were excluded, as well as review studies and

congress summaries, qualitative research studies and studies which were not available in full. In addition, duplicate articles were excluded, as well as those pertaining to research clippings of the same population contained in a previously included article and studies that addressed sleep characteristics in medical residency preceptors or similar.

Quality criteria

The objective of this stage was to assess the methodological quality of the studies included and to determine to which extent they addressed the possibility of bias in their design, conduction and analysis. All the articles selected for inclusion in this review were submitted to an analysis of the methodological quality by two evaluators, making it possible to report the synthesis and interpretation of the studies' results. To such end, the "Checklist for Analytical Cross-Sectional Studies" tool was used, prepared and published by the Joanna Briggs Institute (JBI), an international research organization headquartered in the Health and Medical Sciences School of the University of Adelaide, Australia. This is a checklist with eight items, whose possible answers are "yes", "no", "unclear" or "not applicable".[18] For this review, only the articles with "yes" answers for at least five items were included (Chart 1).

Chart 1 - Assessment of the methodological quality according to the JBI checklist[18] for cross-sectional studies. Campinas, São Paulo, Brazil – 2021. (n = 5)

JBI checklist / Studies included	Cardoso, 2020	Sousa, 2018	Amaro, 2018	Wu, 2020	Freitas, 2021
1. Were the criteria for inclusion in the sample clearly defined?	Yes	Yes	Yes	Yes	Yes
2. Were the study subjects and the setting described in detail?	Yes	Yes	Yes	Yes	Yes
3. Was exposure measured in a valid and reliable way?	Yes	Yes	Yes	Yes	Yes
4. Were objective, standard criteria used for measurement of the condition?	Yes	Yes	Yes	Yes	Yes
5. Were confounding factors identified?	Yes	Yes	Yes	Yes	Unclear
6. Were strategies to deal with confounding factors stated?	Yes	No	No	Unclear	Unclear
7. Were the results measured in a valid and reliable manner?	Yes	Yes	Yes	Yes	Yes
8. Was appropriate statistical analysis used?	Yes	Yes	Unclear	Yes	Yes

Source: Prepared by the authors

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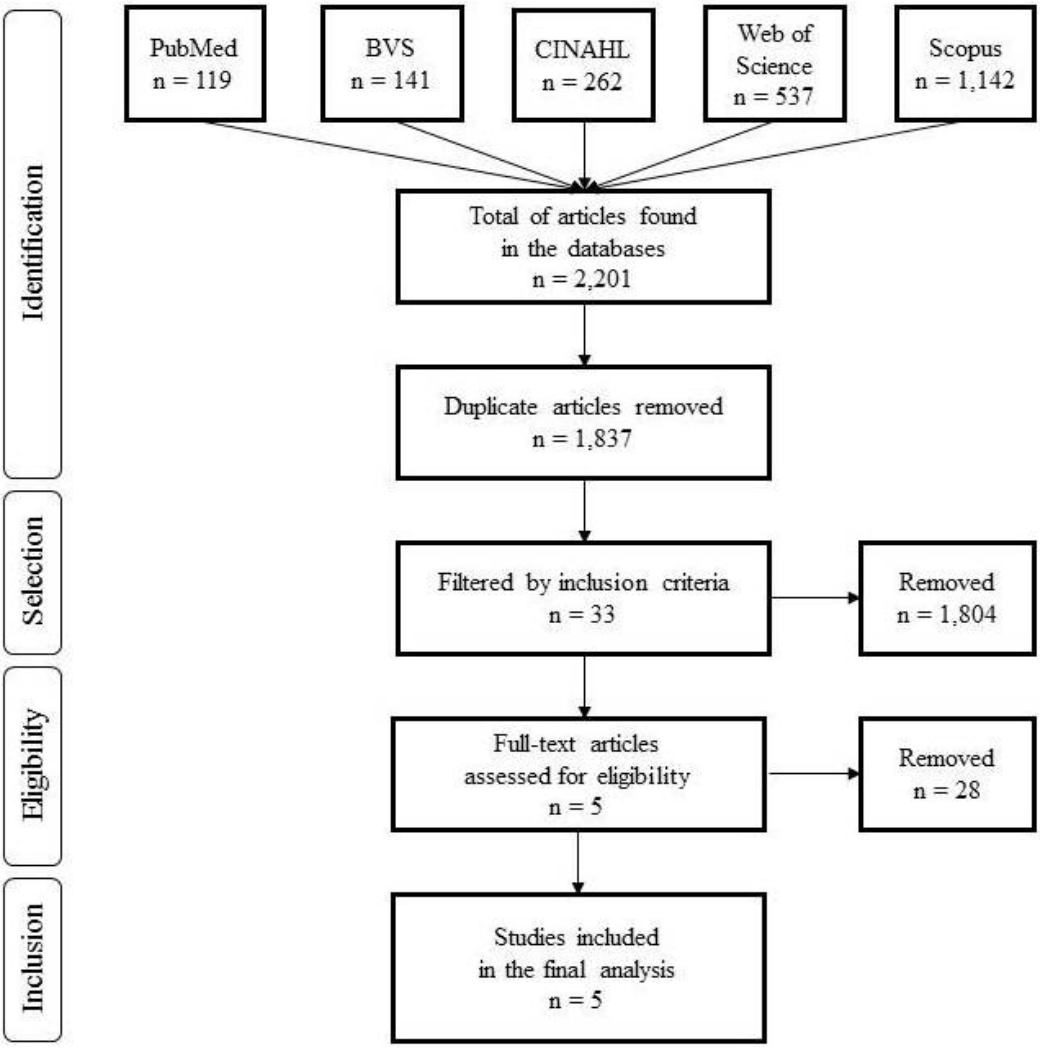
Procedures

The data from the studies included in the sample were extracted with the aid of a previously designed spreadsheet containing the following information: authorship, year of publication, data collection period, study locus, sample (n), instruments for the assessment of sleep disorders, other variables studied and outcome. As this is an integrative review with search for diverse scientific evidence published in databases, it was not necessary that any Research ethics Committee approved the study project.

A total of 2,201 articles were found for analysis. The strategy used for selection was reading the titles and, according to them, analyzing the abstracts from the entire sample, taking into account the inclusion and exclusion criteria. Thus, of the total of 2,201 articles found, the final sample consisted of five articles. Appendix 1 presents the search strategy in the databases and Figure 1 shows the steps for selection, adapted from the PRISMA Statement[16].

Figure 1: Flowchart for the selection process of the articles. Campinas, São Paulo, Brazil – 2021.



Source: Own elaboration, adapted from the PRISMA Statement[14].

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After selection of the final sample, the level of evidence was classified based on the research design of each article. The stratification used presents six classification levels: at level 1, results from a meta-analysis of multiple controlled and randomized clinical studies; at level 2, diverse evidence resulting from individual studies with an experimental design; at level 3, results of quasi-experimental studies; at level 4, diverse evidence of descriptive studies, including cross-sectional studies or with a qualitative approach; at level 5, case or experience reports; and, at level 6, diverse evidence based on experts' opinions[19].

Results

Of the five articles selected, three (60.0%) were published in Portuguese and two (40.0%) in English; there were no articles written in Spanish. Regarding the geographical origin of the studies, four (80.0%) were conducted in Brazil and only one (20.0%) in China. It was noticed that the journals that contributed publications were specialized in the Nursing (40.0%), Psychiatry (40.0%) and Occupational Health (20.0%) areas. Although the time frame has added the publications from the last 20 years, the recent nature of the studies eligible for this review is noted, with two published in 2018 (40.0%), two in 2020 (40.0%), and one in 2021 (20%).

Table 1 presents the design of the studies, as well as their classification regarding their level of evidence. As the sample only consisted of cross-sectional studies, all were classified as with level of evidence 4.[19]

Table 1: Design and level of evidence[19] of the studies that comprised this review. Campinas, São Paulo, Brazil – 2021. (n = 5)

Study	Design	Level of Evidence
Cardoso, 2020	Cross-sectional	4
Sousa, 2018	Cross-sectional	4
Amaro, 2018	Observational and cross-sectional	4
Wu, 2020	Cross-sectional	4
Freitas, 2021	Epidemiological, cross-sectional and exploratory	4

Source: Prepared by the authors.

For the analysis of the aspects related to sleep, three studies (60.0%)[20,21,23] resorted to the Pittsburgh Sleep Quality Index (PSQI), whereas the other two applied the Epworth Sleepiness Scale (ESS) (20.0%)[22] and the Mini-Sleep Questionnaire (MSQ) (20.0%)[24], respectively. In addition, all the studies related the sleep data to independent variables and to demographic and occupational data, according to their objectives. The independent variables were workaholism[20], stress[21], quality of life[22], Burnout and genomic polymorphism.[23]

Chart 2 offers a description of the titles and authorship, as well as the year of publication, the objectives and a synthesis of the results of each of the studies selected for this review.

Chart 2: Description of the studies selected for this review, according to their title, authorship, year of publication, population under study, objectives and synthesis of the conclusions. Campinas, São Paulo, Brazil – 2021. (n = 5)

Title	First Author (Year)	Population	Objectives	Conclusion
Qualidade do sono e *workaholism* em docentes de pós-graduação stricto sensu[17]	Mariana Guimarães Cardoso (2020)	196 *stricto sensu* graduate level professors	To investigate the association between sleep quality and workaholism in *stricto sensu* graduate level professors	High work demands can be associated with poor sleep quality, as it was verified that workaholics and work overloaded professors present increased chances of poor sleep quality, even after adjustments. Subjective sleep quality, as well as sleep latency, sleep duration, sleep disorders and daytime sleepiness, was associated with workaholism, overwork and compulsive work.
Occupational stress and sleep quality in professors of the health area[18]	Aline Rodrigues de Sousa (2018)	19 university professors from the health area	To analyze the relationship between occupational stress and sleep quality in professors from the health area	There was predominance of low stress level and poor sleep quality, with daytime sleepiness, sleep disorders and sleep duration as the factors that most contributed to poor sleep quality among the professors from the health area. The reduction in sleep quality related to the use of sleep medications resulted in higher occupational stress levels among the professors.
Sonolência diurna excessiva e qualidade de vida relacionada à saúde dos professores universitários[19]	João Marcelo Ramachiotti Soares Amaro (2018)	270 university professors	To analyze the influence of daytime sleepiness on the professors' quality of life	Statistically significant associations were found for excessive daytime sleepiness with lower quality of life scores in all the domains investigated. In addition to that, it is emphasized that one out of three professors were identified as with excessive daytime sleepiness.
Burnout in university faculty: an interaction between subjective sleep quality and the OXTR rs2268498 polymorphism[20]	Jiao Wu (2020)	575 university professors for the Burnout and Sleep analysis, of which 376 were analyzed in relation to the gene	To explore the effects of sleep quality, OXTR rs2268498 functional polymorphism, and their interactions with Burnout	OXTR rs2268498 polymorphism and sleep quality interacted to affect the emotional exhaustion and cynicism dimensions of Burnout, suggesting a higher level of emotional exhaustion and cynicism in the C allele carriers than in the T homozygotes under poor sleep quality conditions.

Qualidade do sono e fatores associados entre docentes de educação superior[21]	Aline Macedo Carvalho Freitas (2021)	408 Higher Education professors	To estimate the prevalence and the factors associated to poor sleep quality among Higher Education professors from a public university in Bahia	There was a high proportion of poor sleep quality among the professors. Absence and/or irregularity of leisure activities, sleeping six hours or less, complaints of musculoskeletal pain and headache, and a high-demand work experience are factors associated with the higher prevalence of poor sleep quality among the professors.

Source: Prepared by the authors.

Discussion

The current study allowed evidencing the occurrence of sleep disorders in university professors from various areas, as well as to observe the different causes and repercussions of these disorders on their daily lives.

In the first analysis, the scarcity of studies at the global level in relation to this problem was noticed. Even when the time frame was expanded and searching in various databases, with the official descriptors and their synonyms, only five studies were eligible for this review. This is partially due to the fact that many studies emerged in relation to High School or Elementary School teachers and that others were focused on the students. In addition to that, some studies that were excluded in the last analysis presented basic statistical errors or low methodological rigor.

In addition, there was lack of studies with higher levels of evidence that could contribute to the understanding of this problem, which reflects an important finding of the fragility and gaps in this aspect of workers' health.

In this review there was predominance of studies carried out in Brazil[20-22,24] and with university professors from various knowledge areas[22-24], including a specific study with professors working in *stricto sensu*[20] training and another with only professors in the health area[21].

Three studies[20,21,23] used PSQI to assess subjective sleep quality. This is an instrument that assesses sleep quality by means of a standardized questionnaire, in one-month time interval. PSQI allows analyzing the sleep patterns and quantifies subjective sleep quality and sleep disorder episodes, containing 19 questions grouped into seven components. Scores lower than or equal to five indicate good sleep quality and those above five signal poor sleep quality.[25]

One study[22] used the Epworth Sleepiness Scale (ESS) to assess daytime sleepiness, which is currently one of the most frequent sleep disorders. This is a self-administered questionnaire that assesses the probability of falling asleep in eight situations involving daily activities, some of them highly soporific. The global score varies from 0 to 24, where scores above ten suggest the diagnoses of excessive daytime sleepiness.[26]

Another study[24] assessed the sleep data by means of the Mini-Sleep Questionnaire (MSQ), consisting of ten questions, where higher scores characterize worse sleep quality. The total sum of the scores is divided into four levels: from ten to 24 points indicate good sleep; from 25 to 27 points, slightly disturbed sleep; from 28 to 30 points, moderately disturbed sleep; and ≥ 31 points, very disturbed sleep.[27]

Sleep disorders can manifest in diversified ways, as they represent a multifactorial condition. In a Brazilian study, conducted in Goiás[21], daytime sleepiness, sleep disorders, and sleep duration were the factors that most contributed to the reduction in subjective sleep quality in professors from the health area, which predominated in 57.9% of the participants. Daytime sleepiness was

prevalent in 35.2% of the participants in another Brazilian study conducted in Rio Grande do Sul[22].

There was also a 65.8% prevalence of poor sleep quality in professors working in *stricto sensu* in the Brazilian South region[20] and in 61.3% of the professors participating in a Brazilian study conducted in Bahia.[24] In this latter study, difficulty falling asleep, waking up tired and waking up with a headache were the main manifestations of poor sleep quality.

The study conducted in Beijing, China,[23] was the only one in which there was prevalence of poor sleep quality, in approximately one fourth of the population under study. In this study there were also no significant differences when comparing sleep quality between sociodemographic and occupational data, such as gender, age, schooling level and job position in the university, although proportionally more Bachelor's degree holders presented poorer sleep quality than professors with *stricto sensu* training. These findings are corroborated by the Brazilian study from Rio Grande do Sul[22], in which no occupational or sociodemographic characteristics exerted a significant influence on excessive daytime sleepiness.

However, *stricto sensu*[20] graduate professors showed that the negative influence of the pace and intensity of work, high overwork, workaholism and excessive and compulsive work contributed to the perception of poor sleep quality. In this specific study, it was attributed that the pressure for scientific publications, the productivity scholarship and the development of multiple concomitant projects play a fundamental role in the characteristics of workaholism, which was a significant factor for the reduction of sleep quality in this population[20]. Moreover, in addition to subjective sleep quality, the most affected components related to sleep quality in this population were sleep latency, sleep duration, sleep disorders and daytime sleepiness, as they were significantly associated with overwork[20].

Sleep quality was also impaired in university professors from the study conducted in Bahia[24], in which the authors sought to relate it to occupational aspects in the demand-control model. In this study, the professors who had more than one professional contract presented lower sleep quality, as well as those who had irregular or insufficient time for leisure, passive or high-demand work and those who slept six hours or less. In addition to that, physical aspects such as back pain or musculoskeletal complaints and headache were significantly associated with poor sleep quality[24]. In this study, applying the evaluation of the work perception by the demand-control model makes the evaluation more robust since, as cited by the authors, high-demand work is the combination of high demand and low control at work, considered a model that generates high professional wear out[28].

With this, it is possible to interpret that both workaholism and its corresponding aspects[20], as well as the high professional wear out determined by high-demand work[24], can lead to impairments in sleep quality and its components in university professors.

Daytime sleepiness was associated with a reduction in the university professors' quality of life, as well as with a reduction in all of its domains in another study from Rio Grande do Sul[23]. The physiological and behavioral aspects related to quality of life can be affected by sleep disorders due to certain homeostatic, immunological, adaptive and mental changes that are regulated by adequate sleep[23]. In this study, this indicated to what extent the reduction in the aspects of good sleep quality can affect the university professors' quality of life.

Work-related stress, as well as its influence on the reduction of sleep quality, was evaluated in the Goiás study[21], although low stress levels prevailed in this population and there was no statistical significance in the association of these variables, except for the use of sleep

medications. The professors with higher stress levels at work presented worse sleep quality in relation to the need to use sleep medications. Even so, the correlation was of moderate intensity.[21]

In the Chinese study[23], the authors sought to associate subjective sleep quality and the OXTR rs2268498 gene polymorphism in the occurrence of Burnout Syndrome, seeking to explain potential genetic and neuroendocrine correlations of this syndrome. OXTR is an oxytocin-receptor gene, a widely accepted mediator in cognition and social behavior regulation. rs2268498 polymorphism is a functional polymorphism of the OXTR gene, closely associated with social functioning. In the first stage of this study, there was a positive association between subjective sleep quality and emotional exhaustion and cynicism among the university professors, which shows the influence of sleep quality on the occurrence of some aspects inherent to Burnout. In the genomic analysis, the C allele of OXTR rs2268498 polymorphism modulated the influence of sleep quality on the occurrence of Burnout[23]. However, the authors of this research consider it as a pilot study and, in the searches for this review, there were no other articles to establish a comparison. Even so, it is possible to infer that sleep quality exerted an impact on the occurrence of Burnout symptoms in this population.

The studies for this review presented various limitations, initially due to the fact that they were all cross-sectional, that is, a methodological design in which the outcomes and exposures are evaluated simultaneously, generating level of evidence 4 (low)[19]. In addition to that, the sleep quality associations were performed with various independent variables, which precluded a deeper comparison of the diverse evidence in this review.

Individually, the Goiás study[21] is limited due to the reduced sample evaluated, and it uses a less widespread instrument for the analysis of sleep quality (MSQ), when most studies of this nature are based on PSQI as it a more complete instrument, contemplating several interconnected elements about the sleep-wake process.

For being a pilot study, the Chinese study[23] contributes few comparisons and assertions specifically referring to university professors and, although the sampling is representative, this study only focused on a single university in a single geographic location, which precludes further generalized inferences about the genetic aspects.

All the studies indicated the need for future research with more robust methodological designs, such as objective sleep analysis through polysomnography or actigraphy, experimental and prospective research studies, in order to obtain more conclusive results and provide the development of more assertive strategies for sleep health care in university professors.

Conclusion

It is concluded that the sleep disorders in university professors were especially characterized by a reduction in subjective sleep quality and by daytime sleepiness. Subjective sleep quality can also be characterized by the difficulty falling asleep, tiredness when waking up and reduction in sleep duration. Several aspects related to the university professors' work exerted an influence on sleep quality, such as long working hours, overwork, workaholism and high demand at work. In addition to that, the reduction in sleep quality and daytime sleepiness had repercussions in the perceptions of quality of life and in aspects linked to Burnout.

This review also evidenced that there is a significant scarcity of studies considering the sleep health aspects of university professors since, even with a 20-year time frame, few studies were found as eligible within the criteria established in this study. Therefore, it becomes indispensable to search for robust scientific data, broadly exploring sleep disorders in university

professors and monitoring their repercussions, as it is only in this way that it will be possible to establish health promotion measures within the scope of the teaching work.

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APPENDIX 1

Appendix 1: Search strategy in the databases, according to the DeCS/MeSH descriptors. Campinas, São Paulo, Brazil – 2021.

Database	Descriptor
Scopus, WoS, PubMed (MedLine), BVS	"Faculty" OR "University Professor" AND "Sleep Deprivation" OR "Inadequate Sleep" OR "Insufficient Sleep" OR "Insufficient Sleep Syndrome" OR "REM Sleep Deprivation" OR "Sleep Debit" OR "Sleep Fragmentation" OR "Sleep Insufficiency"
	"Faculty" OR "University Professor" AND "Sleep" OR "Sleep Habits" OR "Sleeping Habit" OR "Sleeping Habits"
	"Faculty" OR "University Professor" AND "Dyssomnias" OR "Adjustment Sleep Disorder" OR "Environmental Sleep Disorder" OR "Limit-Setting Sleep Disorder" OR "Nocturnal Eating-Drinking Syndrome" OR "Sleep Disorder, Adjustment" OR "Sleep Disorder, Environmental" OR "Sleep Disorder, Limit-Setting" OR "Sleep Disorders, Extrinsic"
	"Faculty" OR "University Professor" AND "Sleep Wake Disorders" OR "Long Sleeper Syndrome" OR "Short Sleep Phenotype" OR "Short Sleeper Syndrome" OR "Sleep Disorders" OR "Sleep-Related Neurogenic Tachypnea" OR "Subwakefullness Syndrome"
	"Faculty" OR "University Professor" AND "Sleep Quality"
	"Faculty" OR "University Professor" AND "Sleepiness" OR "Somnolence"
CINAHL (EBSCO Host)	"Faculty" AND "Sleep Deprivation"

	"Faculty" AND "Sleep"
	"Faculty" AND "Dyssomnias"
	"Faculty" AND “Sleep Wake Disorders”
	"Faculty" AND "Sleep Quality"
	"Faculty" AND "Sleepiness"

WoS: Web Of Science; BVS: *Biblioteca Virtual em Saúde*
Source: Prepared by the authors.

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