The quality of sleep of nursing professionals and the Covid-19 pandemic

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Mauricio Picoli
Porto Alegre – RS
Orcid:https://orcid.org/0000-0001-5606-2022

Giane Alves Santos
Porto Alegre – RS
Orcid: https://orcid.org/0009-0004-4242-9363

Elisiane de Oliveira Machado
Porto Alegre – RS
Orcid: https://orcid.org/0009-0002-9227-1213

Simone Thais vizini
Porto Alegre – RS
Orcid: https://orcid.org/0000-0002-4929-1406

Fabio Silva da Rosa
Porto Alegre – RS
Orcid: https://orcid.org/0000-0001-5608-714X

Suimara Santos
Porto Alegre – RS
Orcid: https://orcid.org/0000-0002-8739-4385

Maicon Daniel Chassot
Porto Alegre – RS
Orcid: https://orcid.org/0000-0001-7017-6982

Rejane Silveira de Campos
Porto Alegre - RS-
Orcid: https://orcid.org/0009-0008-0986-1612

Vanessa Frighetto Bonatto
Orcid: https://orcid.org/0000-0002-1614-774X

ABSTRACT
Objective: to compare the quality of sleep of nursing professionals who worked in an adult intensive care unit with nursing professionals who worked in inpatient units during the Covid-19 pandemic. Method: This is a cross-sectional study. The selection of participants occurred intentionally using the snow ball methodology. The study included 27 participants, nurses and nursing technicians who worked in adult intensive care or adult hospitalization units caring for patients affected by Covid-19 and excluded professionals who regularly use sleep-inducing medications prior to the Covid-19 pandemic. Covid-19; or Individuals with sleep apnea. Sleep quality was assessed using the Pittsburgh Sleep Quality Index (IQSP) instrument. The independent variables were classified as sociodemographic, work situations, lifestyle habits, nutritional status and presence of comorbidities. The analysis was carried out using descriptive and inferential statistics using SPSS v25.0 software. Data normality was tested using the Shapiro-Wilk test. Results: The sample of the present study was composed of men (22.4%) and women (77.8%) with an average age of 34.2 (±6.2) years. No significant correlations were found between the Sleep Quality Index and the analyzed variables. However, when analyzing whether there was any correlation between the questionnaire score and some continuous variables, such as the participants' weight, a moderate correlation was observed between the questionnaire score and the participants' weight r =0.469 p = 0.025. Conclusion: Despite not demonstrating statistical significance for the variables studied, the study considers the relationship between sleep quality and obesity, demonstrating statistical significance and corroborating the scientific literature.

Keywords: Nursing, Sleep-Wake Disorder, Stress, Coronavirus.

1 INTRODUCTION

The year 2020 was marked by the pandemic caused by the new coronavirus, COVID-19, a respiratory disease that first appeared in China and quickly spread to all continents. Considered a pandemic due to its high contagion, at the beginning of 2020, according to the World Health

Organization (WHO), it caused more than 4,602,882 million deaths worldwide. Brazil is one of the countries hardest hit by COVID-19, reaching 610,000 deaths in November 2021, and has only seen a significant decrease in the mortality rate after vaccination coverage with the various vaccines that have been developed, in addition to protective measures such as the use of masks, social distancing and hand hygiene with alcohol gel (WHO, 2021; PAHO 2021).

The high rate of infected patients has overloaded health systems around the world, as no country was prepared to handle a large number of patients with severe acute respiratory syndrome, causing overcrowding in hospitals and the need to increase the number of beds in intensive care units (ICUs), the appropriate place for severe cases. However, in a short time, in some regions where the contagion rate was very high, there was no longer enough physical structure, supplies and equipment such as mechanical ventilators for all patients, so the possibility of treatment and survival was limited to those patients who could access institutions that were minimally prepared to offer care (MARMELSTEIN; MOROZOWSKI, 2020).

On the front line in the fight against the COVID-19 pandemic, health professionals around the world have faced and still face a battle, carrying out their care activities with long working hours, high workloads generating overload that leads to tiredness, difficulty in dealing with the increase in cases and stress-causing concerns. (HORTA, et al. 2021). Nursing makes up the largest number of the health workforce and represents 59% of the professionals within care, which also generates the largest number of professionals affected by the pandemic. A study of nursing professionals in the city of Wuhan in China found that they showed signs and symptoms of stress, depression, anxiety and insomnia, as well as the fear of contracting the virus, becoming ill or contaminating their families (SOUZA; MARCHIORI; DIAZ, 2020; HORTA et al. 2021).

The impact caused by the pandemic reflects not only on professional performance, but also on their daily lives, the quality of sleep has been extremely impaired and mental health is intrinsically related. Sleep deficiency affects both physical and mental health, which in the long term can cause irreversible damage such as: changes in mood and emotions, cardiovascular, metabolic and immune functions (WU; WEI, 2020).

Nursing professionals work long hours every day, often in more than one shift, followed by exhausting activities that cause emotional strain. Night time is the period that most affects sleep quality, as it requires adapting to the period that would be ideal for effective sleep (SILVA et al. 2019).

In a study carried out by Simões and Bianchi (2016) with 47 nursing technicians, it was found that 70.2% had symptoms of anxiety, stress, panic and difficulty concentrating and that among these professionals, 74.5% manifested poor sleep quality due to the conditions and influence of nursing work. A study carried out in Wuhan with frontline professionals, many professionals reported difficulty

both in starting and maintaining sleep, triggering nightmares sometimes related to anxiety and depression caused by the coronavirus (TU et al., 2020).

Given the context presented, the question arises: Did nursing professionals who worked in an adult intensive care unit compared to nursing professionals in inpatient units experience changes in sleep quality during the Covid-19 pandemic?

2 OBJECTIVE

To compare the sleep quality of nursing professionals who worked in adult intensive care units with nursing professionals who worked in hospitalization units during the Covid-19 pandemic and to correlate sociodemographic data, work situations, lifestyle habits, nutritional status and comorbidities with sleep quality.

3 METHOD

This is a cross-sectional study. Quantitative research starts by defining the problem and selecting the concepts that will be focused on in order to arrive at a solution. It gathers empirical data that has its roots in objective reality and is grouped by means of the senses rather than personal beliefs or hunches (POLIT; BECK, 2011).

Participants were selected intentionally using the snowball methodology, where initial participants refer new participants, who in turn refer other new participants, and so on until the expected number of participants is reached. The "snowball" technique is a form of non-probability sampling used in social research, in which the initial participants in a study indicate new participants who, in turn, indicate other participants and so on until the proposed objective is reached, i.e. the saturation point (APPOLINÁRIO, 2012).

A total of 27 participants were included in the study according to the inclusion criteria: a) nurses and nursing technicians who worked in adult intensive care or adult inpatient units caring for patients affected by Covid-19 and the exclusion criteria: a) professionals who regularly used sleep-inducing medication prior to the Covid-19 pandemic; b) individuals with sleep apnea. These exclusion criteria were used because it was understood that these professionals already had disorders in the pre-pandemic period that could alter the quality of their sleep.

Data was collected by sending out the access link to the questionnaire. We chose to use an online questionnaire due to the restrictive effects of the pandemic and the practicality of including participants in the snowball method. The questionnaire took an average of 30 minutes to complete, bearing in mind that the participants are health professionals who use digital media and are familiar with this technology.

Sleep quality was assessed using the Pittsburgh Sleep Quality Index (PSQI). The independent variables were classified as sociodemographic (age, gender, self-reported skin color), work situation (profession, sector, shift, number of jobs, total weekly workload, total monthly income), lifestyle habits (smoking; alcohol consumption; physical activity), nutritional status (body mass index) and presence of comorbidities. All the information was collected through the participant's self-report.

Sleep quality was assessed using the Pittsburgh Sleep Quality Index (IQSP), validated in Brazil. This instrument consists of 19 self-reported items and five items directed at the room attendant, arranged into seven domains: (1) subjective sleep quality; (2) sleep latency; (3) sleep duration; (4) habitual sleep efficiency; (5) sleep changes; (6) use of sleep medication; and (7) daytime sleep dysfunction (BERTOLAZI, et al. 2011).

Each item on the IQSP was measured on a four-point Likert scale, with levels ranging from zero (no difficulty) to three (severe difficulty). The overall score of the instrument is obtained from the sum of the scores of the seven domains and ranges from 0 (zero) to 20 points, so that higher total scores indicate poorer sleep quality. The result can be classified as: good sleep quality (from 0 to 5), poor quality (> 5). (BERTOLAZI, et al. 2011).

The analysis was carried out using descriptive and inferential statistics using SPSS v25.0 software. The normality of the data was tested using the Shapiro-Wilk test. Descriptive statistics were used to present the sociodemographic characteristics of the participants and the percentiles of responses for each question in the questionnaire used. The inferential analysis consisted of Spearman's correlation test to correlate the Sleep Quality Index with the participants' sociodemographic issues. In addition, an independent Student's t-test was used to compare the sleep quality of the participants who worked in the Intensive Care Unit and those who worked in the Inpatient Unit. The significance level adopted was 0.05. If correlations were identified, they were classified as very low (between 0.0 and 0.1), low (between 0.1 and 0.3), moderate (between 0.3 and 0.5), high (between 0.5 and 0.7), very high (between 0.7 and 0.9) and practically perfect (between 0.9 and 1.0).

The research took place after the project was approved by the Ethics and Research Committee of the University of Vale do Rio dos Sinos and followed the norms and guidelines according to Resolution 466/2012 of the National Health Council, which covers research carried out with human beings, while respecting the complementary norms of CNS Resolution No. 510/2016 (BRASIL, 2013; CNS, 2016).

4 RESULTS

The sample in this study was made up of men (22.4%) and women (77.8%) with an average age of 34.2 (±6.2) years. Of these, 61.1% declared themselves white, 16.7% declared themselves black and 22.2% declared themselves brown. It was also observed that 61.1% of the study sample was made

up of nursing technicians and 38.9% of nurses. According to the survey, the average number of hours per week worked by the participants was 45.6 (±17.9) hours and 55.6% of the participants also had more than one job, while only 44.4% worked in just one place.

When comparing the Sleep Quality Index of the professionals who worked in the Intensive Care Unit with the professionals who worked in the Inpatient sector, no significant difference was identified (T= -0.047, p= 0.963).

Table 1 shows the results of the correlations between the sleep quality index and the other questions in this questionnaire. No significant correlations were found between the Sleep Quality Index and the variables analyzed. However, when we analyzed whether there was any correlation between the questionnaire score and some continuous variables, such as the participants' weight, we observed a moderate correlation between the questionnaire score and the participants' weight r =0.469 p = 0.025.

Table 1. Correlation between the sleep quality index and the questions addressed in the questionnaire.

Research questions	**Sleep quality index (n=13)**	
	rho	p
Were you using sleep medication before the pandemic?	0,170	0,251
Were you diagnosed with sleep apnea before the pandemic?	0,217	0,437
What's your gender?	-0,374	0,063
What is your self-reported skin color?	0,186	0,230
What is your profession?	0,345	0,080
Have you worked more than once during the pandemic?	0,339	0,085
Total number of hours worked per week (if there is more than one employment relationship, add up the weekly hours)?	0,012	0,481
What is your work unit?	0,498	0,059
What is your monthly income?	0,386	0,057
How many minutes a week do you exercise?	-0,115	0,324
Are you a smoker?	-0,199	0,214
Do you think you consumed too much alcohol during the week?	-0,055	0,414
During the pandemic, did you start using sleep medication?	0,017	0,473
Are you being treated for any chronic illnesses?	0,027	0,457

5 DISCUSSION

Sleep is an important part of the daily cycle for all individuals. Sleep is essential for numerous functions in the body, one of the main ones being recovery from the costs incurred while awake. Sleep has several phases and each one has an important role to play in maintaining homeostasis, memory, recovering the body, strengthening the immune system and preventing disease. Sleeping well and having adequate sleep is essential for quality of life (KRYGUER M., AVIDAN A., BERRY R., 2015).

Given how important and significant sleep is, an adult needs at least 7 to 9 hours of good, constant sleep a day. Among the habits that help with sleep are: a suitable and favorable environment, staying relaxed before going to bed, avoiding heavy foods, keeping a regular schedule, avoiding the use of substances that interfere with sleep, and once these habits are maintained, good quality sleep can be maintained (KRYGUER M., AVIDAN A., BERRY R., 2015).

Poor sleep quality is highly related to overweight and anxiety, which becomes a trigger for binge eating. In the current study carried out with people with an average BMI of 33.71 kg/m², it was found that 96% had a moderate level of anxiety according to the IDATE classification and 49.81% had poor sleep quality according to the PSQI index (FUSCO et al., 2020).

The pandemic has further accentuated vulnerable groups in mental health. Reports from the population of the predominance of anguish, insomnia, anger, stress, fear, irritability and a sense of powerlessness have been recorded by various surveys, which are linked to various disorders that could not be treated due to isolation and social exclusion. The lack of government strategies and policies are pointed out as problems, as well as the lack of mental health care (PAVANI et al., 2021).

Nursing professionals working in the pandemic are the vast majority of the health workforce, are responsible for most tasks and are directly in contact with patients with suspected Covid (SILVA et al., 2019).

The stress load manifested at the beginning of the pandemic was high due to factors that influenced both professional and social life, issues such as: professional qualification, weekly workload, severity of patients, diet and sleep were the most cited and are very significant for nurses. With irregular routines, lack of proper nutrition and rest, the influence of insomnia can lead to problems in the workplace (SILVA, MINAYO, 2020).

Góes et al., (2020) highlights the main words listed by nursing professionals that refer to Covid-19: patients, fear, PPE, contaminate, team, assistance, difficult, exhausting, tense, stressful and exhausting. These are the feelings and perceptions that professionals consider to have the greatest impact on their daily experience with coronavirus.

Evidence associated with poor sleep quality among nursing professionals was highlighted in a study carried out by Kantorski et al. (2022) with 8090 professionals, the main findings of which were related to workload, precarious conditions, the use of psychotropic drugs and sociodemographic issues.

In a study of 18 nurses at the João Murilo de Oliveira Hospital in Vitória de Santo Antão - PE, 50% worked in the morning and 50% in the middle, 50% reported good quality sleep, 33% had a disorder and 17% had poor quality sleep. Regarding the use of medication, 27.7% used some psychotropic drug, signs of anxiety (33.3%) and depression (27.7%) were found among the professionals, which indicate an association between sleep quality and mood disorders (MARTINS et al. 2020).

The number of patients per nurse is proportionally related to the greater risk of failures and errors, the more patients, the greater the risk. Overload involves both physical and mental conditions and plays an important factor in nurses' performance, the main errors that occur in the routine are: medication errors, falls, invasive devices and skin integrity, failures not only harm patients as well as professionals, because when you are at the point of making mistakes it means that the worker's life is

already being harmed, the impact will be on both sides both for those who provide assistance and for those who are provided (SANTOS, et al. 2020).

6 CONCLUSION

Despite not showing statistical significance for the variables studied, the study considers the relationship between sleep quality and obesity, demonstrating statistical significance and corroborating the scientific literature.

The limitation of this research is that only a few health professionals took part, which prevents the results from being generalized. This can be justified by the choice of data collection technique, which was via an online form, for security reasons, since we were still under the distancing policy due to the pandemic. We therefore recommend other data collection techniques for further studies on this subject.

It is suggested that other studies could investigate the issue of sleep quality among health professionals in relation to obesity, since it directly affects the quality of life of health workers. And it is hoped that this study will spark debate about the quality of sleep among health professionals, since this is fundamental to quality of life.

REFERENCES

Appolinário S. Metodologia da ciência: filosofia e prática da pesquisa. 2ª ed.

BERTOLAZI AN, FAGONDES SC, HOFF LS, DARTORA EG, MIOZZO ICS, BARBA MEF, et al. Validation of the Brazilian Portuguese version of the Pittsburgh Sleep Quality Index. Sleep Med. 2011;12(1):70–5.

BRASIL, 2013. Resolução nº 466, de 12 de dezembro de 2012. Dispõe sobre diretrizes e normas regulamentadoras de pesquisas envolvendo seres humanos. Brasília, 2013. Disponível em: https://conselho.saude.gov.br/resolucoes/2012/Reso466.pdf. Acesso em: 04 out. 2021.

BRASIL, 2016. Resolução nº 510, de 07 de abril de 2016. Dispõe sobre as normas aplicáveis a pesquisas em Ciências Humanas e Sociais. Diário Oficial [da] República Federativa do Brasil, Brasília, DF, 24 maio 2016.

FUSCO, Suzimar de Fátima Benato et al. Ansiedade, qualidade do sono e compulsão alimentar em adultos com sobrepeso ou obesidade. Revista da Escola de Enfermagem da Usp, [S.L.], v. 54, p. 1-8, 2020. FapUNIFESP (SciELO). http://dx.doi.org/10.1590/s1980-220x2019013903656. Disponível em: https://www.scielo.br/j/reeusp/a/VbCfRCz8XWkBF7bTnXhS44G/abstract/?lang=pt. Acesso em: 04 jun. 2022.

GOES, Fernanda Garcia Bezerra et al. Desafios de profissionais de Enfermagem Pediátrica frente à pandemia da COVID-19. Rev. Latino-Am. Enfermagem, Ribeirão Preto, v. 28, p. 1-9, 2020. Disponível em: <http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0104-11692020000100406&lng=en&nrm=iso>. Acesso em: 01/05/2021.

HORTA, Rogério Lessa et al. O estresse e a saúde mental de profissionais da linha de frente da COVID-19 em hospital geral. J. bras. psiquiatr., Rio de Janeiro , v. 70, n. 1, p. 30-38, mar. 2021 . Disponível em <http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0047-20852021000100030&lng=pt&nrm=iso>. acesso em 01 maio 2021.

KANTORSKI, Luciane Prado et al. Prevalence and factors associated with poor sleep quality among nursing professionals during the COVID-19 pandemic. Revista Brasileira de Enfermagem, [S.L.], v. 75, n. 1, p. 1-7, 2022. http://dx.doi.org/10.1590/0034-7167-2021-0517. Disponível em: https://www.scielo.br/j/reben/a/H9MQtrS858Zs966VJgNbhdw/?lang=en. Acesso em: 04 jun. 2022.

KRYGUER M., AVIDAN A., BERRY R. Atlas Clínico de Medicina do Sono. São Paulo, 2015. 2ª edição.

MARMELSTEIN, George; MOROZOWSKI, Ana Carolina. Que Vidas Salvar? Escassez de Leitos de UTI, Critérios Objetivos de Triagem e a Pandemia da COVID-19. Revista Publicum, Rio de Janeiro, v. 6, n. 1, p. 94-117, 6 abr. 2021. Universidade de Estado do Rio de Janeiro. Disponível em: https://www.e-publicacoes.uerj.br/index.php/publicum/article/view/57573. Acesso em: 22 set. 2021.

MARTINS, Larissa Ranielle Barreto da Silva et al. Existem prejuízos no sono e no humor entre profissionais de enfermagem? Braz. J. Of Develop, Curitiba, v. 6, n. 12, p. 103953-103967, 2020. Disponível em: https://www.brazilianjournals.com/index.php/BRJD/article/view/22440/17961. Acesso em: 28 set. 2021.

OMS. Organização Mundial da Saúde, 2021. Disponível em: https://www.who.int/pt. Acesso em: 14 out. 2021.

OPAS. Organização Pan-Americana da Saúde, 2021. Disponível em: https://www.paho.org/pt/brasil. Acesso em: 14 out, 2021.

PAVANI, Fabiane Machado et al. Covid-19 and repercussions in mental health: a narrative review of literature. Revista Gaúcha de Enfermagem, [S.L.], v. 42, n. , p. 1-14, 2021. FapUNIFESP (SciELO). http://dx.doi.org/10.1590/1983-1447.2021.20200188. Disponível em: https://www.scielo.br/j/rgenf/a/YD6WWBggJmkcBY8jNsFypSd/?lang=pt#. Acesso em: 04 jun. 2022.

POLIT, Denise F.; BECK, Cheryl Tatano Fundamentos de Pesquisa em Enfermagem: avaliação de evidências para a prática da enfermagem. 7. ed. Porto Alegre: Artmed, 2011.

SANTOS, Carolina de Souza Carvalho Serpa et al. Avaliação da sobrecarga de trabalho na equipe de enfermagem e o impacto na qualidade da assistência. Research, Society And Development, [S.L.], v. 9, n. 5, p. 1-14, 29 mar. 2020. Research, Society and Development. Disponível em: https://www.rsdjournal.org/index.php/rsd/article/view/3201/5282. Acesso em: 14 out. 2021.

SILVA, Antônio Augusto Moura da; MINAYO, Maria Cecília de Souza. Epidemiologia, ciências sociais e políticas de saúde no enfrentamento da COVID-19. Ciênc. Saúde Coletiva, [S. L.], v. 1, n. 25, p. 2392-2392, 2020. Disponível em: https://www.scielo.br/j/csc/a/TbBjtnfFVgwHynj9F6SmksB/?lang=pt. Acesso em: 02 dez. 2021.

SILVA, Josué da Sousa Xavier e et al. Qualidade do sono dos profissionais de enfermagem do serviço móvel de atendimento de urgência. Revisa Goiás, v. 3, n. 8, p. 264-272, 2019. Disponível em: http://revistafacesa.senaaires.com.br/index.php/revisa/article/view/422/0. Acesso em: 28 set. 2021

SIMÕES, Júlio; BIANCHI, Larissa Renata de Oliveira. Prevalência da síndrome de burnout e qualidade do sono em trabalhadores técnicos de enfermagem. Revista Saúde e Pesquisa, Maringá (Pr), v. 9, n. 3, p. 473-481, 2016. Disponível em: https://periodicos.unicesumar.edu.br/index.php/saudpesq/article/view/5230/2914. Acesso em: 22 set. 2021.

SOUZA, Martha Helena Teixeira de; MARCHIORI, Mara Regina Teixeira; DIAZ, Claudia Maria Gabert. Contribuições da Enfermagem Global Face à COVID-19. Ed. Santa Maria: UFN, 2020.

TU, Zhi-Hao et al. Qualidade do sono e sintomas de humor em enfermeira recrutada na linha de frente em Wuhan, China, durante surto de COVID-19: um estudo transversal. Medicine, Baltimore, v. 26, n. 99, p. 1-5, 2020. Disponível em: https://pubmed.ncbi.nlm.nih.gov/32590755/. Acesso em: 22 set. 2021.

WU, Koulong; WEI, Xuemei. Analysis of Psychological and Sleep Status and Exercise Rehabilitation of Front-Line Clinical Staff in the Fight Against COVID-19 in China. Medical Science Monitor Basic Research, [S.L.], v. 26, p. 1-7, 11 maio de 2020. International Scientific Information. Disponível em: https://pubmed.ncbi.nlm.nih.gov/32389999/. Acesso em: 22 set. 2021.