

Profile of nursing students: quality of life, sleep and eating habits

Perfil dos estudantes que cursam enfermagem: qualidade de vida, sono e hábitos alimentares

Perfil de los estudiantes de enfermería: calidad de vida, sueño y hábitos alimenticios

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ABSTRACT

Objective: to profile and analyze sleep quality, quality of life and eating habits of nursing students. **Methods:** a cross-sectional, comparative and correlational study with the following variables: sociodemographic characteristics, Pittsburgh sleep quality index, quality of life and eating habits. One hundred ninety-five students participated in the study. **Results:** participants were on average 24 years old. Results showed that females were prevalent (87.1%); 71.0% of the students had poor sleep quality; 98.9% used electronic devices before bedtime. Self-perception of quality of life was indifferent (38.3%), and self-perception of general health, 36.9% expressed satisfaction. Among the participants, 45.13% consumed one portion of fruit and 40.66% two to three portions of vegetables daily. **Conclusion:** the study allowed the profile of these students, sedentary, overweight and poor sleep quality young students who studied and worked.

Descriptors: Students, Nursing; Sleep; Quality of Life; Feeding Behavior; Surveys and Questionnaires.

RESUMO

Objetivo: traçar o perfil e analisar a qualidade do sono, qualidade de vida e hábitos alimentares dos estudantes de enfermagem. **Métodos:** estudo transversal, comparativo e correlacional com as seguintes variáveis: características sociodemográficas, índice de qualidade de sono de Pittsburgh, qualidade de vida e hábitos alimentar. 195 estudantes participaram do estudo. **Resultados:** os participantes tinham em média 24 anos. Os resultados demonstraram que o sexo feminino foi prevalente (87,1%); 71,0% dos estudantes apresentaram qualidade de sono ruim; 98,9% faziam uso de aparelhos eletrônicos antes de dormir. A autopercepção da qualidade de vida foi indiferente (38,3%) e quanto à autopercepção de saúde geral, 36,9% expressaram-se satisfeitos. Dentre os participantes, 45,13% consumiam uma porção de fruta e 40,66% duas a três porções de verduras e legumes, diariamente. **Conclusão:** o estudo permitiu traçar o perfil desses estudantes, jovens que estudavam e trabalhavam, sedentários, acima do peso e com qualidade de sono ruim.

Descritores: Estudantes de Enfermagem; Sono; Qualidade de Vida; Comportamento Alimentar; Inquéritos e Questionários.

RESUMEN

Objetivo: identificar lo perfil y analizar la calidad del sueño, la calidad de vida y los hábitos alimenticios de los estudiantes de enfermería. **Métodos:** estudio transversal, comparativo y correlacional con las siguientes variables: características sociodemográficas, índice de calidad del sueño de Pittsburgh, calidad de vida y hábitos alimenticios. 195 estudiantes participaron en el estudio. **Resultados:** los participantes tenían en promedio 24 años de edad. Los resultados mostraron que las mujeres eran prevalentes (87.1%); El 71.0% de los estudiantes tenían mala calidad del sueño; El 98.9% usó dispositivos electrónicos antes de acostarse. La autopercepción de la calidad de vida fue indiferente (38.3%), y la autopercepción de la salud general, 36.9% expresó satisfacción. Entre los participantes, el 45.13% consumió una porción de fruta y el 40.66% dos o tres porciones de vegetales diariamente. **Conclusión:** el estudio permitió el perfil de estos estudiantes, estudiantes sedentarios, con sobrepeso y con poca calidad del sueño que estudiaron y trabajaron.

Descriptor: Estudiantes de Enfermería; Sueño; Calidad de Vida; Conducta Alimentaria; Encuestas y Cuestionarios.

INTRODUCTION

Students face a number of stressors throughout their university life, some may favor professional development and growth⁽¹⁾ and others may impair well-being⁽²⁾, health and quality of life⁽³⁾.

During the learning process, nursing students face various situations, such as high academic demand and excessive responsibilities⁽⁴⁻⁶⁾. They experience hitherto unknown situations, such as the use of medical terms, the diagnosis and treatment of patients, the care of the patient, the lack of professional skills in the use of equipment and the possibility of errors⁽⁷⁾. In the interpersonal field, relationships with professors, colleagues and health professionals stand out⁽⁵⁾.

Added to these factors, there are nursing students who work and study, an unfavorable condition faced that may reflect detrimentally in the teaching-learning process, many of them arrive late or sleep during classes⁽⁸⁻¹⁰⁾.

Sleep is an essential condition for survival⁽¹¹⁾. It is a fundamental biological function in memory consolidation, binocular vision, thermoregulation, energy conservation and restoration⁽¹²⁾, and restoration of cerebral energy metabolism⁽¹³⁾. Average daily sleep is an individual characteristic, ranging from 7 to 8 hours⁽¹²⁾. Due to these important functions, sleep disturbances can cause significant changes in the individual's physical, occupational, cognitive and social functioning, and substantially compromise the quality of life⁽¹⁴⁻¹⁶⁾. Recent studies have shown that undergraduate students from various fields, including nursing, had poor sleep quality^(8,17-20).

In college students, sleep duration is shorter during the week than on weekends, as students face sleep deprivation during school or work days, which may have negative health repercussions⁽²¹⁾. The shortening of the sleep-wake cycle may be due to high academic demands, inadequate eating habits, irregular physical activity, drug and alcohol abuse, and anxiety to develop good academic performance⁽²²⁾.

Upon leaving high school and entering university, academics may have difficulties with their own diet and be influenced by many factors, such as new social relationships, fast food consumption, psychosocial instability, stress, no meals, alcohol and cigarette consumption⁽²³⁾.

Given all this universe, the health and quality of life of these students may be compromised. According to the World Health Organization (WHO), quality of life can be defined as "an individual's perception of their position in life in the context of the culture and value system in which they live, and in relation to their goals, expectations, standards and concerns". Health "is a state of complete physical, mental and social well-being" and is not just the absence of disease or illness⁽²⁴⁾.

OBJECTIVE

To profile and analyze sleep quality, quality of life and eating habits of nursing students.

METHODS

Ethical aspects

This study was approved by the Research Ethics Committee of the School of Nursing at *Universidade Federal de São Paulo*

(UNIFESP), obtaining a favorable opinion (CAAE (*Certificado de Apresentação para Apreciação Ética* - Certificate of Presentation for Ethical Consideration) by way of *Plataforma Brasil* (Brazil Platform). Study participants were informed about the research objectives, the voluntary nature of participation, ensuring the confidentiality of their answers and completing the "Informed Consent Form".

Design, place of study and period

This is a cross-sectional, descriptive and comparative study with correlational approach, conducted with undergraduate nursing students from a private Higher Education Institution (HEI) in the countryside of the state of São Paulo.

The collection was held in October 2017, in the night shift, in the classroom, with the authorization of the coordination and professors. The collection instruments were handed to the students, who had about 30 minutes to complete the questionnaires and return them. The Equator instrument used to guide the methodology of the present study was the STROBE (Strengthening the Reporting of Observational Studies in Epidemiology) checklist.

Population or sample; inclusion and exclusion criteria

There was participation of students enrolled in the second, fourth, sixth and eighth periods, in the second semester of the 2017 school year, totaling 232 students.

Inclusion criteria for both sexes were to be students regularly enrolled, and exclusion, to be on sick leave or maternity leave, not to have returned the instruments used in the study within the given period. In the end, there was a total of 195.

Study protocol

For sociodemographic characterization, a questionnaire was elaborated with information about age, sex, marital status, children, work, physical activity, smoking, use of electronic devices before bedtime. To collect the dietary profile, a questionnaire was applied regarding the daily eating habits of breakfast, lunch, dinner and daily consumption of fruits and vegetables, soda consumption and daily amount of water. The students self-reported weight (Kg) and height (m) for the calculation of Body Mass Index (BMI). WHOQOL-BREF was used to collect data on quality of life, which refers to the last 15 days lived by respondents, with 26 questions. Among them are two general questions that refer to the perception of quality of life and satisfaction with health. The others represent the 24 facets that make up the original instrument and are distributed in four domains: physical, psychological, social relations and environment⁽²⁴⁾. WHOQOL-BREF questions are formulated for answers on Likert scales ranging from one to five. The results of the domains present values between zero and one hundred, with the worst being closer to zero and, better, the closest to one hundred, and higher averages suggest a better perception of quality of life⁽²⁵⁾.

The Pittsburgh Sleep Quality Index (PSQI), developed by Buysse (1989)⁽²⁶⁾, was used to assess sleep quality through a standardized questionnaire. This questionnaire evaluates sleep quality over a one-month timeframe, consisting of 19 self-administered questions. The 19 questions are categorized into seven components,

graded on a score ranging from 0 to 3. The PSQI components are: component 1, subjective sleep quality; component 2, sleep latency; component 3, sleep duration; component 4, usual sleep efficiency; component 5, sleep disorders; component 6, use of sleeping medication; component 7, daytime dysfunction. The sum of the scores for these 7 components produces an overall score ranging from 0 to 21, with the highest score indicating poorer sleep quality. An overall PSQI score greater than 5 indicates greater difficulty in at least 2 components or moderate difficulty in more than 3 components. The PSQI-BR and the original PSQI presented by Cronbach's alpha an internal consistency of 0.73 and 0.75, respectively, when applied to a group of bilingual individuals⁽²⁷⁾.

Analysis of results, and statistics

For all analyzes, SAS statistical software version 9.4 and SPSS version 22 were used. Correlations between quantitative variables were evaluated using the Pearson or Spearman correlation coefficient⁽²⁸⁾, according to the distribution of data. To study the associations between qualitative variables, the Chi-Square Test⁽²⁹⁾ and Fisher's Exact Test were applied⁽³⁰⁾.

RESULTS

Of the participants, 41.15% were residents of the same city where the HEI was located, the others residing in cities in the region. Table 1 presents the sociodemographic, professional and life habits data of the studied sample in percentage and absolute number. A large portion reported living with relatives, having their own driving, using school transport to get to the institution, having attended high school in public school, not practicing physical activity and having employment in the mornings and afternoons. 56.48% of the participants were responsible for funding the studies, as it was a particular HEI. Among the participants, 52.06% drank alcohol and 90.77% were not smokers. When asked about the use of electronic devices such as mobile phone, tablet and notebook before bed, 98.97% reported using them.

Regarding the characteristics of eating behavior, most participants ate two to three meals a day. The most consumed foods for breakfast were: milk (38.46%), coffee (40.00%) and breads, cereals, cakes and cookies (37.95%). The total of participants answered that they had lunch. The most consumed foods were rice (92.82%), beans (81.54%), beef (81.54%), vegetables (69.23%), chicken meat (62.05%) and vegetables (61.54%), at dinner were rice (45.36%), beef (40.72%), beans (40.21%) and vegetables (34.02%).

Regarding eating habits, 45.13% consumed one portion of fruit and 40.66% two to three portions of vegetables per day. As for soda consumption, 29.90% consumed two to three times a week and 17.01% did not. Of the participants, 50.26% did not eat fast food, 37.95% ingested from 500 milliliters to 1 liter of water daily and 36.92% ingested from 1 to 2 liters.

Table 2 shows the mean age, anthropometric measurements and BMI index of these participants.

In the analysis of quality of life, by WHOQOL-BREF, Figure 1 shows the responses of the subjects regarding the perception of quality of life. Regarding perception of health 36.98% said they were "satisfied".

Table 1- Sociodemographic, occupational characteristics and life habits, according to students enrolled in the nursing course (n=195), São João da Boa Vista, São Paulo, Brazil, 2017

Variable	n	%
Sex		
Male	25	12.82
Female	170	87.18
Marital status		
Married	22	11.28
Divorced	5	2.56
Single	153	78.46
Widow(er)	1	0.51
Living with a partner	14	7.18
Children		
Yes	40	20.51
No	155	79.49
Current working		
Yes	141	72.68
No	53	27.32
No information = 1		
Living with		
Friends/Others	14	13.59
Husband	3	2.91
Relatives	79	76.70
Alone	7	6.80
No information = 92		
Transportation		
Yes	103	53.09
No	91	46.91
No information = 1		
Studied High School		
Private school	30	15.38
Public school	161	82.56
Public/private school	3	1.54
Vocational training	1	0.51
Responsible for paying the studies		
Yes	109	56.48
No	84	43.52
No information = 2		
Physical activity		
Yes	72	36.92
No	123	63.08
Alcohol beverage		
Yes	101	52.06
No	93	47.94
No information = 1		
Smoker		
Yes	18	9.23
No	177	90.77
Use of electronic device		
Yes	193	98.97
No	2	1.03

Regarding the domains evaluated by the WHOQOL-BREF, a relative difference between the domains can be observed (Table 3). The social domain presented the highest mean value of the scores and the lowest minimum value among the four domains. The physical domain had the second highest score, however presented the highest minimum value.

Regarding the Pittsburgh Sleep Quality Index, it was observed that 71.05% of the students had "poor" sleep quality.

Table 2- Mean values of weight, height and body mass index of nursing students (n = 195), Sao Joao da Boa Vista, São Paulo, Brazil, 2017

Variable	n	Mean	Standard Deviation	Min.	Q1	Median	Q3	Max.
Age	193	24.98	7.41	18.00	20.00	22.00	28.00	57.00
Weight	186	69.72	14.65	43.30	60.00	67.00	79.00	120.00
Height	186	1.65	0.07	1.50	1.60	1.64	1.70	1.86
BMI	186	25.61	5.02	16.30	21.97	24.82	28.04	44.22

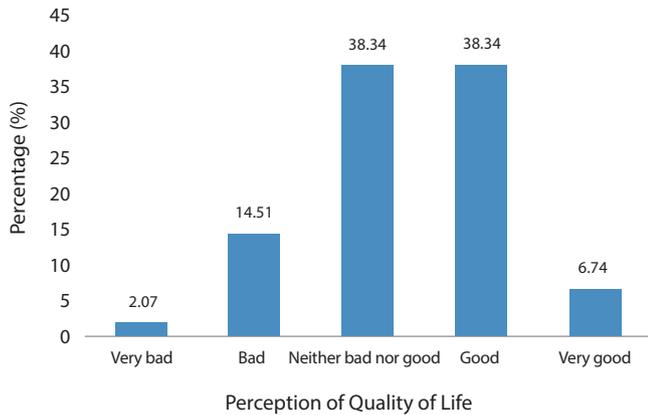


Figure 1- Frequency distribution of nursing students' perception of quality of life responses

Table 4 shows the mean sleep quality score presented by participants, the average number of hours spent in bed, and sleep efficiency. Regarding sleep latency, it was observed that 49.12% students, on average, took 31 to 60 minutes to fall asleep. Regarding the use of sleeping medications, 81.58% reported not using them.

An association of insomnia was observed in relation to the periods of the course, where, in the second, fourth and sixth periods, the majority answered that they had no insomnia; in the eighth period, answered having insomnia with a statistically significant difference by the Chi-Square Test ($p=0.0201$).

Table 3- WHOQOL-BREF mean values of nursing students, São João da Boa Vista, São Paulo, Brazil, 2017 (n=195)

Variable	n	Mean	Standard Deviation	Min.	Q1	Median	Q3	Max.
Whoqol – Physical	186	64.63	13.94	25.00	53.57	64.29	75.00	100.00
Whoqol - Psychological	183	62.04	17.55	12.50	50.00	62.50	75.00	95.83
Whoqol – Social	189	67.11	19.27	0.00	58.33	66.67	83.33	100.00
Whoqol – Environmental	186	58.70	14.54	12.50	50.00	59.38	68.75	100.00

Table 4- Mean PSQI score, hours in bed and usual sleep efficiency of nursing students, São João da Boa Vista, São Paulo, Brazil, 2017

Variable	n	Mean	Standard Deviation	Min.	Q1	Median	Q3	Max.
PSQI – score	114	7.82	3.65	1.00	5.00	8.00	10.00	18.00
Hours in bed	114	6.49	1.75	2.50	5.17	6.21	7.67	10.50
Sleep efficiency (%)	114	96.41	17.55	40.00	89.00	100.00	100.00	150.00

The correlations of the WHOQOL-BREF domains, the PSQI general score, weight and BMI were observed. There was a moderate, statistically significant negative correlation between all WHOQOL-BREF domains and the overall PSQI score, indicating that when the PSQI score value increases, the WHOQOL-BREF domain values decrease.

Positive, strong and statistically significant correlation was observed between the physical domain of WHOQOL-BREF and the psychological and social domains; from the psychological domain to the environmental domain; and, weight with BMI, and positive, moderate and statistically significant correlation between the physical domain and the environmental domain; from the psychological domain to the social domain; and from the social to the environmental domain, indicating that the higher the quality of life in the physical domain, the higher the quality of life in the other domains, and the higher the weight, the higher the BMI.

DISCUSSION

Nursing has been characterized as a female profession by the expressive number of women who make up the profession. Historically women have always played the role of caregivers, seeking to build and conquer their space in the world of work and in society⁽³¹⁾. In the present study, with Nursing students, we can observe this reality, with the predominance of females, a similar result was found in research conducted with students from another university⁽³²⁾ and other studies⁽³³⁾. Most of the participants in this study were single and without children. Close results were found in a study with nursing students at *Universidade Estadual do Mato Grosso do Sul*⁽³²⁾. The average age group showed a young population with concentrated work activity in the morning and afternoon, similar to a study with nursing students from *Vale da Paraíba* (Paraíba Valley)⁽³⁴⁾.

It is known that the practice of physical activity brings health benefits in general, regarding this item a large portion of participants reported not practicing physical activity in relation to those who practiced. Similar result was found in another study with *Universidade de Natal* nursing students (UFRN)⁽³⁵⁾.

There was a higher frequency of alcohol consumption among participants. This is a worrying fact, since such consumption is not recommended for social and nutritional reasons, when compared to other studies, with health students, where most academics reported never consuming alcoholic beverages⁽³⁶⁾, and with nutrition students, and nursing, where almost half did not drink alcohol⁽³⁷⁾. Regarding smoking, there was a predominance of non-smoking participants, similar to Lebanese undergraduate students⁽³⁸⁾.

Regarding the eating behavior of the participants, a large portion ate from 1 to 4 meals a day, similar to the study with undergraduate students from the countryside of Bahia⁽³⁹⁾. The adoption of healthy eating contributes to the prevention of heart disease, obesity, some cancers, and other chronic diseases, such as diabetes.

Study participants consumed breakfast regularly, had lunch, and a little more than half said they had dinner regularly, this result corroborates a study with undergraduate students from the state of Santa Catarina⁽⁴⁰⁾. The eating habits of the researched population had characteristics

similar to the traditional Brazilian diet, with consumption of beans and rice⁽⁴⁰⁾.

The *Guia Alimentar para a População Brasileira* (GAPB – freely translated as Food Guide for the Brazilian Population)⁽⁴¹⁾ recommends water consumption of at least two liters (six to eight glasses) of water per day. Most participants in this study reported consuming 500 milliliters to one liter, and a good portion consumed one to two liters daily. Regarding the consumption of fast foods, half of the participants did not eat and slightly more than a third of them consumed once a week. In a study conducted in health courses at a private university in the state of Goiás found that 35.1% of academics consumed fast foods, often one to four times a month⁽³⁶⁾. The mean BMI value of this population, according to the WHO classification criteria, was characterized as overweight (mean BMI value: 25.61 kg/m²) to adequate (considering the standard deviation of 5.02), as WHO BMI reference values between 18.5 and 24.9 kg/m², as appropriate, and between 25.0 and 29.9 kg/m², as overweight⁽⁴²⁾. Results differ when compared to a study with nursing students from Turkey⁽³³⁾ and medical students from the state of Rio de Janeiro, where a BMI classified as adequate weight was observed⁽⁴²⁾. It can be said that the bad habits of life, highlighting the lack of physical activity and the stressful routine of working and attending a night shift graduation, may contribute to the prevalence of overweight in this population.

In the general questions about WHOQOL-BREF finger quality, the results observed in this study showed that 38.34% of students rated their overall quality of life as neither bad nor good, and also 38.34% as good, and in relation to perception. 36.98% were satisfied with their health. A study conducted in six nursing courses in southern Brazil differs from the present study and showed that 72% of respondents rated their quality of life as good or very good. 32.3%, including 'very dissatisfied', 'dissatisfied' and 'neither satisfied nor dissatisfied', answered how satisfied they are with their health⁽⁴³⁾. Another study, with nursing students from Brasilia, showed that 85.4% of respondents rated their quality of life as good or very good and 34.6% said they were dissatisfied or neither satisfied nor dissatisfied with their health⁽⁴⁴⁾. Regarding the domains evaluated through the WHOQOL-BREF, it was observed that there was a difference between the environment domain and the other domains. The social domain had the highest scores, the physical domain was second, followed by the psychological domain and the environment domain had the lowest average among the four. Similar results that share with those obtained in this work were found in two studies conducted in nursing courses⁽⁴³⁻⁴⁴⁾ and health courses⁽⁴⁵⁾.

Most participants had poor sleep quality. These data are in accordance with the literature, corroborating a study with nursing students from Turkey⁽³⁴⁾, the United States⁽⁴⁶⁾ and also in agreement with studies with undergraduate students in general⁽¹⁹⁾ and medical students⁽⁴²⁾. Regarding the usual sleep efficiency component, a greater than 85% sleep efficiency was determined for most participants, a very different result from the study at *Universidade Federal do Ceará*, which ranked the component in the worst range for usual sleep efficiency⁽¹⁹⁾. Regarding sleep latency, almost half of the participants indicated that it took, on average, 31 to 60 minutes to fall asleep, which differs from the study conducted at *Universidade Federal do Ceará*, in which most of the students interviewed indicated that took 15 minutes or less to fall asleep in the last month⁽¹⁹⁾.

However, it is a fact that technological advances, such as notebook, tablet and especially smartphones, with internet access,

are factors that can hinder the onset of sleep. Students routinely reserve free spaces at night or those for break time to use services such as email, social networking, movies and games. In a study of Japanese teenagers from a public high school, long hours of cell phone use were found to be associated with insomnia, particularly in students who use cell phones for five hours or more per day⁽⁴⁷⁾. In another study, on the impact of overuse of mobile phones and social networks and sleep quality on medical students from Iran, it found that poor sleep quality is closely associated with lifestyle habits, including mobile phone use⁽⁴⁸⁾. Study participants answered questions about the use of electronic devices such as cell phones, tablets and notebooks before bed, almost all of them made use of these devices, and 40.1% rated the quality of sleep after use of such devices as good, although the PSQI score classifies these students' sleep as poor quality.

The evaluated students presented an average sleep duration of 6.49 hours per night, similar to the study with the undergraduate students of Fortaleza, which presented an average of 6.3 hours per night⁽¹⁹⁾. It is noteworthy that sleep deprivation is a worrying factor, since it causes decreased academic performance⁽⁴²⁾.

In a research⁽⁴⁹⁾ with higher education students, a negative and significant correlation was found between the physical, psychological, social and environmental domains of WHOQOL-BREF and PSQI. A similar result was also obtained in a study with undergraduate medical science students⁽⁵⁰⁾. It is combined with the results of the present study, demonstrating that sleep quality has an impact on the students' quality of life, in all its domains, and may impair academic performance. In other words, the better the sleep quality, the better the quality of life.

Students in the eighth period were the ones who most claimed to have insomnia. This fact is possibly due to the intensification of academic requirements, in the different opportunities of teaching and research, the need to work for its own maintenance, the closeness of the undergraduate course and its responsibilities and the life expectancy as a student/professional graduate. This data was also demonstrated in a study with Italian nursing students, where it was observed that changes in sleep pattern were frequent. There was a prevalence of insomnia and there was an increase of this change with advancing age of students⁽²⁰⁾.

Study limitations

As one of the limitations of the study, we identified the number of participants evaluated from a single institution. A limited number was characterized, which may not correspond to the generalization of the data obtained, pointing to the need for future research involving other institutions to compare academic performance and its relationship with living standards, food and sleep quality. It is recommended that further studies be conducted for longer periods and with larger samples.

Contributions to nursing

The results from this study may contribute to the design of strategies to identify the difficulties experienced by these students in the environmental, psychological, social and physical environment, favoring the search for solutions to conflicts that

affect the quality of life. Therefore, the present study suggests that Brazilian universities create spaces for health promotion of these nursing students in the scope of quality of life, promoting the development of preventive programs that guide students about the importance of sleep in their personal and social life.

CONCLUSION

The nursing students' profile showed unsatisfactory sleep, sleep latency above 30 minutes, and an average of six hours of bed sleep. Most students of the last undergraduate period reported insomnia. In the analysis of the domains of quality of life, the environmental domain was the worst evaluated and the social domain was the best scored. Students in this group did not practice physical activity and presented, according to values found for BMI, overweight.

The results obtained in this research are similar to those in the literature. These results suggest that poor quality sleep in college students is a major factor in quality of life and a sign for educational institutions to review their internal policies for the health and improvement of their students' lifestyle. Thus, it can contribute to the design of strategies to identify the difficulties experienced by these students in the environmental, psychological, social and physical environment, favoring the search for solutions to conflicts that affect the quality of life and sleep quality.

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