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Sleep quality of health academics at UNEC - Nanuque Campus (MG)

Qualidade do sono de acadêmicos de cursos da área da saúde do UNEC - Campus de Nanuque (MG)

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ABSTRACT
Introduction: A high number of students linked to the health area have been related to problems with poor sleep quality, sparking an alert about the need to promote programs to improve the duration and quality of nighttime rest hours of pharmacy, nursing and physiotherapy students. Objective: To analyze the sleep quality of nursing, pharmacy and physiotherapy students enrolled in the night shift at UNEC - Nanuque Campus. Methodology: This research followed the theoretical assumptions of a quantitative, exploratory and descriptive study, which sought the perceptions of 70 students enrolled at UNEC - Nanuque Campus, through a questionnaire containing 10 structured questions. Results: Around 95% of respondents sleep after 11pm, 72% take longer than half an hour to fall asleep, 74% sleep less than recommended by the medical association, 51% rate the quality of and 70% said they had already taken medication to induce sleep. Conclusion: The low number of hours of sleep justified the excessive use of self-medication and the search for sleeping pills, which is worrying because using medication on their own can be harmful to students' bodies.

Keywords: Sleep, Students, Quality of Life, Sleep Health.

1 INTRODUCTION

Poor sleep patterns have become an increasingly constant part of modern society. Although studies have shown that adequate sleep patterns and sleep duration are strongly associated with improved quality of life and the prevention of risk factors for future comorbidities, people often ignore the fact that sleep deprivation is very damaging to their adult life, ending up associating sleep deprivation with a less productive life (ARAÚJO *et al.* 2014).

Despite concerns about sleep patterns grounded in scientific studies, there is still little literature addressing the importance of sleep for university students when sleep disorders are considered a public health problem. Therefore, considering that undergraduate health students are a risk group with poor sleep quality and duration, it is suggested that more research and surveys on related topics be carried out (GARCIA, 2018).

For Al-Kandari *et. al.* (2017), poor sleep patterns can be associated with a variety of environmental factors that can directly influence behavior during sleep and wakefulness, such as increased academic demands, economic pressures and increased working hours and/or time dedicated to extracurricular activities.

Poor sleep quality in university students affects many students, increasing the likelihood of various health problems, procrastination and reduced productivity at work. It is also closely related to physical, psychological and death conditions (DE ARAÚJO, *et. al.* 2013).

Circadian rhythm disorders affect cognitive function and are a risk factor for several chronic diseases. This problem is becoming increasingly common among health professionals and university students due to a variety of environmental factors that can directly affect sleep and wake behavior (GARCIA, 2018).

As we have seen so far, sleep is considered important for human beings because it has a restorative function and it is important to study this issue with students from health courses such as Nursing, Pharmacy and Physiotherapy. The aim of this study was to analyze the quality of sleep among nursing, pharmacy and physiotherapy students enrolled in the night shift at UNEC - Nanuque Campus.

The secondary objectives established for this academic proposal are to understand sleep and its influence on students' daily lives; to outline the weaknesses and/or harm caused by poor sleep; and to understand the influence of the routine of night shift students and universities.

2 THEORETICAL BACKGROUND

2.1 THE INFLUENCE OF SLEEP ON PEOPLE'S DAILY LIVES

As quality of life is closely related to aspects of human health, it is often used as a synonym for the general health of an individual or population. Although there is a clear link between the two conditions, the assertions that quality of life is having health end up reducing it to a single fragment of well-being of human integrality (OLIVEIRA *et al.* 2013).

It is very difficult to talk about quality of life for a person who has great difficulty enjoying a light and deep sleep, to the point of invigorating all their vital functions. According to Carvalho (2013), sleep is a natural physiological process that plays an important role in restoring energy, focus, memory consolidation and learning.

Mendes *et al. (2019),* points out that sleep quality can be affected by the type and quality of work time, for example, university students' daily activities, irregular class schedules and academic tests can affect the sleep of Pharmacy, Physiotherapy, Nursing and other students. This situation must be taken into account, as poor sleep quality triggers mechanisms related to students' physiology that can damage their physical and mental health.

Deep sleep is vital for all physiological, psychological and motor functions and benefits endogenous chemical reactions in all organisms, especially humans, who need sleep to recover all biological functions in general *(*RIOS *et al.* 2021*)*.

2.2 WEAKNESSES AND/OR HARM CAUSED BY POOR SLEEP

Lack of sleep can cause various short- and long-term problems, and excessive insomnia during the day can cause psychosocial problems and further interfere with the daily activities of students and other professionals (NEVES, 2013).

According to Neves (2013), as already mentioned in this text, individuals with sleep disorders report a series of complaints, such as delayed sleep onset, number of nocturnal awakenings, tiredness on awakening, muscle pain, early awakening, insufficient sleep time and excessive daytime sleepiness.

In this sense, the literature and doctors' surgeries across the country show situations such as a reduced ability to concentrate, difficulties in carrying out tasks and planning them, with an impact on the student's quality of life (PASCOTTO and SANTOS, 2013).

For Ferreira *et al. (*2015*),* the partial elimination or suppression of sleep in humans is known as sleep deprivation and includes a variety of short-term effects, such as reduced cognitive

processing efficiency, reaction time and attentional responses, memory impairment and mood changes.

It has been observed that the effects of sleep disturbance occur on at least three successive levels. Initially, biological parameters are affected, resulting in immediate consequences for the body, including fatigue, memory impairment, attention deficit, hypersensitivity to sounds, tachycardia and mood swings *(*SEGUNDO *et al.*, 2017*).*

According to Müller and Guimarães (2013), the consequences of sleep disorders unfold on at least three subsequent levels that affect the quality of life of the person affected. At the first level are the proximal or biological variables, which have immediate consequences for the body and include physiological changes such as tiredness, fatigue, memory failures, difficulty in paying attention and concentrating, hypersensitivity to sounds and light, tachycardia and mood swings.

At the second level are the medial or functional variables, secondary to the proximal consequences, observed in the medium term. These have implications for everyday activities, as a first consequence of sleep problems, including increased absenteeism from work, increased risk of accidents, relationship problems and dozing off at the wheel (MARTINI et al 2012).

At the third level are the distal or extensive variables, observed in the long term, as a second development of sleep disorders. These variables include loss of employment, after-effects of accidents, relationship breakdowns, and the emergence and worsening of health problems (MÜLLER and GUIMARÃES, 2013).

2.3 UNDERSTANDING THE INFLUENCE OF THE ROUTINE OF NIGHT SHIFT STUDENTS AND UNIVERSITIES

The quality of sleep is directly related to the health of individuals who do not enjoy significant sleep, as the absence of sleep interferes with the cognitive and physical abilities of the population as a whole, and the reduction in sleep time in students linked to the medical field, for example, which is often associated with overload and fatigue resulting from undergraduate activities, tends to be harmful in the near future (PEREIRA, 2019).

The quality of a student's sleep is very important because sleep affects performance during waking hours. When there is a full night of good quality sleep, the whole body recharges its energy from the daily wear and tear and our central nervous system enters a state of complete relaxation, which causes the body's temperature to drop, hormones to be produced, released and fixed. The information and memories acquired throughout the day are important for human intelligence and mood development (PASCOTTO and SANTOS, 2013).

According to Rios *et al (*2021*)*, we must be aware of the consequences of the high demand for the lifestyles required by the curricular matrix of health courses, in order to draw students' attention to their concerns about preventing and intervening in actions that may hinder their quality rest. Improving students' quality of life with health is very important for the quality of the trained professional, and it is urgent to observe some type of disorder in students who need comprehensive health care, despite their responsibilities and academic routines.

Finally, Schlosser *et al. (*2014*)* adds that sleep deprivation can have a negative impact on quality of life, as well as impairing physical and cognitive health. Knowledge of sleep quality in students can provide strategies that can help with the growing demand from this group of professionals and other groups of scholars who lose valuable time in dedicating themselves to science and providing a good service to the world's population.

Professionals involved in the management of teaching units and teaching hospitals need to intervene to promote preventive health, acting on the slightest manifestation of behaviors that reduce or prevent disorders that reduce the quality of life of health academics, starting with health education and a detailed and comprehensive assessment of students' sleep quality *(*SCHLOSSER *et al.* 2014*)*.

3 METHODOLOGICAL PROCEDURES

The method adopted in this proposal was to understand that we should follow the steps provided by quantitative, exploratory and descriptive research, without the intention of parameterizing or detailing the results and information gathered during the methodological itinerary of the research, but rather to make quantitative inferences about the perceptions, changes in behavior and attitudes demonstrated by the research subjects.

This academic research study was aided by the application of a questionnaire according to the postulates of Ferreira *et. al (2020)*. The researcher aimed to gather information that would indicate ways to solve the problem raised in the sense that it involves the quality of sleep of Nursing, Pharmacy and Physiotherapy students enrolled in the night shift at the University Center of Caratinga (UNEC), in the municipality of Nanuque, Minas Gerais.

The use of a structured questionnaire in the research proposal is considered to be of great importance, given that it is a data collection instrument that aims to gather opinions, beliefs, feelings, interests, expectations and situations experienced by the research participants *(*GERHARDT *et al.*, 2009*)*.

The questionnaire was structured into 10 questions, many of which were conducted directly and intuitively, with the possibility of marking with an "X" or even a simple number. Another research tool used in this study was bibliographic research, as it is an important resource for surveying theoretical references published in printed and electronic media, such as books, scientific articles, theses, dissertations, etc.

According to Fonseca (2002), the starting point for any scientific work is a prior search for some kind of bibliographic material that will help the researcher understand the intricacies of the phenomenon under study.

The research horizon was made up of 17 Pharmacy students, 26 Nursing students and 27 Physiotherapy students, all of whom were enrolled on the night shift at UNEC's Nanuque Campus.

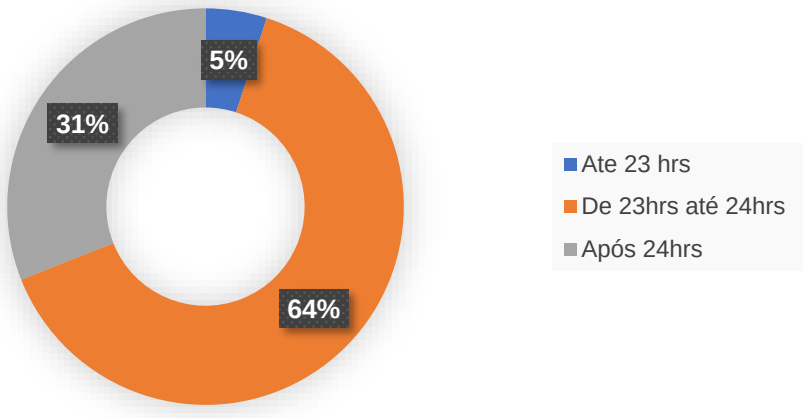
All the subjects taking part in the research signed the Free and Informed Consent Form (FICF), agreeing to take part in this study. It is important to note that the interviewees can withdraw from the study at any time, if they so wish, and that under no circumstances will they be identified or have their names disclosed.

4 RESULTS AND DISCUSSION

The subjects who took part in this research are represented here by the public who agreed to provide information for this study: 25 undergraduate Nursing students, 14 Pharmacy students and 22 Physiotherapy students, making a total of 61 students.

In the first question (Graph 1), which sought to gather the interviewees' perceptions of the time at which they went to rest, 64% of the answers were predominantly around 23 hours to 24 hours to go to sleep, and another 31% of the interviewees said that they went to rest after 24 hours, i.e, 95% of those interviewed start their rest period late at night, which can damage the quality of their sleep and, consequently, the inadequate functioning of muscle hormones, normal brain activity, normal heart activity, normal motor activity the following day, the following week and even months after hours of poor sleep.

Graph 01 - During the past month, what time did you usually go to bed?

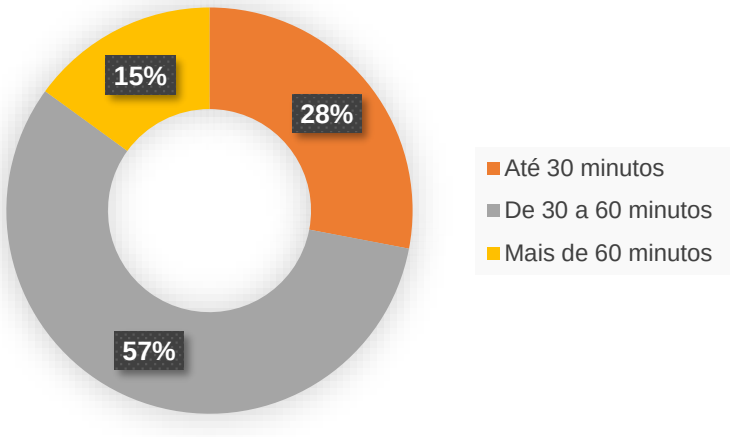


Source: Research data

For Kelley and Kelley (2017), the various disorders related to nighttime rest are closely linked to major public health problems, such as an epidemic that is very common in large metropolitan areas where the exhausting work routine robs the population of hours of sleep. These public health disorders can be related to a number of factors, which increase the risk of other chronic pathologies, including, in addition to lack of sleep, hypertension, type 2 diabetes, depression, obesity and cancer.

In the question that sought to find out how long it usually took students to fall asleep, it was possible to see that only 28% of students were able to fall asleep within 30 minutes, 15% said it took them more than an hour to fall asleep, and 57% said they needed more time, around half an hour to an hour to fall asleep, i.e., if we consider the time it takes for the student to get ready for bed in their resting environment, plus the time it takes for them to fall asleep, we realize that the time at which students enter relaxation sleep is already late at night, which can have a negative influence on their routine the next day, which can lead to chain losses, damaging their quality of life in the future (Graph 02).

Graph 02 - During the past month, how long (in minutes) did it usually take you to fall asleep each night?

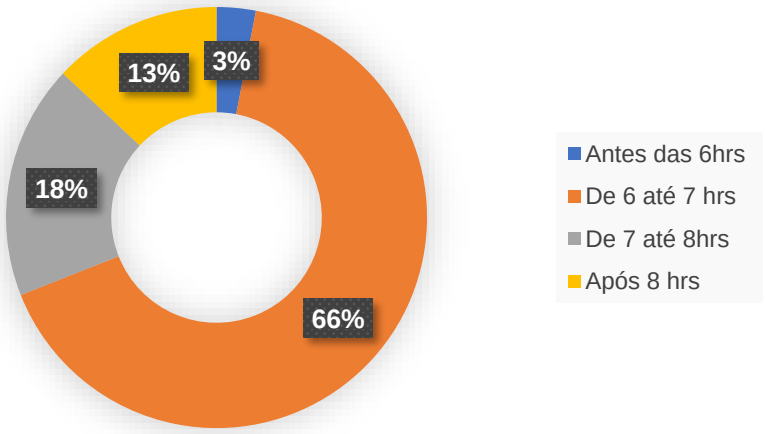


Source: Research data

Professionals who work late at night, such as health professionals, security guards and students, have an altered sleep-wake cycle. It is at this stage that what we call the delayed sleep phase occurs, which is directly related to the normal circadian rhythms of the body of night owls (CARSKADON, *et al.*, 2004).

When asked what time they usually woke up, 66% of respondents said they woke up between 6am and 7am, another 18% said they woke up between 7am and 8am, 13% said they woke up after 8am and 3% said they woke up before 6am (Graph 03).

Graph 03 - During the past month, what time did you usually wake up?



Source: Research data

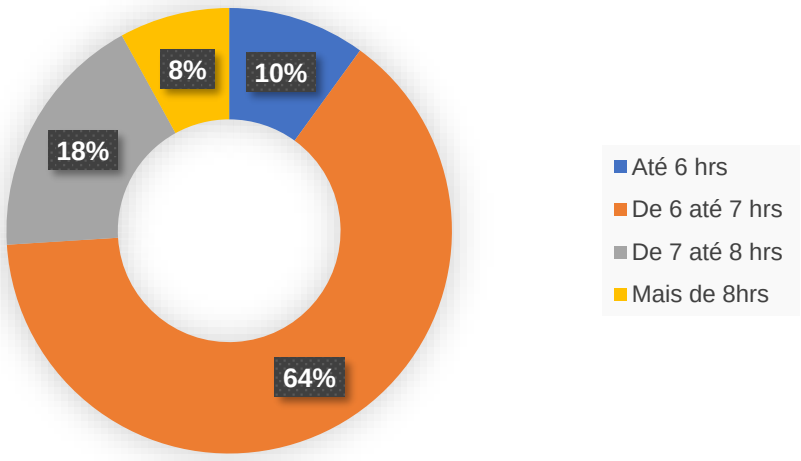
This question sought to find out more about the interviewees' waking hours. It was possible to see that most of the health students interviewed are sleeping less than the recommended 7 hours, which can lead to health problems, difficulty concentrating and other factors that reduce their quality of life. The reduced number of hours of sleep indicated by the research subjects raises doubts as to whether the body's normal activities are really being restored by the amount of sleep available to the professionals who took part in this study.

Poor sleep quality leads to difficulty sleeping, the use of sleep medication, interference in daily activities, not falling asleep for up to 30 minutes at least once a week, waking up in the middle of the night or early in the morning, not breathing comfortably and having bad dreams (SEGUNDO *et al*. 2017).

According to *et al*. (2017), however, they recommend adopting measures to reduce stress and short sleep time in order to avoid most of the associated disorders, as well as adopting regular hours dedicated to sleep and study.

In the question that sought to find out the subjects' perceptions of how many hours of sleep they had in the month prior to the survey, it was possible to see that the vast majority of those interviewed, around 64% of the perceptions, were that they slept around 6 to 7 hours, 18% said they slept between 7 and 8 hours, 10% of the survey subjects' perceptions were that they slept up to 6 hours a night and only 8% said they slept more than 8 hours a night (Graph 04).

Graph 04 - During the past month, how many hours of sleep did you actually get at night?



Source: Research data

Professionals working in the health sector, such as nurses, pharmacists and physiotherapists, do not have a normal or satisfactory sleep pattern, mainly due to their heavy workloads. The vast majority of health staff are dissatisfied with the poor quality of their sleep and point to physical, mental and social health problems due to the pace of work in health units and educational institutions (MOREIRA *et al*. 2015).

In the following table (Table 01), The Causes and Frequency of Students Having Difficulty Sleeping was quite varied, with 36% taking longer than half an hour to fall asleep, 49% waking up in the middle of the night, 36% having to get up to go to the bathroom, 56% not being able to breathe comfortably, 46% coughing or snoring heavily, 30% feeling very cold, 33% feeling very hot, 36% having bad dreams and 43% feeling pain.

Table 01: Causes and Frequency of Students with Sleep Difficulty

During the last month, how often have you had trouble sleeping, why?	None in the last month (%)	Less than once a week (%)	Once or twice a week (%)	Three or more times a week (%)
Couldn't sleep within 30 minutes	15	26	23	36
Woke up in the middle of the night or early in the morning	16	18	49	17
He had to get up to go to the bathroom	21	36	31	12
He couldn't breathe comfortably	56	21	13	10
Coughed or snored loudly	43	26	18	13
He felt very cold	26	30	23	21
He felt very hot	21	30	33	16
You've had bad dreams	21	27	36	16
There was pain	43	34	16	07

Source: Research data

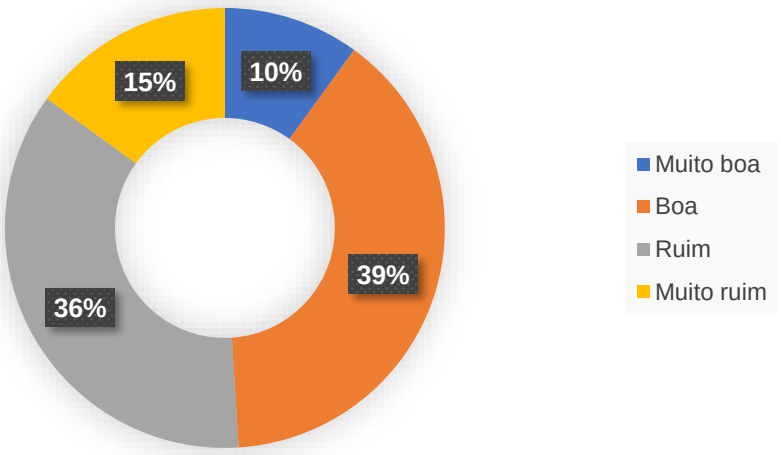
According to Moreira *et al*. (2012), the quality of sleep of professionals is important for the performance and efficiency of nursing activities on different shifts, but especially at night, when sleep disorders such as drowsiness can occur. This not only harms health, but also seriously damages the health of patients under specialized care. Adequate sleep patterns enable professionals to have a better quality of life, greater productivity and more effective patient care.

Martini *et al.* (2012) point out that poorer sleep quality may be related to shorter sleep duration and earlier wake-up times on school days and to the work shift. It was also concluded that students with poorer sleep quality were more likely to experience daytime sleepiness.

In this question, which sought to find out what the subjects' assessment was of the quality of their sleep in the month prior to this survey, it was possible to see that 15% of those interviewed

said that the quality of their sleep was very poor, 36% said that the quality of their sleep was poor, 39% said that the quality of their sleep was good and 10% said that the quality of their sleep was very good. In this question, it is possible to see that 51% of the students said that the quality of their sleep was bad or very bad, and the other half of the interviewees, around 49% of the perceptions, said that they were satisfied with the amount of time they had available for resting at night (Graph 05).

Graph 05 - Over the past month, how would you rate the general quality of your sleep?



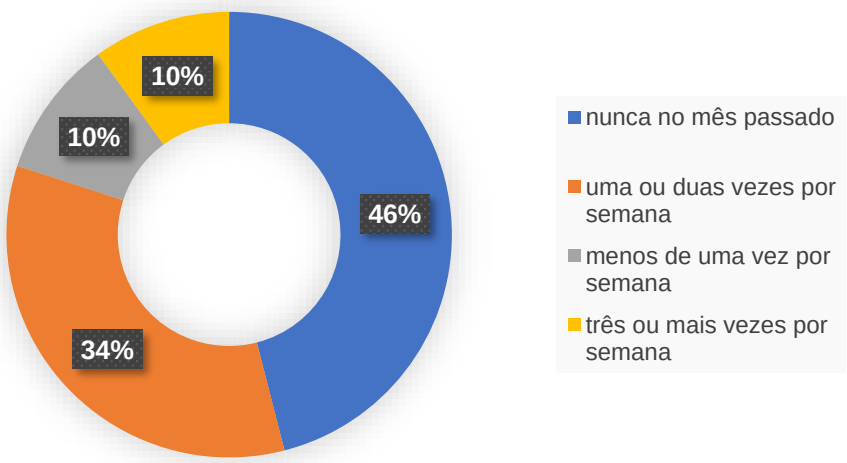
Source: Research data

The sleep patterns of the nursing staff, as well as the quality of life reported, need to be improved. Better planning of daily working hours/shifts is suggested, which would be fundamental in relation to sleep and rest, which would increase the safety of service users and improve the quality of life and health of the professionals themselves (MOREIRA *et al*. 2012).

With regard to this graph, which sought to find out how often people took medication to improve their sleep (Graph 06), it emerged that 46% of those interviewed had never used prescribed or self-prescribed sleep medication, 34% said they used it up to twice a week, 10% used it three or more times a week, and another 10% said they used it at least once a week.

It can be inferred that 54% of those interviewed use some kind of medication to get to sleep, which represents a significant proportion of students who use sleep-inducing medication on their own, meaning that self-medication of sleep-inducing chemical substances can be harmful to students' bodies.

Graph 06 - During the past month, how often have you taken medication to help you sleep?

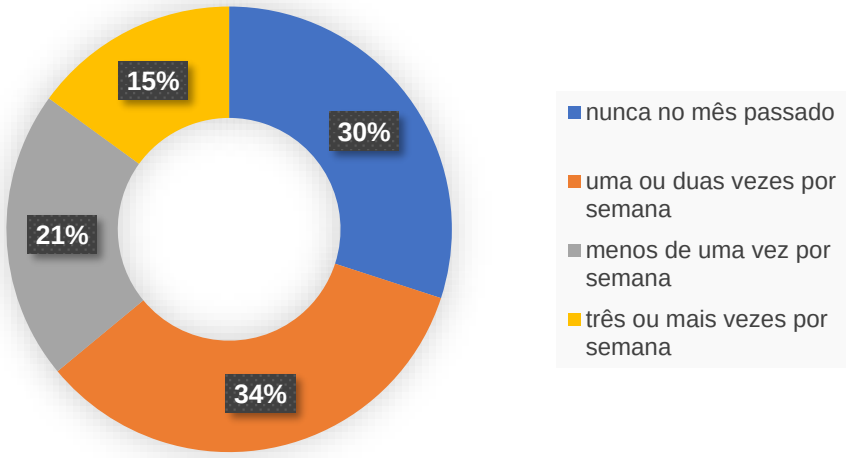


Source: Research data

Silva *et al*. (2020), points out that some students of courses such as those in the health area, widely use medicines to be able to fall asleep, which can come by medical indication or by self-medication at least once a week. In view of this, some studies have been carried out today and indicate that health students often use medication at least once a week to get to sleep or to stay awake, which can be harmful in the medium and long term.

In the question that sought to understand a little more about the level of interference of the interviewees' poor quality of sleep (Graph 07), in carrying out their basic daily activities, it was noted that 34% of the interviewees said that once or twice a week, they noticed difficulties in staying awake while driving, eating meals, or engaged in some normal social activity, 21% of those interviewed said that at least once a week, in the month before the survey was carried out, they noticed some kind of interference from poor sleep quality in their daily activities and 15% of those interviewed said that three or more times a week, they noticed some kind of interference from poor sleep quality in carrying out basic daily activities.

Graph 07 - During the past month, how often have you found it difficult to stay awake while driving, eating meals, or engaging in social activities?

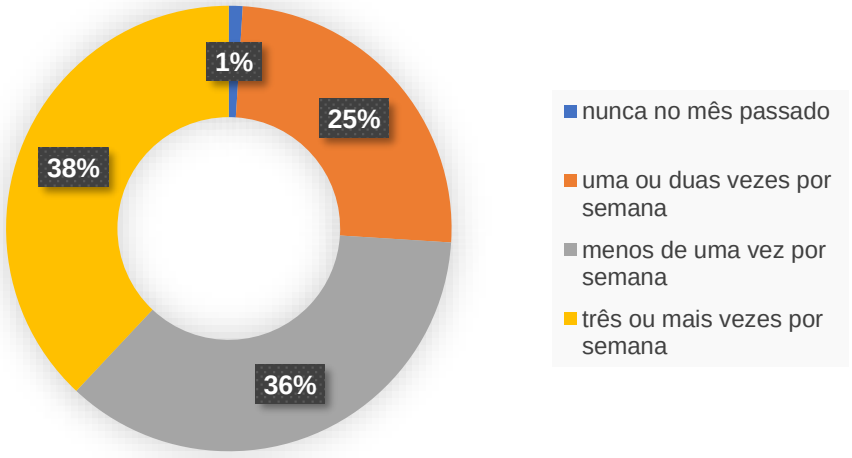


Source: Research data

When distributing the participants in this study according to the difficulty of staying awake during the day for regular activities, it was possible to identify an equivalence in the percentages of those who have this problem less than once a week. On the other hand, enthusiasm to carry out their daily activities was also measured and showed that the majority of students had problems with their physical disposition (ARAÚJO *et al.*, 2013).

In the question that sought to gather more information about the enthusiasm of those interviewed when carrying out their basic daily activities (Graph 08), it was possible to see that 38% of those interviewed said that three or more times a week, they were not so enthusiastic about carrying out their activities, 36% of those interviewed said that at least once a week they were apathetic about carrying out their daily activities, 25% of those interviewed said that at least once or twice a week they were not in the mood to carry out their normal daily activities, and only 1% of the students said that there was no interference in their enthusiasm for carrying out their daily activities.

Graph 08 - Over the past month, how much of a problem has it been for you to remain sufficiently enthusiastic when carrying out your activities?

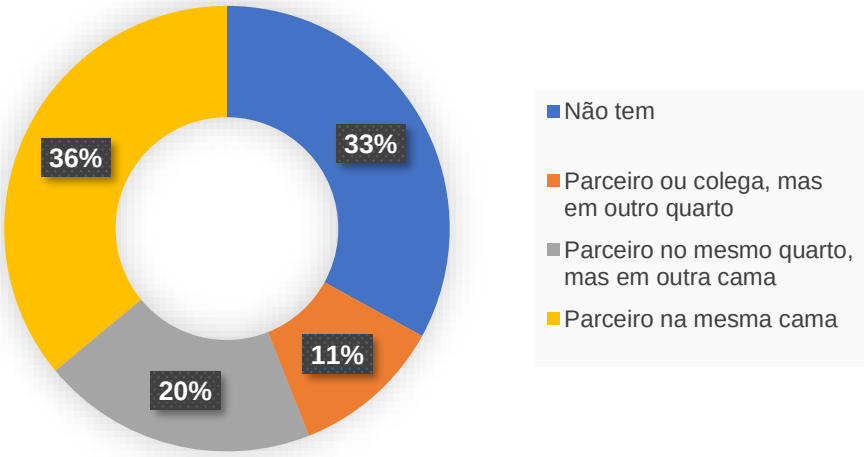


Source: Research data

According to *et al*. (2017), disturbances in the sleep-wake cycle lead, in addition to social consequences, to other serious physiological and/or emotional consequences. In addition, sleep is essential for consolidating memory, which suggests that it facilitates the processing of new information, so even partial sleep deprivation can have a negative effect on learning. Other factors that are influenced by the quality of sleep are: binocular vision, thermoregulation, energy conservation and restoration, restoration of cerebral energy metabolism, among others.

In the question asking whether the interviewee had a partner (Graph 09), a spouse or a roommate, it was possible to see that 36% of the interviewees had a partner in the same bed, 33% said they didn't have any kind of partner sleeping in the same intimate space, 20% said they had a partner in the same room but in a separate bed and 11% said they had partners or roommates but in separate rooms.

Graph 09 - Do you have a partner, spouse or roommate?



Source: Research data

According to Beltrão (2015), bed sharing with affective subjects or even colleagues, and the repercussions of this action on sleep quality, we concluded that subjects with a partner in the same bed have better sleep quality than those who do not sleep together in the same bed, even those subjects with a non-affective relationship. Of the individuals in our sample who had poor sleep quality, none had a partner in the same bed.

5 CONCLUSION

The research, together with the bibliographical review carried out in articles, books, dissertations and theses, was of great importance in giving us a more detailed and broader view of the existence of other research with students in the area of health/sleep quality, who also had their sleep quality affected by the long hours of study and work carried out in clinics and hospitals, which can cause serious problems to the health, both physical and cognitive, of physiotherapy, pharmacy and physiotherapy students.

The study showed that a large number of students have few hours of sleep, with only 5% of the sample having 61 perceptions. 72% of the students said they had trouble falling asleep, and many of them took more than an hour to get to sleep.

An aggravating factor was the finding that 66% of those interviewed woke up at around 7am, which further reduces the amount of sleep students get. This shortage of sleep has led to an excessive use of self-medication and the search for sleeping pills, which is worrying because using medication on their own can be harmful to students' bodies.

Another very important point that was not directly observed by the research, but which can also increase the harmful effects of the lack of quality sleep, is the issue of long double and even triple shifts of internship, work and study, which added to the great dependence of young people on new digital technologies, such as the excessive use of *WhatsApp*, *Instagram*, *Twitter*, among other resources, ends up further aggravating the issue of sleep quality in health students.

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