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DEPRESSION IN NURSING STUDENTS AND ASSOCIATED FACTORS LA DEPRESIÓN EN LOS ESTUDIANTES DE ENFERMERÍA Y FACTORES ASOCIADOS

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ABSTRACT

Objective: to identify the symptoms indicative of depression in nursing students at a public higher education institution.

Methodology: This descriptive, exploratory study with a quantitative approach was conducted with 122 undergraduates, with data collected by means of applying the Beck Depression Inventory (BDI) and structured questionnaire with questions related to the study.

Results: The data revealed that 54.92% of the students presented minimal levels of depression; 35.25% were within the range of slight to moderate depression; 5.74% reported moderate to severe depression, and 4.1% manifested a severe condition of depression.

Conclusion: Symptoms indicative of depression in some students and a significant increase in the rates of depression in the first semesters, may lead to harm to the student and result in poor academic achievement, in addition to reaffirming the evidence in the literature, demonstrating the urgency of implementing measures to overcome this problem.

INTRODUCTION

The World Health Organization (WHO) has indicated that various factors may lead to depression, such as social, psychological and biologic questions. The WHO data have estimated that approximately 350 million persons worldwide

suffer from depression, and this may generate serious consequences with high morbidity and mortality rates and functional harm (WHO, 2016). Estimates have indicated that 15% to 25% of the general population (1 in 4 persons) will undergo treatment for depression at least once during the course of life (Camargo, 2014). In Brazil, 12% of the

population (23 million persons) requires some mental health care. Of this total, at least 5 million persons suffer serious and persistent mental disorders (Almeida, 2013). Depression is characterized by the loss of interest and pleasure in everything; the feeling of sadness and low self-esteem. The more serious conditions may lead to suicide. In spite of this, the disease continues to be hidden and not treated⁴. The definitions concerning depression have undergone various changes over the course of years and the five Diagnostic and Statistical Manuals of Mental Disorders of the American Psychiatric Association (APA) have gained special attention in the current publications. Before this, the disorder was described in a few lines and/or paragraphs, however, in the latest editions, they cover any stage of individuals' lives (Lima, 2015). Depression scales have been drawn up to measure and characterize the disorder, translating the clinical phenomenon into a body of clear, objective and quantitative information. Moreover, they help with elaborating the diagnosis, follow-up and results of treatment. Therefore, it has become extremely important to seek these instruments, such as the self-applied scales, for clinical and scientific application to help with establishing a precise diagnosis, and recommending the best treatment (Parcias, 2011). Depression results in high rates of absenteeism, being laid off work, harm (cognitive, functional, economic, relationships) and even being dismissed from jobs due to lack of interest, attention and low productivity (Coleta, 2012). These data are considered cause for concern, seeing that not only do individuals with depression fail to assume that they need to seek help, but they are also accustomed to diminishing their productivity at work as well as at home and in their studies. In view of the foregoing, considering the style of life, social context and previous history of mental health, the present article began with the following question: do nursing students experience situations of depression during the periods of their undergraduate studies? Therefore, the objective of this study was to identify the symptoms indicative of depression in nursing students at a public higher education institution.

MATERIALS AND METHODS

This quantitative, exploratory and descriptive study was conducted at a public higher education institution, located in the municipality of Petrolina-PE, Brazil, in the period from October and November, 2015. The study population was 122 nursing undergraduates from the 1st, 3rd, 5th, 7th, 9th and 10th semesters. All the undergraduate students who fulfilled the inclusion criteria, or were regularly enrolled in the course, over the age of 18 years, and who accepted to participate in the study were included, after signing the Term of Free and Informed Consent (TFIC). Data were collected by means of a semi-structured questionnaire, applied by the researchers in a classroom after presenting the objectives of the study. The instrument was composed of a questionnaire prepared by the authors, containing questions pertaining to sociodemographic data and those related to the study, namely: age; semester; sex; marital status; relationship with (a) partner (a), undergoing mandatory or non-mandatory training, religion; leisure; children; income; dependents; with whom they lived; physical activity; health problems, hospitalization for psychiatric reasons; psychological/psychiatric treatment, use of psychotropic agents; continuous medication, perception of

health; perception of wellbeing; use of legal or illegal substances; expectations of and feelings about the course; e and application of the do Beck Depression Inventory (BDI). The BDI is composed of 21 items, including symptoms and attitudes in four degrees of intensity. Each item is comprised of four affirmative responses (0, 1, 2 or 3). There could be more than one response to each question; the alternative with the highest value² was taken into consideration, and it had the following scale of points: fewer than 10 (absence of, or minimal depression); from 10 to 18 (slight to moderate depression); from 19 to 29: (Moderate to severe depression) and from 30 to 63 (severe depression) (Pelai, 2012).

The qualitative variables were analyzed by means of distribution of frequency, with association being verified between the variables by means of the Pearson Chi-square or Exact Fisher tests when the frequencies were shown to be equal to or lower than 5. The qualitative variables were presented by means of the measure of central tendency (mean) and dispersion (standard deviation – SD). As a way of comparing the mean values of scores with the clinical and academic characteristics, the normality of distribution of BDI was tested. This did not present normal distribution by the Shapiro-Wilk test ($p < 0.000$). Therefore, the Mann-Whitney non-parametric test was applied. In addition to analyzing the BDI score, this was dichotomized, allowing logistic regression analysis to evaluate the predictive factors of depression. For this variable, 0 and 1; 0 indicated having minimal or no depression, and 1 indicated having slight to severe depression. Thus, we sought to show the *odds ratio - OR* of the students having slight to severe depression considering their sociodemographic and economic characteristics and considering their clinical, health and academics characteristics in progress at the time of the research.

Initially, bivariate analyses were performed with the independent variables, and the variables with $p < 0.20$ being included in the multivariate model. Thus, they were taken to multiple logistic regression and presented with $OR_{adjusted}$, confidence interval of 95% (IC95%) considering values of $p < 0.05$ significant in the final model. The data were compiled in the *Microsoft Excel 2013 software*, with subsequent migration to *Stata software* (12.0). The study was developed in compliance with the national and international standards of ethics in research involving human beings, and project was forwarded to the Committee on Ethics in Research with Human Beings of the University of Pernambuco and approved under protocol CAAE 47983615.1.0000.5207.

RESULTS

Of the 174 students enrolled in the nursing course, 122 accepted participating in the research in question; their mean age was 21.4 years (SD 3.17; minimum 17, maximum 38; CI 95% 20.83 – 21.96). From the responses of the students participating in the research, the authors observed a higher prevalence of absence of, or minimal depression (54.9%) followed by slight to moderate depression (35.3%). Nevertheless, the presence of moderate to severe depression (54.9%) and severe depression (4.1%) was identified among the students (Table 1).

Table 1. Distribution of nursing students with depression (n=122) according to the IDB classification. Petrolina, Pernambuco, 2015

IDB Classification	n	%
Absence of or minimal depression	67	54.9
Slight to moderate depression (%)	43	35.3
Moderate to Severe depression	7	5.7
Severe Depression	5	4.1
Total	122	100

When analyzing the sociodemographic and economic characteristics, and the association between absence of depression or minimal depression, and slight to severe depression in nursing students, the authors observed no statistically significant difference ($p > 0.05$) between the prevalence of depressive symptoms relative to the variables analyzed. Sex, marital status, religion, presence and number of children, income and life habits were not significant in explaining the differences between absence of depression or minimal depression and slight to severe depression (Table 2).

Table 2. Distribution of the cases of absence of or minimal depression and slight to severe depression according to the sociodemographic and economic variables of nursing. Petrolina-PE, Brazil, 2016

Variables	Absence of or minimal depression	Slight to depression	Severe	Total	p-value	Mean BDI value	SD
	n (%)	n (%)	n (%)				
Sex							
Male	7 (10.4)	9 (16.4)	16 (13.1)	0.335*	9.1	6.6	
Female	60 (89.6)	46 (83.6)	106 (86.9)		10.4	7.4	
Marital Status							
Married	11 (16.4)	8 (14.5)	19 (15.6)	0.523*	10.1	6.8	
Single	56 (83.6)	47 (85.5)	103 (84.4)		10.0	9.5	
Had Religion							
No	6 (9.0)	11 (20.0)	17 (13.9)	0.080*	11.7	6.0	
Yes	61 (91.0)	44 (80.0)	105 (86.1)		10.0	7.5	
Children							
No	63 (94.0)	53 (96.4)	116 (95.1)	0.438**	10.3	7.2	
Yes	4 (6.0)	2 (3.6)	6 (4.9)		8.7	10.2	
Income							
Income<1sal0	60 (89.6)	46 (83.6)	106 (86.9)	0.335*	10.2	7.4	
Income>1sal	7 (10.4)	9 (16.4)	16 (13.1)		10.6	6.5	
Dependents							
2 or fewer	10 (14.9)	14 (25.5)	24 (19.7)	0.145*	12.0	8.0	
3 or more	57 (85.1)	41 (75.5)	98 (80.3)		9.8	7.1	
Living with parents	0	1					
No	27 (40.3)	24 (43.6)	51 (41.8)	0.710*	9.2	6.4	
Yes	40 (59.7)	31 (56.4)	71 (58.2)		11.0	7.8	
Leisure Activity	0	1					
No	1 (1.5)	1 (1.8)	2 (1.6)	0.700**	9.5	0.7	
Yes	66 (98.5)	54 (98.2)	120 (98.4)		10.2	7.4	
Performed Physical Activity	0	1					
No	42 (62.7)	42 (76.4)	84 (68.8)	0.105*	11.2	7.8	
Yes	25 (37.3)	13 (23.6)	38 (31.2)		8.0	5.6	
Age Group	0	1					
Under 20 years	49 (73.1)	34 (61.8)	83 (68.0)	0.182*	9.3	6.9	
20 or more	18 (26.9)	21 (38.2)	39 (32.0)		12.1	7.8	
Total	67 (54.9)	55 (45.1)	122 (100.0)		10.2	7.3	

*Pearson's Chi-square Test

**Exact Fisher Test

SD = standard deviation

When analyzing the associations between the characteristics related to mental health and academic education of the nursing students and the absence of depression or minimal depression and slight to severe depression, the authors observed that the first semesters of the course (1st and 3rd) showed the highest rates of slight to severe depression ($p=0.015$) with the basic cycles presenting a higher score on the depression scale (mean DBI = 12.6; $p = 0.0002$). Whether the students were included in a mandatory training period or not showed no statistically

significant differences between the mean scores and for absence of depression or minimal depression and slight to severe depression ($p > 0.05$). The authors also noted that as the semesters advanced, there was a reduction in the rates of depression, with a small increase in the last semester. This relationship could be shown by the negative correlation between the BDI score and the semester in progress (Spearman Correlation $r = -0.3190$, p -value = 0.0003) indicating that as the student advanced in the course, the BDI score diminished. In spite of the significant result, this correlation was weak. When analyzing the social context in which the student related themselves with the evaluation of the relationship, no association with the occurrence of depression was observed ($p > 0.05$). As regards aspects related to health, the authors observed that the students who reported health problems presented a higher BDI = 9.27 score ($p = 0.0028$). The perception of health, wellbeing and expectations considered regular, poor or extremely bad also presented higher BDI scores (BDI = 8.15, BDI = 7.75 and BDI = 7.86, respectively),

$p < 0.000$. Questions related to undergoing psychological treatment, use of continuous medication or psychotropic drugs were not shown to be statistically related to the occurrence of higher scores of depression ($p < 0.05$) (Table 3). When the predictors for slight to severe depression were analyzed, the authors observed that the presence of health problems and perception of health had an influence on the occurrence of a more severe form of depression.

Table 3. Distribution of the cases of absence of or minimal depression and slight to severe depression in nursing undergraduates, according to the variables related to mental health. Petrolina-PE, Brazil, 2016

Semester in Progress	Absence of or minimal depression n(%)	Slight to Severe depression n(%)	Total n (%)	p-value	Mean DBI value	SD	z (p-value) ^b
1st	12 (17.9)	16 (29.1)	28 (22.9)	0.015**	12.6	7.1	
3rd	10 (14.9)	16 (29.1)	26 (21.3)		12.4	8.3	
5th	11 (16.4)	6 (10.9)	17 (19.3)		8.2	6.6	
7th	20 (29.8)	12 (21.8)	32 (26.2)		8.6	5.6	
9th	13 (19.4)	2 (3.6)	15 (12.3)		6.7	7.5	
10th	1 (1.5)	3 (5.4)	4 (3.9)		13	8.9	
Cycle							
Professional	45 (67.7)	23 (41.8)	68 (55.7)	0.005*	8.3	6.5	-3.771 (p=0.0002)
Basic	22 (32.8)	32 (58.2)	54 (44.3)		12.6	7.6	
Mandatory Training							
Not undergoing training	48 (71.6)	44 (80.0)	92 (75.4)	0.286*	10.7	7.4	1.841 (p=0.656)
Mandatory Training	19 (28.6)	11 (20.0)	30 (24.6)		8.5	8.5	
Evaluation of the relationship							
Good	1 (14.3)	1 (33.3)	2 (20.0)	0.533**	16.5	19.1	0.525 (p=0.5993)
Excellent	6 (85.7)	2 (66.7)	8 (80.0)		5.6	3.9	
Health Problem							
No	63 (94.0)	41 (74.5)	104 (82.3)	0.003**	9.3	6.57	-2985 (p=0.0028)
Yes	4 (6.0)	14 (25.5)	18 (14.7)		15.2	9.27	
Psychological Treatment							
No	63 (94.0)	46 (83.6)	109 (89.3)	0.06**	9.8	6.91	-1.692 (p=0.0906)
Yes	4 (6.00)	9 (16.4)	13 (10.7)		14	9.46	
Psychotropic Drug							
No	64 (95.5)	53 (96.4)	117 (95.9)	0.593**	10.1	7.1	0.304 (p=0.7610)
Yes	3 (4.5)	2 (3.6)	5 (4.1)		11.4	12.14	
Continued Medication							
No	61 (91.0)	39 (70.9)	100 (82.0)	0.004*	9.7	6.9	-1.712 (p=0.869)
Yes	6 (9.0)	16 (29.1)	22 (18.0)		12.4	8.71	
Perception of Health							
Good or excellent	49 (73.1)	17 (30.9)	66 (54.1)	0.000*	6.7	4.01	-5934 (p=0.0001)
Regular, Poor or Extremely bad	18 (26.9)	38 (69.1)	56 (45.9)		14.3	8.15	
Wellbeing							
Good or excellent	43 (64.2)	14 (25.5)	57 (46.7)	0.000*	6.4	4.34	-5691 (p=0.0001)
Regular, Poor or Extremely bad	24 (35.8)	41 (74.5)	65 (53.3)		13.5	7.75	
Expectations							
Good or excellent	61 (91.0)	37 (67.3)	98 (80.3)	0.001*	8.9	6.61	-3.866 (p=0.0001)
Regular, Poor or Extremely bad	6 (9.0)	18 (32.7)	24 (19.7)		15.3	7.86	

*Pearson's Chi-square Test

**Exact Fisher Test

CI95% = Confidence interval of 95%

^b Mann-Whitney Test**Table 4. Results of logistic regression for factors associated with depressive symptoms, in accordance with the Beck inventory and socioeconomic data. Petrolina-PE, Brazil, 2016**

Logistic Regression for Depression	Odds Ratio adjusted	p-value	IC 95%
Age Group			
Under 20 years	0.97	0.968	0.24
20 years or older	1.00		3.89
Had religion			
Yes	0.42	0.142	0.13
No	1.00		1.33
Dependents on income			
Have 3 or more dependents on Income	0.48	0.136	0.18
Have fewer than 3 dependents	1.00		1.26
Performs physical activity			
Yes	0.80	0.676	0.28
No	1.00		2.29
Semester of the Course			
Basic Cycle	0.94	0.608	0.76
Professional Cycle	1.00		1.18
Have health problems			
Yes	4.71	0.043	1.05
No	1.00		21.14
Expectations			
Regular, Poor or Extremely bad	2.50	0.086	0.88
Good/excellent	1.00		7.11
Perception of Health			
Regular, Poor or Extremely bad	3.76	0.010	1.37
Good/excellent	1.00		10.32
Wellbeing			
Regular, Poor or Extremely bad	1.75	0.309	0.59
Good/excellent	1.00		5.17

OR – Odds ratio; IC95% -Confidence Interval for odds ratio

The students in the research, who reported having health problems, had 4 times more chance of having slight to severe depression ($OR = 4.71, p = 0.043$). Whereas the students who perceived their health as being regular, poor or extremely bad presented 3 times more chance of having slight to severe depression ($OR = 3.76, p = 0.010$) (Table 4).

DISCUSSION

Students in general have increasingly been the target of studies about depressive symptoms, however, in spite of this, there is still a scarcity studies on the topic (Assis, 2014). In view of this concern, it has been observed that although depression is an important cause of incapacitation, it is not always detected in time or adequately treated (Furegato, 2010). Thus, there is a body of scientific evidence emphasizing the importance of evaluating aspects relative to emotional wellbeing during the undergraduate period, as well as creating psychological support services directed towards undergraduates (Camargo, 2014 and Furegato, 2010). In this research, the sociodemographic profile of the sample researched showed no statistically significant difference in any of the results, and there was no relationship with other variables such as: mandatory training, evaluation of the relationship with a partner, psychological treatment and use of psychotropic drugs. With respect to the students' sex and religion, no difference was observed between the male and female gender, although some studies have indicated the female sex as being the main target of depression (Souza, 2012; Aradilla-Herrero, 2014 and Sarokhani, 2013). From this perspective, an international study conducted with Chinese students suggested that in places where there are inequalities of right in all genders, for example employment opportunities, women suffer the same type of pressure as men, and there was no difference in the incidence of depression between the sexes (Lei, 2016). This indicates that whether or not depression occurs, irrespective of its severity, has no relationship with social, demographic and/or economic aspects. The results shown in the present study differ from those of a Korean international study, which reported that the worse the economic condition, the higher was the incidence of depression (Kang, 2013). A study conducted with nursing students at the School of Medicine of Botucatu - UNESP, in São Paulo, indicated the students' geographic origin as a trigger factor for depression, because many students lived far from their family, which made many of them feel alone and isolated (Santos, 2013). When the mean family income, leisure and physical activity were evaluated, there was also no statistical significance, as shown in the results of other researches in this field (Costa, 2012 and Mielke, 2012).

In the present study, the authors observed that the numbers of both light to moderate and severe cases of depression were considered higher than those described in other Brazilian studies conducted in Goiás, Brasília and Sergipe. Whereas, in relation to moderate to severe depression, we perceived the numbers to be relatively lower than those in other studies with the same perspective (Camargo, 2014; Costa, 2012 and Moreira, 2013). In the present study, we verified that as the semesters in undergraduate advanced, there was a reduction in the number of cases of depression, with the first and third semesters being those that showed the highest rates of

depression in students, which may be justified by the fact that the beginning of academic life demands more of the students for various reasons, such as: extensive hourly load, lack of time to conciliate studies with leisure activities, first contact with the environment of practices, and overload of theoretical practical activities (work, seminar, tests, among others) (Camargo, 2014 and Olher, 2012). These results indicate points of vulnerability in the initial curriculum of the nursing course that may negatively influence academic life, because in addition to depressive cases, there is harm to habitual activities, increase in the number of students desisting from the course and even suicide. All of this may reflect negatively on both personal and professional life) (Costa, 2012). In spite of a reduction occurring in depressive cases as the course advances, the last semester also presented an increase in these rates, which may be related to the increase in attributions of academic life that involve the Work of Concluding the Course: mandatory training; indecision about the future in the work market; internal pressures and other situations imposed by society, resulting in undergraduates feeling insecure and psychologically overloaded, leading to the development of signs of depression (Moreira, 2013).

The majority of students reported having no health problems or making use of continuous medication, and this was a result similar to those of some existent studies at present (Furegato, 2010; Costa, 2012). Nevertheless, these factors were shown to be associated with the occurrence of slight to severe depression. A higher percentage of depressive symptoms were also found in students that perceived their health and wellbeing to be regular, poor or extremely bad, and is in agreement with the results of other studies on the same topic (Furegato, 2010 and Moreira, 2013). The present study demonstrated that the majority of students classified their expectations of the course as being good or excellent, as was also demonstrated in a cross-sectional study with medical residents at the Federal University of Sergipe¹⁸. These findings led to the inference that depression may be close linked to personal problems, not limited only to academic life, so that it is of the utmost importance for students to be constantly evaluated, not only as regards grades and academic performance, but also the interpersonal contact with these students.

Conclusion

The present study identified the prevalence of indicators of depression in nursing students, including indications of severe depression. Nevertheless, social, demographic and economic characteristics were not important in explaining the problem. Some factors were associated with the occurrence of high BDI scores, such as aspects related to the perception of health and wellbeing, and expectations related to the course. Academic questions, such as the semester to which the student was linked were also related to symptoms indicative of depression. Factors associated with higher chances of slight to severe depression were the perception of regular, poor or extremely bad health, and the presence of health problems. This showed the importance of not only the role of theoretical-technical education played by the university, but also the psychosocial and cultural role, reflecting directly on students' future professional life. It is worth pointing out that the emotional suffering of undergraduates is not limited to the students

themselves, but may have a direct influence on care provided to the patient. Therefore, based on the findings of this study, the authors understood that the research made the relevance of this topic clear, in which the importance of higher education institutions with psychological support directed towards undergraduates and the need for more attention by educators is emphasized, as well as the creation of measures that will enable students to conclude their course without psychic suffering preventing their good performance.

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