

# Depression among nursing students and its association with academic life

*Depressão entre estudantes de enfermagem e sua associação com a vida acadêmica*

*Depresión entre estudiantes de enfermería y su asociación con la vida estudiantil*

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## ABSTRACT

**Objective:** To measure the levels of depression among Nursing students from a public institution of higher education and the association with aspects of academic life. **Method:** Analytical and quantitative study with 203 students from a higher education institution that uses active methodologies. We used Beck's Depression Inventory and the Likert type scale of academic factors. **Results:** We verified that 19.2% had moderate or severe levels of depression. Higher levels of depression were associated with female gender ( $p=0.003$ ), working more than 40 hours per week ( $p=0.047$ ), spending more than 90 minutes to reach academic activities ( $p=0.043$ ) and with 12 academic factors specific to routines of the studied institution. **Conclusion:** The results contribute to managers' and professors' reflection and analysis concerning nursing students' mental health, in addition to indicating in which aspects there is a need to provide greater support to these students. **Descriptors:** Students; Nursing; Depressive Disorders; Mental Health; Nursing; Education, Nursing.

## RESUMO

**Objetivo:** Medir os níveis de depressão entre estudantes de Enfermagem de uma instituição pública de ensino superior e a associação com aspectos da vida acadêmica. **Método:** Estudo analítico e quantitativo com 203 estudantes de uma instituição de ensino superior que utiliza metodologias ativas. Utilizaram-se o Inventário de Depressão de Beck e a escala de fatores acadêmicos do tipo Likert. **Resultados:** Verificou-se que 19,2% apresentaram níveis de depressão moderados ou graves. Maiores níveis de depressão foram associados ao sexo feminino ( $p=0,003$ ), trabalhar mais de 40 horas semanais ( $p=0,047$ ), despender mais de 90 minutos para chegar às atividades acadêmicas ( $p=0,043$ ) e a 12 fatores acadêmicos específicos às rotinas da instituição estudada. **Conclusão:** Os resultados contribuem com gestores e docentes na reflexão e na análise da saúde mental dos discentes de enfermagem, além de indicar em quais aspectos há necessidade de fornecer maior apoio a esses estudantes. **Descritores:** Estudantes de Enfermagem; Transtorno Depressivo; Saúde Mental; Enfermagem; Educação em Enfermagem.

## RESUMEN

**Objetivo:** Medir los niveles de depresión entre estudiantes de enfermería de una institución pública de enseñanza superior y la asociación con aspectos de la vida estudiantil. **Método:** Estudio analítico y cuantitativo con 203 estudiantes de una institución de enseñanza superior que utiliza metodologías activas. Se utilizó el Inventario de Depresión de Beck y la escala de factores académicos del tipo Likert. **Resultados:** se verificó que el 19,2% presentó niveles de depresión moderados o graves. Los mayores niveles de depresión se asociaron al sexo femenino ( $p = 0,003$ ), trabajar más de 40 horas semanales ( $p = 0,047$ ), gastar más de 90 minutos para llegar a las actividades académicas ( $p = 0,043$ ) y a 12 factores estudiantiles específicos a las rutinas de la institución estudiada. **Conclusión:** los resultados contribuyen con gestores y docentes en la reflexión y el análisis de la salud mental de los estudiantes de enfermería, además de indicar en qué aspectos hay necesidad de proporcionar mayor apoyo a esos estudiantes.

**Descriptor:** Estudiantes de Enfermería; Trastorno Depresivo; Salud Mental; Enfermería; Educación em Enfermería.

## INTRODUCTION

Several factors can compromise the mental health of university students, especially those in the health area. These factors include: adaptations to the new academic environment, information overload, stress, lack of leisure time, financial constraints, stressors related to the family, high expectations, demands inherent to job market, yearning towards the professional and personal future, competition for higher grades, lack of coping strategies, adequate study skills and motivation<sup>(1-3)</sup>. This context may induce the triggering of mental disorders or symptoms of mental disorders, which depending on their combination and magnitude can significantly compromise the well-being and the professional training of these students<sup>(1-3)</sup>.

Depressive disorders are listed in the "International Statistical Classification of Diseases and Related Health Problems" (ICD 10) from the World Health Organization<sup>(4)</sup>. Its symptoms compromise mood or affect. Its central symptom is sadness, however, the syndromic diagnosis should include not only mood changes (sadness, apathy, irritability and anhedonia), but also motor, cognitive and vegetative changes (which more frequently include sleep and appetite changes)<sup>(5)</sup>.

Symptoms of depression, regardless of the diagnosis of a depressive disorder, may also arise in other clinical settings, such as: post-traumatic stress disorder, schizophrenia, alcoholism, dementia, clinical diseases and others, or even in specific stress contexts, loss or mourning. Therefore, when these symptoms are presented in an incisive way, even if it is not precisely configured the diagnosis of some type of depression are indicative of stress, difficulties in interaction and social adaptation, low academic and professional performance, or even the presence of other types of mental disorder<sup>(6)</sup>.

Health professionals are especially more vulnerable to compromises in their psychological well-being and mental health due to exposure to a variety of stressors, appropriate to their academic background and the specificity of their work. They are more exposed to human suffering at the most varied levels and contexts<sup>(7-8)</sup>. Therefore, the concern with the incidence of depression symptoms in nursing students is important for a better comprehension of the determinants of mental health impairment of these future professionals, with a view to even more effective procedures for their prevention.

The investigation of possible relations with academic life is relevant to the context of the researched teaching institution, which has a different teaching methodology from the traditional and is based on two axes: Problem-Based Learning (PBL) and a Problematic Methodology (PM), based on the Arch of Maguerez<sup>(9)</sup>.

As they are specific and differentiated pedagogical perspectives, although little used in the Brazilian context of training in health sciences, perhaps many of its possible effects or repercussions, on the psychological well-being of students, still require more accurate and consistent studies<sup>(10)</sup>.

On the other hand, there are factors of academic life, specific to the contexts experienced in each particular institution, which deserve further investigation, whose instruments used in this research focused.

## OBJECTIVE

To assess the levels of symptomatology of depression among nursing students of a public educational institution which adopts a differentiated teaching methodology throughout its curriculum, and to evaluate its association with factors of academic life.

## METHOD

### Ethical aspects

This study was approved by the Research Ethics Committee of the Health Sciences Teaching and Research Foundation in the Federal District, and its development complied with national and international standards of research ethics involving human beings.

### Design, setting and period of study

An analytical and quantitative study was carried out with undergraduate students of the Nursing course at the Health Sciences Higher Education (HSHE), a public higher education institution in Brasília, Federal District. The data collection was carried out during the second half of 2014.

### Sample and instruments of data collection

During 2014, 235 students were regularly enrolled in the Nursing undergraduate course. All students regularly enrolled who accepted to participate in the research were included in the sample. Students who were on long-term leave (with a medical certificate or registration locking) were excluded. Thus, a sample of 203 students was composed with 58 students in 1<sup>st</sup> year, 53 in 2<sup>nd</sup> year, 57 in 3<sup>rd</sup> year and 19 in 4<sup>th</sup> year.

Students were approached during class breaks to participate in the study. If they accepted to participate, by signing the informed consent form, they were asked to complete the questionnaires at that moment.

### Study protocol

For the measurement of the symptoms of depressive disorders among students, we used the Beck's Depression Inventory, which had its first version elaborated in 1961<sup>(11)</sup>, translated and validated for Brazil in 1998<sup>(12)</sup>. This instrument consists of 21 affirmations which measure 4 levels of depression or symptoms of depression, according to the inventory score: without depression, mild depression, moderate depression and severe depression. As a non-clinical sample, nor suspected, a score of less than 15 (cutoff point) was used as indicative of absence of depression, from 15 to 20 as indicative of "mild depression", from 21 to 30 as indicative of "Moderate depression" and above 30 as indicative of "severe depression". It is possible to state that there is depressive disorder (major depression) only for subjects with scores above 20, preferably with a concomitant clinical diagnosis, as scholars in the area recommend<sup>(12)</sup>. To analyze association with other variables, it was considered "without depression" when the student had absence of depression or mild depression, and "with

depression" when the student presented symptoms of moderate or severe depression.

For the evaluation of academic factors, a Likert-type questionnaire was developed composed of 29 affirmations for which there were 4 mutually exclusive options ("totally agree", "partially agree", "partially disagree" and "totally disagree") distributed in 8 classes: quality of life after entering undergraduate studies (questions 1, 3 and 4); time of weekly stay in the HSHE (questions 5, 6, 7, 8 and 22); student participation (questions 9, 10 and 11); home environment (questions 28 and 29); stress related to tests, absence and flunks (questions 2, 12, 15, 16, 17, 18, 20 and 21); rigorous methodology in the application (questions 23 to 27); institutional surveillance and punishment (questions 13, 14 and 19). The 29 statements are listed below:

1. My quality of life has deteriorated since I joined HSHE.
2. Since I joined HSHE my time for leisure activities has decreased.
3. Since I joined HSHE my time for physical activity has decreased.
4. If I stayed longer at HSHE (instead of going home) I would perform better in tests.
5. If HSHE had a college restaurant, I would have more motivation to stay longer in it.
6. If HSHE were closer to my house, I would have more motivation to stay longer in it.
7. If there were more spaces for group study, I would have more motivation to stay longer at HSHE.
8. HSHE is a democratic institution. The students have a voice here.
9. HSHE is a flexible institution where the student has autonomy.
10. At HSHE, students are treated as adults.
11. There is too much surveillance of students' behavior.
12. In my relationship with tutors, the fear predominates.
13. HSHE is a punitive institution in excess.
14. Receiving absence all morning for being late is stressful.
15. There are too many tests in HSHE.
16. I think that the formative evaluation should be no longer fail students.
17. I wish we had objective questions (multiple choice, T or F) in HSHE.
18. The criterion-referenced evaluation requires us to be perfect and this causes a lot of stress.
19. Practical tests are unnecessarily stressful.
20. It would be less stressful for the student if the HSHE were bi-annual.
21. It would be less stressful for the student if the HSHE had a dependency regime.
22. I wish the HSHE had more monitoring service.
23. I get tense during the problems closure, I'm afraid I'll expose myself.
24. Sometimes the tutor knows something simple and does provide the student with an answer. This is demotivating.
25. Problem opening takes a lot of time, which could be better taken advantage of if I were studying.
26. The formulation of hypotheses in the opening of problems

is a waste of time, since we generally do not know the least for it, and we rarely return to them.

27. Uninhibited students with better oratory deceive tutors a lot.
28. My relationship with the people I live with is pleasant.
29. I do not have an adequate home environment to study.

In order to perform the association tests, responses were recategorized in "yes", when marked "totally agree" and "partially agree" and "no", when marked "partially disagree" and "totally disagree".

### Statistics and analysis

According to the evaluation of its distributions through the Kolmogorov-Smirnov Test, continuous variables were expressed as mean and standard deviation (SD) or median and interquartile range (25-75 percentile). Categorical variables were expressed in absolute and relative frequency. For the analysis of Likert-type questions, the transformed score was used for a scale from 0 to 100, with results expressed as mean and standard deviation, with 0 related to the best evaluation and 100 to the worst evaluation. That is, the higher the score, the greater the student's difficulties in his or her academic routine.

We used contingency tables to compare categorical variables and these were assessed by Pearson's  $\chi^2$  test or Fisher's exact test, where appropriate. For continuous variables, we used Student's t test when we had two groups; the Anova's test was used to compare three or more groups. The level of significance was 5% ( $p < 0.05$ ).

The statistical analysis was performed using the *Statistical Package for Social Sciences 22.0 Mac* program (SPSS 22.0 Mac, SPSS Inc., Chicago, Illinois, USA).

### RESULTS

For the students participating in the study, the mean age was 22,14 years old ( $\pm 5.1$ ) with a minimum of 17 years old and the maximum of 44 years old, with most being up to 20 years old (49.3%). Most were female (81.3%) and had a single marital status (91.6%). About one third entered in the course through social quotas (34.1%) and 21.2% engaged in remunerated activity. Regarding the transportation time to reach the places of academic activities, slightly more than half spent up to one hour of commuting (54.9%) (Table 1).

Regarding the levels of depression, we verified that the majority of the students did not show signs of depression (57.2%). However, 19.2% had signs of major depression (moderate and severe) (Table 1).

The socioeconomic factors associated or not with the presence of symptoms of depression are described in Table 2.

The scale of academic factors presented good internal consistency as verified by Cronbach's Alpha of 0.83. In this scale, the mean score was 88.8 points ( $\pm 12.1$ ), verifying the association between the presence of depression and higher scores on the academic factors scale. The specific factors related to the academic routine of the institution concerned associated with higher levels of depression are described in Table 3.

**Table 1** - Distribution of undergraduate Nursing students from a higher education institution regarding sociodemographic characteristics and levels of depression, Brasília, Distrito Federal, Brazil, 2014

Variable	Categories	N=203	%
Levels	1 <sup>st</sup>	67	33.0
	2 <sup>nd</sup>	53	26.1
	3 <sup>rd</sup>	57	28.1
	4 <sup>th</sup>	26	12.8
Gender	Male	38	18.7
	Female	165	81.3
Age range	≤ 20 years old	100	49.3
	21 to 25 years old	77	37.9
	> 25 years old	26	12.8
Marital status	Single	186	91.6
	Married	17	8.4
Means of entrance into the course	Did not inform	24	11.8
	Quota	61	30.0
	College entrance exam	118	58.2
Exercise remunerated activity	Did not inform	24	11.8
	No	141	69.5
	Yes	38	18.7
Weekly hours worked (N=38)	0 – 20 hours	10	26.3
	> 20-40 hours	25	65.7
	> 40 hours	3	8.0
Transportation time for academic activities	Did not inform	30	14.7
	< 30 minutes	28	13.8
	30 to 60 minutes	67	33.1
	61 to 90 minutes	48	23.7
	> 90 minutes	30	14.7
Type of depression	No signs of depression	116	57.2
	Dysphoria	48	23.6
	Moderate depression	30	14.8
	Severe depression	9	4.4

**Table 2** - Distribution of undergraduate Nursing students from a higher education institution regarding sociodemographic characteristics related to the presence of depression, Brasília, Distrito Federal, Brazil, 2014

Variable	Category	Depression		p*
		No (%)	Yes (%)	
Gender (N=203)	Male	30 (14.8)	8 (3.)	-
	Female	86 (42.4)	79 (38.9)	0.003
Means of entrance into the course (n= 179)	Non-quota students	70 (39.1)	48 (26.8)	-
	Quota students	31 (17.3)	30 (16.8)	0.277
Transportation time for academic activities (n=173)	≤ 90 minutes	86 (49.7)	57 (32.9)	-
	> 90 minutes	12 (6.9)	18 (10.4)	0.043
Remunerated activity (n=179)	≤ 40\$	101 (56.4)	75 (41.9)	-
	> 40\$	0 (0.0)	3 (1.7)	0.047

Note: \* Pearson's  $\chi^2$  test; \$ week hours worked; Differences found in N correspond to loss of information.

**Table 3** - Distribution of undergraduate Nursing students from a higher education institution regarding the academic factors associated with higher levels of depression, Brasília, Distrito Federal, Brazil, 2014

Affirmatives of the scale of academic factors	Agree and partially agree (%)	Disagree and partially disagree (%)	p*
"My quality of life has deteriorated since I joined HSHE."	149 (81.9)	33 (18.1)	<0.001
"Receiving absence all morning for being late is stressful."	163 (89.5)	19 (10.5)	0.035
"Since I joined HSHE my time for leisure activities has decreased."	174 (95.1)	9 (4.9)	0.003
"Since I joined HSHE my time for physical activity has decreased."	168 (91.8)	15 (8.2)	0.001
"HSHE is a democratic institution. The students have a voice here."	62 (33.9)	121 (66.1)	0.006
"HSHE is a flexible institution where the student has autonomy."	76 (41.5)	107 (58.5)	0.003
"At HSHE, students are treated as adults."	107 (58.8)	75 (41.2)	0.019
"HSHE is a punitive institution in excess."	106 (59.2)	73 (40.8)	0.002
"In my relationship with tutors, fear predominates."	60 (33.3)	120 (66.7)	0.041
"It would be less stressful for the student if the HSHE were bi-annual."	131 (72.4)	50 (27.6)	0.028
"Problem opening takes a lot of time, which could be better taken advantage of if I were studying."	71 (39.2)	110 (60.8)	0.002
"I get tense during the problems closure, I'm afraid I'll expose myself."	75 (41.5)	106 (58.5)	0.021

Note: \* Student's T test; HSHE - Health Sciences Higher Education; Differences found in N correspond to loss of information.

## DISCUSSION

According to data from the World Health Organization (WHO), it is estimated that 4.4% of the world population suffers from depression. According to the same source (WHO), in Brazil this index is slightly higher: 5.8%<sup>(13)</sup>. An index of 19.2%, among the students of this study is much above the Brazilian average for the general population. However, there is a greater tendency to symptoms of depression and depression itself among students and health professionals<sup>(7)</sup>.

In other studies, carried out with Nursing students from Brazilian public and private educational institutions, there was a variation in the prevalence of moderate to severe depression symptoms between 6.9% and 12,2%<sup>(14-18)</sup>, levels lower than the results found in the Health Sciences Higher Education.

The results found in this research differ from other studies<sup>(14-17)</sup> although they used the same instrument (Beck's Depression Inventory) with the same cutoff point for the measurement of depressive symptomatology indices. Although the samples are composed of undergraduate students in Nursing, there are different and specific variables involved in the respective institutional contexts.

In this research, there was an attempt to approach these variables through the application of the scale of academic factors (in *Likert* format), elaborated from the conception that it was also necessary to investigate specific factors of the academic life among the students of the institution under study. In addition to measure levels of symptoms of depression, it was also important to know if there was any association between this variable and specific factors in students' academic life. The association between levels of depression and academic life could lead to relevant information to the investigation of the harmful determinants and difficulties that the students of this institution suffer.

Scores on the academic factors scale showed association with the presence of depression. Therefore, there is an association between how students feel about their routines and activities in the institution, that is, between perceptions of discomfort with academic life in the institution and the presence of symptoms of depression. This data suggests that students with greater difficulties in their academic activities present moderate and severe depression (major depression) or vice versa. It is important to emphasize that it is not possible to point out the direction of possible determinants establishing what would be the causes or the effects. This is a limitation of cross-sectional studies and more consistent evidence would be obtained through randomized clinical trials or longitudinal studies.

Three demographic variables were associated with higher levels of depression: female gender, more than 90 minutes of commuting and more than 40 hours of work per week.

Female students presented higher levels of depression and this data is a replication of what occurs with the general population<sup>(4)</sup>. However, in this case, there is no unpublished or specific data to the institution in question, or to Nursing students.

The non-centralized location of the HSHE nursing course seems to be an important demographic factor contributing to the higher levels of depression, since there was an association. Ninety minutes to get to university corresponds to three hours a day spent on transportation, and it seems to be damaging to the psychological and general well-being of the students.

Most of the students reported that their time for physical activities (91.8%), leisure time (95.1%) and quality of life (81.9%) decreased after they started studying at the institution, and this showed an association with levels of depression. It is hypothesized that the shorter availability of time, due to the entrance in the Nursing course, plays a significant role in the increase of depression rates in the institution. This lower availability of time may be related to some factors: time spent with transportation to a college that is not centrally located and easily accessible; course with a great amount of time dedicated, since it is classified as integral and with a methodology that also requires more time of study at home; and a Nursing course with academic load fulfilled in four years.

The results obtained present repeated references to the perception of: institutional inflexibility; excessive punishment; low levels of students' participation in the formulation of projects and statutes governing academic life; anxiety in the interaction with professors and during oral presentations in the dynamic tutorials; and stress due to the course organization in annual grades. These factors are associated with higher levels of depression.

### Limitations of the study

It is important to emphasize, as a limitation, the non-usage of a validated instrument to analyze the academic factors. Nevertheless, this scale showed good internal consistency according to Cronbach's Alpha. It was decided to elaborate its own instrument due to the inadequacy of some instruments to evaluate the reality experienced in the HSHE, mainly in relation to the experience of the active methodologies. Because it is an innovative methodology, few studies present the result of this experience and no research analyzing its impact on students' mental health was found.

### Contributions to the area of nursing, health or public policy

Most studies of depression among university students only measure levels of depression, stress, or other demographic and general factors such as: gender, age, socioeconomic status, whether the student is a quota student or non-quota student, and others. This study points to the importance of also researching contexts specific to the institutions.

The contribution of this research is the attempt to assess specific factors to the studied institution. As there was a general association of the scale of academic factors with Beck's Depression Inventory, as well as an association with 12 factors specific to students' academic routine, it is suggested that new studies on levels of depression among university students also investigate specific and contextual variables.

### CONCLUSION

The levels of depression among students from the studied institution are above the rates observed in the general population. These indexes, as demonstrated, have general association with the academic factors verified and specific association with some factors mentioned by the students. In other words, there is an association between the levels of depression and the students' perception about their academic lives.

We hope that these results will help managers and professors to reflect and analyze more profoundly the effect of academic aspects on the students' mental health, in addition to indicating the need for a more collaborative action with greater institutional support to students who are more vulnerable to higher level of depression.

Therefore, this research shows that future studies concerning levels of depression among university students that aim to investigate possible determinants, may explore the experimental investigation of factors specific to the academic life in educational institutions.

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