

Health Literacy and Sleep Quality in Nursing Students [†]

Tânia Correia ^{1,2,3,*} , Adília Santos ¹, Amélia Cambulo ¹, Ana Margarida Almeida ¹, João Longo ¹ 
and Olga Valentim ^{2,4,5} 

¹ Escola Superior de Saúde Ribeiro Sanches-IPLUSO, 1950-396 Lisboa, Portugal

² CINTESIS, NursID, 4050-313 Porto, Portugal

³ Escola Superior de Saúde Santa Maria, 4050-313 Porto, Portugal

⁴ Escola Superior de Enfermagem de Lisboa, 1950-396 Lisboa, Portugal

⁵ CIDNUR, 1950-396 Lisboa, Portugal

* Correspondence: tania.correia@ipluso.pt

[†] Presented at the International Congress of Research in Nursing ESEP 2022, Porto, Portugal, 14–15 July 2022.

Abstract: Nursing students, as future health professionals and most likely shift workers, are a group to which more attention should be paid regarding sleep quality. To verify the existence of a relationship between health literacy and sleep quality in nursing students, we developed a quantitative descriptive–correlational study with 95 participants. The instruments for data collection were the Sociodemographic Questionnaire, Pittsburgh Sleep Quality Index (PSQI-PT) and the Health Literacy Scale (HLS-EU-PT). Data analysis was performed using IBM SPSS 26 software. Here, 81.8% of the participants considered that they had a good quality of sleep. However, the remaining variables contradicted this assessment: usual sleep efficiency (65%), sleep disorders (97.9%), daytime dysfunction (75.8%) and use of medication to fall asleep (97.0%). The level of health literacy is considered inadequate, and there is no statistically significant correlation between health literacy and sleep quality.

Keywords: sleep quality; nursing students; health literacy

1. Introduction

Sleep is a physiological need of humans, is essential for proper functioning of the body, to maintain good health and good physical and mental performance daily and is closely related to quality of life [1]. A good quality of sleep is described as a state of mental and physical activity that leaves people refreshed, ‘rejuvenated’ and ready to perform daily life activities, and it is understood as a multidimensional sleep–wake pattern adapted to individual, social and environmental needs that contributes to physical and mental well-being [1]. In turn, inadequate sleep can cause damage to physical and psychosocial health, work and academic performance or even result in the development of risk behaviors [1].

In this context, non-pharmacological strategies can play an important role. To this end, it is necessary to promote health literacy, which is defined as a set of cognitive and social skills that determine the individual’s motivation and abilities to access, understand and use the information to promote and maintain optimal health [2]. It involves gaining a level of knowledge, personal skills and confidence to take action to improve personal and community health by changing personal lifestyles and living conditions [2].

Thus, increasing sleep quality literacy is key to increasing knowledge, motivation and skills to promote healthy sleep habits and to recognize sleep problems, promoting sleep quality from infancy [3].

Nursing students, as future health professionals and shift workers, are a group associated with potential future risks, and more attention should be paid to their sleep quality. Thus, this study aimed to assess the existence of a relationship between health literacy and sleep quality in nursing students.



Citation: Correia, T.; Santos, A.; Cambulo, A.; Almeida, A.M.; Longo, J.; Valentim, O. Health Literacy and Sleep Quality in Nursing Students. *Med. Sci. Forum* **2022**, *17*, 2. <https://doi.org/10.3390/msf2022017002>

Academic Editor: Carlos Sequeira

Published: 23 December 2022



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2. Materials and Methods

This was a quantitative, cross-sectional and descriptive–correlational study because in addition to describing and analyzing nursing students' sleep quality and health literacy, it also aimed to identify the relationships between variables, i.e., knowing which factors influence nursing students' sleep quality, specifically to understand whether there is evidence of a relationship between health literacy and quality of sleep in these students. In this sense, the research questions were: what factors interfere with the quality of sleep of nursing students and what is the level of health literacy of nursing students? In turn, the research hypotheses were: H1-nursing students have quality of sleep; H2-nursing students have health literacy; H3-there is a relationship between health literacy and sleep quality.

For this purpose, this study used three assessment instruments:

- a sociodemographic questionnaire: gender, age, nationality, marital status, professional situation, household composition and being a nursing student (inclusion criteria).
- Portuguese version of the Pittsburgh Sleep Quality Score (PSQI-PT), [4]: it assesses the quality of sleep in the previous month and can be used from 6 to 90 years of age [4].
- The Health Literacy Survey Portuguese version (HLS-EU-PT) [5]. The level of health literacy is divided into 4 categories [5]: (0–25 points) inadequate literacy; (>25–33 points) problematic literacy; (33–42 points) sufficient literacy; (42–50 points) excellent literacy.

The sampling technique was convenience sampling, since it is the technique that ensures better accessibility to possible participants [6]. The sample consisted of nursing students, with a total of 95 participants. Data were collected using a questionnaire made available online.

Data were statistically processed using IBM (International Business Machines Corporation) SPSS (Statistical Package for the Social Science) (New York, NY, USA), version 26 for Windows.

During the statistical analysis, the significance values used were those mentioned by Pestana & Gageiro [7]: $p \geq 0.05$ -statistical difference not significant; $p < 0.05$ -statistically significant difference; $p < 0.01$ -statistically highly significant difference; $p < 0.001$ -highly significant statistical difference.

All procedures were carried out with each participant while respecting anonymity, confidentiality and consent.

3. Results

3.1. Sample Characterization

The sample consisted of 95 nursing students, and the female gender was predominant in the sample (61.1%, $n = 58$), with the male gender comprising 38.9% ($n = 37$). Ages ranged from 18 to 47 years, with a mode of 25 years ($M = 24.70$ and $SD = 4.824$). The most prevalent marital status was single (86.3%, $n = 82$), followed by in a consensual union or married 13.3% ($n = 14$). The most prevalent work regime was student exclusively (73.7%, $n = 70$), with 25.2% ($n = 23$) being working students and 1.1% ($n = 1$) being unemployed.

3.2. Sleep Quality Assessment (PSQI-PT)

The application of the PSQI-PT scale showed that most participants (81.8%, $n = 81$) considered that their quality of sleep in the previous month was good. As for the usual sleep efficiency, which relates the number of hours slept to the number of hours spent in bed, all participants ($n = 95$) reported values of less than 65%. Further, 97.9% ($n = 93$) of the participants reported the presence of situations that compromise sleep, namely sleep disorders, at least once per week during the last month, 97.0% ($n = 96$) of the participants reported that in the last month they had taken a sleep medication at least once per week and 75.8% ($n = 72$) stated that they had daytime sleepiness at least once per week during the past month. Students reported taking an average of 28.3 minutes to fall asleep and slept on average 8 hours during the last month.

3.3. Health Literacy Assessment (HLS-EU-PT)

From the application of the health literacy scale (HLS-EU-PT), it was found that the average literacy score was 12.35, which reflects an inadequate level of health literacy.

3.4. Relationship between the Variables and the Quality of Sleep

There were no statistically significant differences between gender and subjective sleep quality in the last month (male $n = 40$, female $n = 59$; $U = 1.72$ and $p = 0.08$) and taking sleeping medications (male $n = 40$, female $n = 59$; $U = 1.44$ and $p = 0.15$).

In relation to the student or worker-student status and Sleep Quality Index (PSQI-PT), there were no statistically significant differences between student or student-worker status and the overall PSQI-PT ($t(13) = 0.922$, $p = 0.18$). For the students, the global PSQI-PT had a mean of 13.9 and $SD = 2.84$ compared to that in the student-workers, specifically $M = 12.60$ and $SD = 1.81$.

For the correlation between health literacy and the Portuguese version of the Pittsburgh Sleep Quality Score (PSQI-PT), there was no statistically significant correlation between the global PSI and the total score of the health literacy index: Pearson's Correlation = 0.36 and $p = 0.18$.

For the relationship among gender, age, health literacy dimensions, health literacy index and subjective sleep quality, the health literacy level of nursing students, although considered inadequate overall, was the dimension that showed significant gender-based differences (Fem.: $M = 15.31$ and $SD = 5.30$; Male: $M = 7.98$ and $SD = 10.18$).

3.5. Hypothesis Results

Hypothesis 1—Nursing students have good sleep quality

This hypothesis was confirmed, considering that most nursing students (81.8%) considered that their quality of sleep during this month was good.

Hypothesis 2—Nursing students have health literacy

This hypothesis was not confirmed, with the average total health literacy score being 12.3, which reflects an inadequate level of health literacy.

Hypothesis 3—There is a relationship between health literacy and sleep quality

This hypothesis was not confirmed as the correlation was not statistically significant. The results show differences between sex regarding age, total literacy and each of the dimensions that they comprise.

4. Discussion

In this study, we found that none of the sociodemographic variables had a statistical impact on the quality of sleep of nursing students, since most participants considered their quality of sleep to be good during the month under study. However, when we evaluated other variables, such as habitual sleep efficiency (which relates the number of hours slept to the number of hours spent in bed), which was less than 65%; sleep disorders (97.9%); daytime dysfunction (75.8) and the use of medication to fall asleep (97%), we verified that there was a gap between what the participants considered to be 'good quality of sleep' and what the results of these variables suggested. Thus, these results clearly point to the fact that nursing students have poor sleep quality, which has been demonstrated with other evidence [2,8–10]. Kim and Yoon [10] compared the sleep quality of nursing students with that of students in other scientific fields, finding that the sleep quality of nursing students is lower than that of other students. Regarding health literacy, an inadequate level was found in these participants, according to the Health Literacy Scale (HLS-EU-PT). These findings should be reflected upon because this is an unexpected result for nursing students.

Although this study did not confirm a statistically significant relationship between health literacy and sleep quality, Thampy and Carter [11] developed a study to assess sleep health literacy and sleep quality in students involved in a course on sleep. Their results demonstrated that students showed an improvement in sleep health literacy and a small improvement in overall sleep quality. This study supports the hypothesis that active

education about the importance of sleep for personal health, as well as academic success, can improve sleep health literacy and possibly prevent the expected decline in sleep quality in college students.

5. Conclusions

This study did not find a statistically significant relationship between health literacy and the quality of sleep of nursing students. Even so, as future health professionals, it is necessary that they have adequate health literacy, and therefore, this phenomenon should be studied from other perspectives. We suggest replication studies with larger samples that seek to study the determinants of sleep quality in nursing students, students from other areas and health professionals, which will allow for a better comparison of results in the future.

Author Contributions: Conceptualization, T.C., A.S., A.C. and A.M.A.; methodology T.C., A.S., A.C. and A.A.; validation, T.C., J.L. and O.V.; formal analysis T.C., A.S., A.C. and A.M.A.; investigation A.S., A.C. and A.M.A.; data curation J.L. and O.V.; writing—original draft preparation T.C., A.S., A.C. and A.M.A.; writing—review and editing, T.C., J.L. and O.V.; visualization J.L. and O.V.; supervision T.C., J.L. and O.V.; project administration, T.C.; All authors have read and agreed to the published version of the manuscript.

Funding: This article was supported by National Funds through FCT-Fundação para a Ciência e a Tecnologia, I.P., within CINTESIS, R&D Unit (reference UIDB/4255/2020).

Institutional Review Board Statement: The study was conducted in accordance with the Declaration of Helsinki.

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: Not applicable.

Conflicts of Interest: The authors declare no conflict of interest.

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