



## ORIGINALES

### Quality of life of nursing students during the COVID-19 pandemic: a cross-sectional study

Cualidade de vida dos graduandos de enfermagem durante a pandemia de covid-19: estudo transversal

Calidad de vida de estudiantes de enfermería durante la pandemia de covid-19: un estudio transversal

Francisca Edinária de Sousa Borges<sup>1</sup>

Cristina da Silva Fernández<sup>1</sup>

William Caracas Moreira<sup>2</sup>

Glaubervania Alves Lima<sup>1</sup>

Roseane Luz Moura<sup>3</sup>

Joselany Afio Caetano<sup>1</sup>

<sup>1</sup> Federal University of Ceará, Ceará, Brazil. [edinariasousa@hotmail.com](mailto:edinariasousa@hotmail.com)

<sup>2</sup> Federal University of Paraíba, Health Sciences Center, João Pessoa, PB, Brazil.

<sup>3</sup> University of Fortaleza, Fortaleza, CE, Brazil.

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#### ABSTRACT:

**Introduction:** Nursing students experience university life as an ambiguous experience, sometimes perceiving the university as a generator of suffering and sometimes characterizing it as a space for intellectual, sociocultural, affective, and political development. The COVID-19 pandemic brought other perspectives from the students to the university context, describing it as an environment of physical and emotional overload, with consequent influence on the Quality of Life, given that the pandemic potentially affected this population physically, academically, financially, and psychologically.

**Objective:** To describe the quality of life of nursing students during the COVID-19 pandemic using the WHOQOL-bref domains.

**Material and Method:** A cross-sectional descriptive study was conducted with 59 nursing students, from July to August 2020, at a public university. The questionnaire covered sociodemographic characteristics and the WHOQOL-bref questions. The data were processed in the Statistical Package for the Social Sciences 20.0 for descriptive analysis, and the weighted average of the WHOQOL-Bref domains was obtained. The study was developed following Resolution n° 466/2012.

**Results:** The domains that most needed improvement were the physical (sleep and rest, energy and fatigue, and daily physical activity) and environmental domains (recreation/leisure).

**Conclusion:** Questions on general quality of life and satisfaction with health demonstrated the need for improvement, possibly influenced by the COVID-19 pandemic.

**Keywords:** Nursing; Quality of life; Nursing Students; Health; COVID-19.

## RESUMO:

**Introdução:** Os estudantes de Enfermagem vivenciam o contexto universitário como experiência ambígua, concomitante ao apontamento da universidade como geradora de sofrimento, a caracterizam, também, como capaz de proporcionar desenvolvimento intelectual, sociocultural, afetivo e político. No entanto, a pandemia de COVID-19 trouxe outros olhares do público estudantil para o contexto do ensino superior, ao descrevê-lo como ambiente de sobrecarga física e emocional, com consequente influência na Qualidade de Vida desses estudantes, dado que a pandemia tem o potencial de afetar esse público em âmbito físico, acadêmico, financeiro e psicológico.

**Objetivo:** Descrever a Qualidade de Vida de graduandos em Enfermagem, a partir dos domínios do *WHOQOL-bref*, durante a pandemia de COVID-19.

**Material e Método:** Estudo transversal, descritivo, com 59 acadêmicos de enfermagem, realizado de julho a agosto de 2020 em uma Instituição Pública de Ensino Superior. Aplicou-se questionário sociodemográfico e o *WHOQOL-bref*. Os dados foram processados no *Statistical Package for the Social Sciences* 20.0 para análise descritiva e foi realizada a média ponderada das facetas do *WHOQOL-Bref*, como, dos domínios. O estudo foi desenvolvido respeitando a Resolução nº 466/2012.

**Resultados:** Os domínios que mais necessitaram de melhorias foram o físico (relacionado a sono e repouso, energia e fadiga e atividade física cotidiana) e o meio ambiente (relacionado à recreação/lazer).

**Conclusão:** As questões sobre Qualidade de Vida geral e satisfação com a saúde demonstraram a necessidade de melhoria em ambos os questionamentos, o que pode ter sido influenciado pela pandemia da COVID-19.

**Palavras-chave:** Enfermagem; Qualidade de Vida; Estudantes de Enfermagem; Saúde; COVID-19.

## RESUMEN:

**Introducción:** Los estudiantes de enfermería viven el contexto universitario como una experiencia ambigua, concomitante con la identificación de la universidad como generadora de sufrimiento, además la caracterizan como capaz de propiciar desarrollo intelectual, sociocultural, afectivo y político. Sin embargo, la pandemia del COVID-19 trajo otras miradas del público estudiantil al contexto de la educación superior, al calificarlo como un ambiente de sobrecarga física y emocional, con la consecuente influencia en la Calidad de Vida de estos estudiantes, dado que la pandemia tiene el potencial de afectar a esta audiencia en el ámbito físico, académico, financiero y psicológico.

**Objetivo:** Describir la Calidad de Vida de los estudiantes de graduación en Enfermería, con base en los dominios del *WHOQOL-bref*, durante la pandemia de COVID-19.

**Material y Método:** Estudio descriptivo transversal con 59 estudiantes de enfermería, realizado de julio a agosto de 2020 en una Institución de Educación Superior Pública. Se aplicó un cuestionario sociodemográfico y el *WHOQOL-bref*. Los datos fueron procesados utilizando el Paquete Estadístico para las Ciencias Sociales 20.0 para el análisis descriptivo y se realizó el promedio ponderado de las facetas del *WHOQOL-Bref*, como de los dominios. El estudio fue desarrollado en cumplimiento de la Resolución N° 466/2012.

**Resultados:** Los dominios que más necesitaban mejorar eran el físico (relacionado con el sueño y el descanso, la energía y la fatiga y la actividad física diaria) y el ambiental (relacionado con la recreación/ocio).

**Conclusión:** Las preguntas sobre Calidad de Vida General y satisfacción con la salud demostraron la necesidad de mejora en ambas preguntas, lo que puede haber sido influenciado por la pandemia de COVID-19.

**Palabras clave:** Enfermería; Calidad de vida; Estudiantes de Enfermería; Salud; COVID-19.

## INTRODUCTION

Nursing students experience the university context as an ambiguous experience, sometimes perceiving the university as a generator of suffering and sometimes characterizing it as a space for intellectual, sociocultural, affective, and political development<sup>(1)</sup>. However, the COVID-19 pandemic brought other perspectives from the students to the university context, describing it as an environment of physical and emotional overload, with a consequent influence on the Quality of Life (QoL), given

that the pandemic potentially affected this population physically, academically, financially, and psychologically<sup>(2)</sup>.

In this context, the advent of the COVID-19 pandemic made it necessary to investigate the dynamic interaction between the pandemic conditions and the internal perception of these experiences by university students, which justifies the increasing interest in measuring the QoL of this public, capturing individuals' perceptions of health, hope, expectations, and feelings during the pandemic<sup>(3)</sup>. In addition, the assessment of QoL has also been considered an important result in the provision of health care in different settings<sup>(4)</sup>.

Research carried out in Europe, the Middle East, and Asia indicates that, during the COVID-19 pandemic, Nursing undergraduate students have reported worse results in psychological distress and general QoL, in addition to demonstrating an inverse, moderate, significant relationship between psychological resilience and the impact of COVID-19 in QoL. These studies report, as gaps, the need to explore the coping strategies used by students during the pandemic and investigate the QoL of this population in other countries and regions, supporting future research that compares the QoL of this public in different scenarios<sup>(5-9)</sup>.

Given the above, this study is justified by the lack of Brazilian studies in the northeast, especially in Piauí State, assessing the QoL of nursing students during the COVID-19 pandemic. In addition, the study's relevance is based on the possibility of generating data for future comparisons on the impact of the pandemic on people from different states, regions, and countries.

It should be noted that describing the QoL of nursing students can help ensure adequate interventions to improve physical and mental health, as well as strategies to improve the level of independence, social relationships, beliefs, and personal beliefs of these individuals. The assessment of QoL can favor the implementation of public policies, minimizing acute health scenarios and limitations that these subjects have. Thus, this study aimed to describe the quality of life of nursing students during the COVID-19 pandemic using the WHOQOL-bref domains.

## **MATERIAL AND METHODS**

This is a cross-sectional descriptive study conducted from July to August 2020 in a Public University located in the center-south of Piauí, Brazil. The research scenario was selected because the university is the second largest for the population entering higher education in Piauí.

The study population consisted of 72 students enrolled in the bachelor's degree in nursing. The sample was obtained using the formula  $n_0 = \frac{z^2}{4e^2}$ ;  $n = \frac{n_0}{1 + (n_0/N)}$ , where "n<sub>0</sub>" is the first approximation of the sample size, "Z" is the critical value of Z (depending on the confidence level), "e" is the margin of error, "N" is the population size, and "n" is the sample size. A sampling error of 5% and a confidence level of 95% were used. Therefore, a sample of 61 participants was obtained. However, there was a sample loss of two subjects, as they did not fully respond to the data collection instrument, resulting in a final sample of 59 students.

The sample inclusion criteria were: age equal to or greater than 18 years, being regularly enrolled in the nursing program, and having an instant messaging application account. Students who were away on maternity or sick leave during the data collection period were excluded.

Data were collected online via an instant messaging application. The participants received the invitation, in text format, on the smartphone and, upon acceptance, signed the Informed Consent Form and received the questionnaire divided into two parts, the first containing sociodemographic data, and the second the WHOQOL -bref.

The WHOQOL-bref is an instrument composed of 26 questions, with responses on a five-point Likert scale, developed by the WHO in 1998 and validated for the Portuguese language to assess the QoL of adult subjects<sup>(10)</sup>. Two questions refer to the individual perception of QoL, and the others are subdivided into four domains and represent each of the 24 facets that make up the original WHOQOL-100 instrument<sup>(11)</sup>. Data were processed using the Statistical Package for the Social Sciences (SPSS) version 20.0 for descriptive analysis based on simple, absolute, and percentage frequencies for categorical variables and measures of central tendency (average) for quantitative variables. In addition, the weighted averages of the facets and domains of the WHOQOL-Bref were calculated, classifying the QoL as "needs improvement", 1 to 2.9, "regular", 3 to 3.9, "good", 4 to 4.9, and "very good", 5.

The study was developed according to the ethical and legal principles of Resolution No. 466/2012 of the National Health Council of Brazil, which regulates and approves guidelines and standards of research involving human beings<sup>(12)</sup>. The research received a positive opinion from the Ethics and Research Committee of the State University of Piauí with opinion nº 3.835.037 and CAAE22713719.9.0000.5209.

## RESULTS

The study included 59 nursing students enrolled between the third and tenth periods of the program. The sample consisted of 48 (81.4%) female participants and 11 (18.6%) male participants. As for age, 56 (95%) were 19 to 25 years old, and three (5.0%) were aged 28 to 35. Regarding skin color, 27 (45.8%) declared themselves brown, 23 (39%) white, and nine (15.2%) black. Regarding marital status, 52 (88.1%) were single, and seven (11.9%) were in stable relationships. Concerning the number of children, eight (13.6%) had one child, one (1.7%) had more than one child, and 50 (84.7%) had no children. As for work activities, 48 (81.4%) had no job, nine (15.3%) had an informal job, and two (3.3%) had a formal job.

When asked about the perception of general QoL and satisfaction with health through the WHOQOL-Bref's questions, the participants classified the items as "needs improvement" since the general averages of the QoL score and health were 2.73 and 2.72, respectively. The participants also answered questions related to the facets of the four domains of the instrument, namely: physical, psychological, social relations, and environment, as shown in tables 1, 2, 3, and 4.

**Table 1** - Distribution of undergraduate nursing students' responses regarding facets of the physical domain of the WHOQOL-bref. Picos, PI, Brazil, 2020

Facets of the physical domain	n (%)					Average
	Not at all	A little	A moderate amount	Very much	Extremely	
Pain and discomfort	11 (18.6)	22 (37.3)	20 (33.9)	6 (10.2)	0	3.63
Dependence on medication/ medical aids	22 (37.3)	24 (40.7)	13 (22)	0	0	4.14
	Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied	
Sleep and rest	0	23 (39)	19 (32.2)	12 (20.3)	5 (8.5)	<b>2.96*</b>
Activities of daily living	0	20 (33.9)	22 (37.3)	13 (22)	4 (6.8)	<b>2.99*</b>
Work capacity	0	0	23 (39)	30 (50.8)	6 (10.2)	3.69
	Very poor	Poor	Neither poor nor good	Good	Very good	
Mobility	0	1 (1.7)	8 (13.6)	11 (18.6)	39 (66.1)	4.47
	Not at all	A little	Average	Very	Completely	
Energy and fatigue	0	22 (37.2)	28 (47.5)	8 (13.6)	1 (1.7)	<b>2.78*</b>

\*Facets that need improvement, according to WHOQOL-Bref.  
Source: survey data (2020)

The students presented an average of 3.52 in the physical domain, rated as "regular". However, in the sleep and rest, activities of daily living, and energy and fatigue facets, there was a need for improvement since 23 of the students were dissatisfied with their sleep and rest pattern (39%), and 22 had little energy for everyday life (37.2%).

The dissatisfaction with sleep mentioned by the students may result in reduced energy to carry out daily activities such as physical exercises. Therefore, aspects of the academic routine may have worsened due to the COVID-19 pandemic and need intervention. The other questions were classified as regular or good.

**Table 2** - Distribution of undergraduate nursing students' responses regarding facets of the psychological domain of the WHOQOL-bref. Picos, PI, Brazil, 2020

Facets of the psychological domain	n (%)					Average
	Not at all	A little	A moderate amount	Very much	Extremely	
Positive feelings	1 (1.7)	9 (15.3)	22 (37.2)	18 (30.5)	9 (15.3)	3.40
Spirituality/religion/personal beliefs	1 (1.7)	2 (3.3)	5 (8.5)	24 (40.7)	27 (45.8)	4.22
Thinking, learning, memory, and concentration	0	7 (11.9)	28 (47.5)	23 (38.9)	1 (1.7)	3.28
	Not at all	A little	Moderately	Mostly	Completely	
Bodily image and appearance	1 (1.7)	6 (10.2)	16 (27.1)	24 (40.7)	12 (20.3)	4.65
	Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied	
Self-esteem	0	1 (1.7)	15 (25.4)	28 (47.5)	15 (25.4)	3.95
	Never	Seldom	Quite often	Very often	Always	

Facets of the psychological domain	n (%)					Average
Negative feelings	3 (5.1)	35 (59.3)	11 (18.6)	7 (11.9)	3 (5.1)	3.45

Source: survey data (2020)

As for the psychological domain, the students presented an average of 3.82, rated as "regular". The participants had a regular and good QoL in most facets of this domain in the questions related to spirituality and body image, with an average of 4.22 and 4.65, respectively, which indicates the potential to improve the well-being of this population.

Regarding negative feelings, the results show that only three (5.1%) students never experienced negative feelings such as anxiety, depression, bad mood, and despair. The data provide an alert for the institution since a higher percentage of participants experienced such feelings seldom, quite often, very often, or always.

**Table 3** - Distribution of undergraduate nursing students' responses regarding facets of the social relations domain of the WHOQOL-bref. Picos, PI, Brazil, 2020

Facets of the social relationships domain	n (%)					Average
	Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied	
Personal relationships	1 (1.7)	2 (3.4)	14 (23.7)	29 (49.2)	13 (22)	3.84
Sexual activity	3 (5.1)	5 (8.47)	9 (15.25)	25 (42.37)	17 (28.81)	3.79
Social support	3 (5.1)	3 (5.1)	12 (20.3)	31 (52.5)	10 (17.0)	3.70

Source: survey data (2020)

Regarding the social relations domain, the students had an average of 3.77, rated as "regular". Besides, all facets belonging to this domain were rated as regular. Therefore, students' social relations may have been impaired by higher education activities or social isolation due to the COVID-19 pandemic.

**Table 4** - Distribution of undergraduate nursing students' responses regarding facets of the environmental domain of the WHOQOL-bref. Picos, PI, Brazil, 2020

Facets of the environmental domain	n (%)					Average
	Not at all	A little	A moderate amount	Very much	Extremely	
Freedom, physical safety, and security	0	6 (10.16)	25 (42.37)	25(42.37)	3 (5.1)	3.41
Physical environment	1 (1.7)	3 (5.1)	22 (37.3)	29 (49.2)	4 (6.7)	3.51
	Not at all	A little	Average	Very	Completely	
Financial resources	1 (1.7)	10 (16.9)	34 (57.6)	8 (13.6)	6 (10.2)	3.10
Opportunities for acquiring new information and skills	0	0	22 (37.3)	29 (49.2)	8 (13.5)	3.74
Participation in opportunities for recreation/leisure activities	1 (1.7)	27 (45.76)	25 (42.37)	5 (8.47)	1 (1.7)	<b>2.60*</b>
	Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied	
Home environment	0	1 (1.7)	6 (10.2)	33 (55.9)	19 (32.2)	4.17
Health and social care	0	5 (8.47)	18 (30.43)	29 (49.2)	7 (11.9)	3.62
Transport	3 (5.1)	1 (1.7)	16 (27.1)	29 (49.2)	10 (16.9)	3.69

\*Facets that need improvement, according to WHOQOL-Bref.  
Source: survey data (2020)

The environmental domain averaged 3.48, rated as "regular". However, some students considered that their participation in recreation/leisure activities needed improvement, possibly influenced by the social isolation imposed by the COVID-19 pandemic. The

other facets were classified as "regular" or "good". In the latter, there is one question regarding the home environment, which can be interpreted as a space for improving the QoL.

## DISCUSSION

The students who participated in the research were predominantly female, aged 19 to 25 years old, of brown skin color. Similar results were found in a study on QoL developed with students of a nursing program in the Federal District of Brazil, in which the majority were female, aged from 18 to 21 years, and brown<sup>(13)</sup>. The data found in our study and the one cited above show the historical predominance of women in nursing programs.

Still, on the profile of the participants, corroborating the results found, a prior study evaluated the impact of the COVID-19 pandemic on the QoL of nursing students and identified a prevalence of single persons, which evidences the fact that young persons have postponed the decision to start a family, prioritizing professional life and financial stability<sup>(14)</sup>. Regarding the number of children, diverging from our results, a prior study carried out with 102 students from the psychology program identified that 71 (69.6%) had at least one child<sup>(15)</sup>.

Regarding work activities during the undergraduate period, prior research assessing the difficulties experienced by nursing students during their training identified that 11 (61.1%) had no job<sup>(16)</sup>. The results agree with our findings since 48 (81.4%) students had no job, dedicating themselves exclusively to their studies.

Civil engineering and medicine students at the University of Rio de Janeiro, Brazil, had their QoL analyzed using the WHOQOL-Bref. Civil engineering and medical students considered their QL "good" or "very good", 31 (79.48%) and 107 (74.82%), respectively. Twenty-seven (69.23%) civil engineering students and 71 (49.65%) medicine students stated that they were "satisfied" or "very satisfied" with their health<sup>(17)</sup>. These findings differed from ours since the nursing students that participated in our study reported that their general QoL and health needed improvement.

The physical domain reached an average of 3.52, rated as regular. The sleep and rest facet had an average of 2.96, indicating the need for improvement. In a study carried out with nursing students at a private university in João Pessoa, Paraíba, the average for this domain was 3.6<sup>(18)</sup>. 'Sleep and rest' was the item with the worst evaluation by medical students from an institution in Maceió, in Alagoas State<sup>(11)</sup>. Being at university can influence the quality of sleep of students. The results call attention to assessing the situations influencing the sleep and rest domain so that improvement strategies can be adopted.

The alterations in the sleep and rest pattern, associated with the low average of daily physical activity, can directly influence the students' work capacity, energy, and fatigue. The average of 2.78 in the energy and fatigue facet demonstrates fragility. Similar results were found in a prior study that assessed the QoL of medical students from the University of Uberaba. The authors identified a vicious cycle of sleep deprivation, tiredness, and lack of energy, causing a reduction in the students' QoL <sup>(19)</sup>.

A study carried out with students from the second to the eighth semester of the medical program at a public university in the countryside of Goiás identified a better QoL among students involved in physical activities, reaching higher scores in the physical domain<sup>(20)</sup>. The results differ from those found in our study, in which the average achieved by the students for the daily physical activity facet was 2.99, the third lowest score, evidencing the need for improvement.

Prior research assessing students' mental health in the medical program's first, second, and third years presented the following values in the psychological domain: 3.39, 3.49, and 3.23<sup>(21)</sup>. These results are lower than that found in our study, which was 3.82. Corroborating these results, another study carried out with first-year medical students at a university in São Paulo identified that 60.6% of students assessed this domain as "regular"<sup>(22)</sup>.

Authors of prior research identified a high prevalence of depressive symptoms in nursing students<sup>(23)</sup>. The study's findings reflect the importance of turning attention to the public's physical and emotional health and reinforce that it is crucial to talk about this topic in the academic environment.

It was observed that the spirituality/religion/personal beliefs facet, belonging to the psychological domain, reached an average of 4.22, corroborating the result found in a study carried out with students of a dentistry program, who declared having a religion and were satisfied with their QoL<sup>(24)</sup>. Differently from our results, a prior study conducted with physical education students from the Federal University of Acre obtained an average of 2.57 in this facet, identifying the need for improvement<sup>(25)</sup>.

The facets of positive and negative feelings reached, respectively, averages of 3.40 and 3.45, rated as "regular". A study carried out with medical students identified that the change in the school period, insertion of more complex subjects, and changes in the workload provoked positive or negative feelings among students, leading to anxiety and stress<sup>(19)</sup>. When assessing the QoL of students in a technical management course, the authors observed that the negative feelings facet needed improvement, which characterizes a "poor" pattern<sup>(26)</sup>.

Thinking, learning, memory, and concentration was the facet of the psychological domain that reached the lowest average, 3.28. A similar result was found by authors who assessed the QoL of students from a physical education program, obtaining a rate of 3.78, classified as "regular" <sup>(25)</sup>. The deficiency reported in the sleep and rest facet may have influenced these results, as the tiredness caused by the lack of rest can interfere with memory and concentration.

The social relations domain achieved the best results in a survey developed with medical and civil engineering students at a university in Rio de Janeiro<sup>(17)</sup>. This finding differs from ours, as the average achieved by nursing students was 3.77, rated as "regular". A qualitative study using the photovoice process concluded that students have an intense study routine, lack time, and have difficulty reconciling personal and academic life<sup>(27)</sup>.

The last domain, about the environment, was also classified as regular, with emphasis on the recreation/leisure facet, which reached an average of 2.60, showing that the students consider that there is a need for improvement. In a prior study that evaluated

the QoL of dentistry students during the COVID-19 pandemic, this domain reached the highest average<sup>(24)</sup>. However, it is worth mentioning that the COVID-19 pandemic may have influenced the findings, as the disease containment measures adopted by each state may have contributed to the low scores in the recreation/leisure facet. The intense study load also reflects the little time available for recreation/leisure activities, and this restriction can compromise the future QoL of students<sup>(11)</sup>.

The financial resources facet reached the second lowest average of the domain, 3.10, followed by the freedom, physical safety, and security facet, which had an average of 3.41, classified as "regular". Some authors found a similar result that assessed the QoL of nursing, pharmacy, physiotherapy, speech therapy, joint health, and occupational therapy students, in which the two facets above and "recreation/leisure" had the poorest results<sup>(28)</sup>.

The "opportunities for acquiring new information and skills" were rated by the study participants as "regular". A similar result was found by the authors of a prior study on the QoL of nursing students from a public university in northern Brazil<sup>(29)</sup>.

The study presents, as a contribution to clinical practice and research in nursing, the fact that it enables the detection of difficulties experienced by nursing students, providing subsidies for the formulation of strategies that improve the QoL of this public by providing physical, emotional, and psychological support. The study highlights the need for the university to develop more frequent moments of leisure and interaction on campus.

Given the health situation experienced with the COVID-19 pandemic, the limitation of the study was the need to use electronic data collection due to the need for social distancing measures in the wake of the pandemic. Some participants did not answer the questionnaires. However, the sample size and the collaboration of the participants were decisive for the research. Notably, this work can be used as a basis for scientific studies related to the theme in other programs offered by the university, contributing to a set of data for research.

## CONCLUSION

Nursing students described QoL in all WHOQOL-Bref domains as regular, despite some facets needing improvement, such as physical and environmental. Questions about general QoL and satisfaction with health demonstrated the need for improvement, which the COVID-19 pandemic may have influenced. Satisfaction with sleep and rest, daily physical activity, lack of energy for everyday life, and fatigue were the most aggravating items in the physical domain. Participation in recreation/leisure activities was the main facet needing improvement in the environmental domain.

It is necessary to elaborate interventions for nursing students, emphasizing physical and environmental well-being. With this, it may be feasible to establish benefits for the QoL of these students and ensure the best performance in university activities and satisfaction with general health.

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