RESEARCH | PESQUISA

Predictors of depressive symptoms among nurses of intensive care unit

Preditores da sintomatologia depressiva em enfermeiros de unidade de terapia intensiva

Los predictores de la sintomatología depresiva en enfermeros de unidades de cuidados intensivos

Eduardo Motta de Vasconcelos[1]
Milva Maria Figueiredo De Martino[1]

1. Universidade Federal de São Paulo, Escola Paulista de Enfermagem. São Paulo (SP), Brazil.

Abstract

Objectives: To identify the prevalence and analyze the existence of predictive factors of depressive symptomatology among nurses from intensive care unit. **Methods:** A quantitative, descriptive, cross-sectional study was performed with 91 intensive care nurses. Two instruments were used for data collection performed in July 2014: a sociodemographic questionnaire and the Beck Depression Inventory (version I). Fisher's exact test was used to analyze the existence of associations between depressive symptomatology and categorical variables. **Results:** Eleven percent of the sample presented with depressive symptomatology. Of the variables studied, none was significantly associated with depressive symptomatology (p-value ≥ 0.05). **Conclusion:** The prevalence of depressive symptomatology corresponded to 11%. None of the variables showed a significant association with depressive symptomatology.

Keywords: Nurses; Intensive care units; Stress, psychological; Depressive disorder; Prevalence.

Resumo

Objetivos: Identificar a prevalência e analisar a existência de fatores preditores da sintomatologia depressiva em enfermeiros de unidade de terapia intensiva. **Métodos:** Estudo quantitativo, descritivo, transversal, com 91 enfermeiros de terapia intensiva. Utilizaram-se, na coleta dos dados, em julho de 2014, dois instrumentos: um sociodemográfico e o Inventário de Depressão de Beck em sua versão I. O teste Exato de Fisher foi utilizado para analisar a existência de associação entre a sintomatologia depressiva e as variáveis categóricas. **Resultados:** Apresentaram a sintomatologia depressiva 11% da amostra. Das variáveis estudadas, nenhuma comprovou associação significativa com a sintomatologia depressiva (p ≥ 0,05). **Conclusão:** A prevalência da sintomatologia depressiva correspondeu a 11%. Nenhuma das variáveis comprovou associação significativa com a sintomatologia depressiva.

Palavras-chave: Enfermeiras e enfermeiros; Unidades de terapia intensiva; Estresse psicológico; Transtorno depressivo; Prevalência.

Resumen

Objetivos: Identificar la prevalencia y analizar la existencia de predictores de la sintomatología depresiva en las enfermeras de unidades de cuidados intensivos. **Métodos:** Estudio cuantitativo, descriptivo, transversal, realizado con 91 enfermeros que actúan en unidades de cuidados intensivos. Fue utilizado en la recogida de datos, en julio de 2014, dos instrumentos: un sociodemográfico y un Inventario de Depresión de Beck en la versión I. Se utilizó la Prueba Exacta de Fisher para analizar la existencia de asociación entre la sintomatología depresiva y las variables categóricas. **Resultados:** El 11% de los pacientes de la muestra tenían síntomas depresivos. De las variables estudiadas, ninguna comprobó asociación significativa con la sintomatología depresiva (p ≥ 0,05). **Conclusión:** La prevalencia de la sintomatología depresiva correspondió al 11%. Ninguna de las variables demostró asociación significativa con la sintomatología depresiva.

Palabras clave: Enfermeras y enfermeros; Unidades de cuidados intensivos; Estrés psicológico; Trastorno depresivo; Prevalencia.

Corresponding author:
Eduardo Motta de Vasconcelos.
E-mail: vasconcelos.motta@unifesp.br

Submitted on 02/16/2017.
Accepted on 05/10/2017.

DOI: 10.1590/2177-9465-EAN-2017-0031

INTRODUCTION

At intensive care unit, nurses are continuously influenced by their environment and the work process, which is considered one of the most tense in the hospital as nurses are exposed to different stressors, such as bureaucratic routines, team conflicts, reduced staffing, a grueling workload, procedures with high complexity and the emotions of patients and relatives.[1,2] Due to exhaustive and tense work, these professionals are more likely to develop occupational stress, which is an important determinant of depression and of other psychic diseases.[2]

Depression is defined as a state of psychic suffering, which has consequences on interpersonal relationships.[3] It is characterized by variations of mood and perpetuation of depressive symptoms including need for isolation, despondency, sadness, fatigue, insomnia, concentration difficulties, anxiety, fear, guilt, slowness, apathy, alterations to judge the truth, alterations of appetite, and presence of negative and recurrent thoughts.[3-6]

Affected individuals, family members, friends, and the community experience intense suffering.[7] This disease,[1] is considered a public health problem.[7] The World Health Organization (WHO) estimates that depression accounts for 4.3% of the global burden of disease and is among the world's leading causes of disability,[7] particularly of women.[8] The projection for 2020 is that depression will become the second most common cause of disability.[9,10] Brazil has the highest rates of depression behind only France (21.0%) and the United States (19.2%) with 18.4% of its population having had at least one episode of depression during their lifetime.[11]

Among health workers, nursing staff are among the most prone to mental health problems. Depression is one of the three most prevalent psychic illnesses in these workers, who daily deal with human suffering, pain, Joy, sadness and need to offer help to those who require their care.[1,5,6]

Understanding depression among nurses who work in intensive care unit, as well as the risk factors involved, is important for researchers working primarily in the area of worker health.[6] The literature shows the sickness of these professionals. In the first ten years and at the beginning of the second decade of the XXI century, researchers expanded their investigations in an attempt to understand the existence of an association between depressive symptomatology and its possible predictive factors, in an attempt to elucidate the relationships between these variables.[1,4-6] Most of the research published in this period on depressive symptomatology related to nursing was carried out involving all professional categories of this team (nursing auxiliaries, nursing assistants and nurses). However, it is important to investigate each professional category since the attributions are different between them and there may be differences in the presence of depressive symptomatology and in the relationships between variables according to category. This study only addresses nursing assistants in intensive care units.[1,4-6]

The guiding question of this study was to analyze if in an intensive care unit work environment there are factors that can be considered predictors of depressive symptomatology in nurses. In addition to these characteristics, the study sought to identify the prevalence of depressive symptomatology in these individuals.

The justification for this study is based on the need to analyze the existence of predictive factors of depressive symptomatology among nurses who work in intensive care unit in order to understand the relationship between nurses' work and the symptoms of depression. The aim is to find points of reflection on how to promote health at work and to design occupational health programs at the institution where the research was carried out in order to prevent and detect this disease in nurses.

The aim of the study was to identify the prevalence and to analyze the existence of predictive factors of depressive symptomatology among nurses who works in intensive care unit.

METHODS

A quantitative, descriptive and cross-sectional study was carried out in a university hospital in the city of São Paulo, Brazil. The sample was defined using convenience sampling with the non-probability sampling technique. Subjects were selected according to their presence during the period in which the data were collected; 130 nurses worked in the intensive care units, however this study enrolled only 91 participants. The inclusion criteria were to be a nursing assistant and to work in an intensive care unit or in the support areas of intensive care units (emergency room, hemodialysis and burns unit). The exclusion criteria were being on medical or maternity leave or on vacation. In compliance with these criteria, 11 individuals who were on leave, three who were on leave of absence, two nurses who were on maternity leave and 23 who were invited but refused to participate were excluded from the study.

The neurosurgery, pneumology, pediatrics, neonatal, cardiac surgery, medical clinics, cardiac, health insurance and general intensive care units were involved in the study. In addition, nurses working in a closed emergency room, hemodialysis and burns unit participated; these specialized units treat critically ill patients and work as a support service for intensive care units by providing highly complex care. Moreover, the urgent and emergency situations are similar to the situations that occur in an intensive care unit.

Data collection was performed by the head researcher in July 2014 while the participants were working. In order to maintain the confidentiality and privacy of the nurses, the instruments were completed in the comfort of the nursing staff room or in a room reserved in their sector, without the presence of other professionals. The instruments used were a sociodemographic data collection questionnaire and the Beck Depression Inventory (BDI - version I).[12]

The sociodemographic data collection questionnaire consists of multiple choice and open questions, investigating the gender, age, work sector, marital status, number of children, work shift, possible double employment, physical activity, smoking, drinking of alcoholic beverages, income, number of patients attended daily, time spent in the intensive care unit and participation in training in the hospital.

The BDI was used in this study to determine the percentage of nurses with depressive symptomatology;[12,13] version I of the BDI validated for Brazil was used, with 21 questions that assess the presence of depressive symptoms in relation to the week prior to the application of the instrument.[12] The cut-off points adopted were those recommended for undiagnosed samples: scores above 15 indicate dysphoria, and above 20 indicate depression.[13]

The results are expressed as percentages and measures of central tendency: mean, standard deviation and percentages for the categorical variables. Cronbach's alpha coefficient was used to verify the internal consistency of each dimension and the total BDI score. Fisher's exact test was applied to analyze the association between the occurrence of depressive symptomatology and the categorical variables when the condition for the use of Pearson's Chi-Square test was not verified. The strength of the association between the variables was assessed using Odds Ratio (OR) with the respective 95% confidence interval (95% CI).

The margin of error used in the statistical test decisions was 5% (p-value < 0.05) with 95% CI. The program used for statistical calculations was the Statistical Package for the Social Sciences (SPSS), version 21.

After the hospital's authorization, this project was submitted for evaluation and approved by the Research Ethics Committee (No. 332,462). Participants were contacted and informed about the study after agreeing to sign an informed consent form. The design of the study met the ethical precepts of Resolution 466/2012 of the National Health Council, which regulates research involving human beings in Brazil.

RESULTS

Considering the inclusion and exclusion criteria, the number of participants was 91 nurses. Of these, 81 (89.0%) were women, 57 (62.6%) were unmarried and 65 (71.4%) reported having no children. The ages ranged from 22 to 59 years with a mean of 30.82 years and a standard deviation of 6.42. The age distribution was similar between the two groups; 46 (50.5%) individuals were between 30 and 59 years old and 45 (49.5%) were between 22 and 29 years. The sector with the highest percentage of nurses was the general intensive care unit with 18.7% of the total. The predominant employment relationship was as contracted employee for 78 (85.7%) nurses. The highest percentage worked at night (34%). Most of them did not practice physical activity (51.6%), did not smoke (89%) and drank alcoholic beverages (52.7%). Moreover, most had only one job (93.4%), their last vacations lasted 30 days (78.3%), their weekly workload was between 30 and 40 hours (53.8%), they received between two and five (46.2%) minimum wages, had more than five years of intensive care experience (41.8%), attended less than ten patients daily (80.2%) and participated in training in this hospital (57.1%).

According to the results of the BDI, of the 91 nurses who participated in the study, five (5.5%) presented symptoms of dysphoria and five (5.5%) of severe depression, that is, ten nurses (11%) presented depressive symptomatology with their scores being suggestive of depression.

Table 1 shows that the percentage of nurses with depressive symptomatology was higher for the 22- to 29-year-old group (17.8%), women (11.1%), unmarried (14.0%), and those who did not have children (13.8%). However, within the fixed margin of error (5%), no significant association (p-value ≥ 0.05) was found between the presence of depressive symptomatology and any of the sociodemographic variables analyzed.

According to the results of Table 2, the percentage of nurses with depressive symptomatology was higher for individuals who practiced physical activity (11.4%), smoked (20%) and did not drink alcoholic beverages (14.0%). However, the occurrence of depressive symptomatology was statistically similar in relation to the practice of physical activity; of the 91 nurses who participated in this study five who practiced physical activity and five who did not practice physical activity had depressive symptoms (11.4% vs. 10.6%). For the fixed margin of error (5%), there was no significant association (p-value >0.05) between the presence of depressive symptomatology and variables related to life habits.

As shown in Table 3, the percentage of nurses with depressive symptomatology was higher for individuals who worked the afternoon shift (13.3%), had a second job (33.3%), their last vacation was 30 days or more (12.7%) and had a workload between 51 and 60 hours (18.2%) or ≥ 60 hours (18.2%). For the fixed margin of error (5%), there was no significant association (p-value > 0.05) between the occurrence of depressive symptomatology and variables related to the profession.

Table 4 shows that the percentage of nurses with depressive symptomatology was higher among individuals who received ten or more minimum wages (21.4%), with six months to one year's experience in intensive care units (28.6%), who attended less than ten patients per day (12.3%) and participated in hospital training (11.5%). For the fixed margin of error (5%), there was no significant association (p-value > 0.05) between the occurrence of depressive symptomatology and variables related to the profession.

DISCUSSION

The results show that 11% of the sample obtained scores suggestive of depression; this rate is higher than the percentage of cases found by health professionals in the Brazilian population, which corresponds to 4.1%.[14] This index is slightly higher than that obtained in the national literature with a prevalence of nurses with

Table 1. Depressive symptomatology according to sociodemographic variables (São Paulo, Brazil, 2014)

Variable	Depression						*p*-value	OR (95% CI)
	Present		Absent		Total			
	n	%	n	%	n	%		
Age range (years)								
22-29	8	17.8	37	82.2	45	100.0	0.050	**
30-59	2	4.3	44	95.7	46	100.0		
Sex								
Male	1	10.0	9	90.0	10	100.0	1.000	**
Female	9	11.1	72	88.9	81	100.0		
Marital status								
Married	2	5.9	32	94.1	34	100.0	0.311	**
Single	8	14.0	49	86.0	57	100.0		
Children								
Yes	1	3.8	25	96.2	26	100.0	0.271	**
No	9	13.8	56	86.2	65	100.0		
Group total	10	11.0	81	89.0	91	100.0		

Source: Research data, 2014. * Odds Ratio: OR; Confidence Interval: CI. ** Could not be determined due to zero or very low frequencies. *** *P*-value using Fisher's exact test.

Table 2. Depressive symptomatology according to variables related to life habits (São Paulo, Brazil, 2014)

Variable	Depression						*p*-value	OR (95% CI)
	Present		Absent		Total			
	n	%	n	%	n	%		
Physical activity								
Yes	5	11.4	39	88.6	44	100.0	1.000	1.08 (0.29-4.01)
No	5	10.6	42	89.4	47	100.0		1.00
Smoker								
Yes	2	20.0	8	80.0	10	100.0	0.302	**
No	8	9.9	73	90.1	81	100.0		
Alcohol consumption								
Yes	4	8.3	44	91.7	48	100.0	0.508	1.00
No	6	14.0	37	86.0	43	100.0		1.78 (0.47-6.80)
Group total	10	11.0	81	89.0	91	100.0		

Source: Research data, 2014. * Odds Ratio: OR; Confidence Interval: CI. ** Could not be determined due to zero or very low frequencies. *** *P*-value using Fisher's exact test.

scores suggestive of depression being 9%.[15] In the international literature, the percentages are even higher. According to one survey conducted with Hungarian nurses, the prevalence was 35.1%[16] and in another study with Turkish nurses from an intensive care unit, it was 19.1%.[17]

According to the studies found in the national literature that also used the BDI, 9% of nursing staff in intensive care units present scores suggestive of severe depression and 21% of dysphoria.[18] In a study carried out with resident nurses of different specialties, 8.8% presented scores suggestive of dysphoria and 19.1% of severe depression.[19] The present study indicates percentages of 5.5% for both which is less than what was found in the national literature; it is believed that this occurred due to the peculiar characteristics of each sample, in this case, only assistant nurses participated.

Although the prevalence of depressive symptomatology is higher in females,[15,20] there was no significant association between depressive symptomatology and gender in the

Table 3. Depressive symptomatology according to variables related to the profession (São Paulo, Brazil, 2014)

Variable	Depression						*p*-value	OR (95% CI)
	Present		Absent		Total			
	n	%	n	%	n	%		
Shift								
Morning	2	6.7	28	93.3	30	100.0	0.764	**
Afternoon	4	13.3	26	86.7	30	100.0		**
Night	4	12.9	27	87.1	31	100.0		**
Two jobs?								
Yes	2	33.3	4	66.7	6	100.0	0.129	**
No	8	9.4	77	90.6	85	100.0		
Duration of vacations (days)								
Up to 25 days	1	5.0	19	95.0	20	100.0	0.450	**
30 days or more	9	12.7	62	87.3	71	100.0		
Working hours								
< 30 hours	1	14.3	6	85.7	7	100.0	0.351	**
30-40 hours	3	6.1	46	93.9	49	100.0		**
41-50 hours	2	15.4	11	84.6	13	100.0		**
51-60 hours	2	18.2	9	81.8	11	100.0		**
> 60 hours	2	18.2	9	81.8	11	100.0		
Group total	10	11.0	81	89.0	91	100.0		

Source: Research data, 2014. * Odds Ratio: OR; Confidence Interval: CI. ** Could not be determined due to zero or very low frequencies. *** *P*-value using Fisher's exact test.

national literature,[15,18] corroborating the findings of this study. However, some studies in the international literature have shown contradictory results, in which the gender is considered a predictor of depressive symptomatology.[16,20,21]

However, the predominance of women in this study is in agreement with the fact that, in the health field, women are the majority because the preference in professions related to activities of caring; nurses more frequently are women.[22,23] Women are more vulnerable to depressive symptomatology, they are more likely to become involved in the problems of the people they care for.[20]

Regarding the age, although the prevalence of depressive symptomatology is higher in young nurses under the age of 30,[15,24,25] no significant association was found in the literature.[18,25,26] This corroborates the results found in this study. However, the current study shows a tendency of an association between the 22- to 29-year-old age group and the presence of depressive symptomatology (*p*-value = 0.05), this means that there would be a significant association in a larger sample if the results remained with the same proportion (*p*-value <0.05). This result is consistent as another study conducted only with nurses in a university hospital in São Paulo State, which found a similar result on analyzing whether there is an association between depressive symptoms and the age group (*p*-value = 0.05). Thus, under 30-year-old nurses reported more depressive symptoms than those older than 45 years.[15]

Regarding marital status, the results found in the literature show that the prevalence of depressive symptomatology is higher in single,[15,24] separated or divorced nurses,[18,20,25] thus, according to national and international studies, a significant association exists between the presence of depressive symptomatology and marital status,[16,18,24,25] a result different to that found in this study. Separated or divorced nurses are more likely to have depressive symptoms compared to single and married nurses. Married nurses experience fewer depressive symptoms compared to unmarried nurses because of family support, while after separation the individual has, apart from the absence of family support, the problem of a traumatic event that can trigger depression.[16,18]

It was also found that having a child was significantly associated with depressive symptomatology in women,[27] a conflicting result to that found in this study, which showed a higher prevalence of depressive symptomatology in professionals who do not have children.

According to studies carried out with intensive care unit nursing staff, it was observed that there is a high prevalence of depressive symptomatology in those who work the night shift and also there is a significant association between depressive

Table 4. Depressive symptomatology according to variables related to the profession (São Paulo, Brazil, 2014)

Variable	Depression						*p*-value	OR (95% CI)
	Present		Absent		Total			
	n	%	n	%	n	%		
Income								
2 a 5	5	11.9	37	88.1	42	100.0	0.164	**
6 a 9	1	3.7	26	96.3	27	100.0		**
10 or more	3	21.4	11	78.6	14	100.0		**
Group total	9	10.8	74	89.2	83	100.0		
Years of experience in the ICU								
6 months to 1 year	4	28.6	10	71.4	14	100.0	0.165	**
> 1-2 years	1	7.7	12	92.3	13	100.0		**
> 2-3 years	2	15.4	11	84.6	13	100.0		**
> 3-5 years	1	7.7	12	92.3	13	100.0		**
> 5 years	2	5.3	36	94.7	38	100.0		**
Patients attended per day								
Less than 10	9	12.3	64	87.7	73	100.0	0.680	**
10 or more	1	5.6	17	94.4	18	100.0		
Training in the hospital								
Yes	6	11.5	46	88.5	52	100.0	1.000	1.14 (0.30 a 4.36)
No	4	10.3	35	89.7	39	100.0		1.00
Group total	10	11.0	81	89.0	91	100.0		

Source: Research data, 2014. * Odds Ratio: OR; Confidence Interval: CI. ** Could not be determined due to zero or very low frequencies. *** *P*-value using Fisher's exact test.

symptomatology and the shift;[5,18,27,28] this is different to the results found in this study. According to one study conducted in hospitals in the northwestern region of São Paulo State, night shift nurses were 1.48 times more likely of presenting depressive symptomatology compared to day shift workers.[18]

Regarding the practice of physical activity, smoking and alcohol consumption, this study did not prove a significant association between depressive symptomatology and these variables. This result is different to that found in the literature that showed a significant association for depressive symptomatology with alcoholism and a lack of practicing physical activity,[20,25] that is, these are considered predictive factors of depressive symptomatology. Alcohol-dependent individuals are two to three times more likely to have depressive symptomatology.[29] Regarding smoking, similar to the current study, no significant association was found in the literature.[25]

Regarding the prevalence of depressive symptomatology in nurses according to the intensive care unit, the literature shows that there is no significant difference between the percentages found in the units.[18] The scores for depressive symptoms according to BDI are higher in nurses working in a university hospital than in those working in a state hospital (16.6 vs. 13.1; *p*-value = 0.028). Furthermore, the scores of depressive symptomatology are higher in nurses who work in an intensive care unit of a university hospital than in those who do not work in this sector (19.8 *vs.* 12.8; *p*-value = 0.001).[17]

Nurses with two jobs have a higher prevalence of depressive symptomatology.[15,18] The literature shows a significant association of this variable with depressive symptomatology,[18] but this was not confirmed by the current study. According to one study conducted in hospitals in the northwest of São Paulo State, nurses working in two jobs have a 2.11 (OR) times higher likelihood of presenting depressive symptomatology compared to nurses working in a single job.[18] The double working day may be associated with depressive symptoms in these workers due to the lack of leisure and social interaction necessary for mental health.[18]

As to the number of hours worked and the number of patients attended per day, one international study reported that these are predictive factors of depressive symptomatology.[30] Among the nurses who presented depressive symptomatology, the majority worked more than 50 hours per week and attended more than ten patients, that is, it is believed that the higher the number of hours worked and the greater the number of patients attended the higher the prevalence of depressive symptomatology due to work overload.[5,30]

According to one study carried out with nurses from a university hospital in Estonia, it was confirmed that there is a significant association between depressive symptomatology and income.[31] From the results in Table 4, the majority of individuals with the symptoms of depression received low incomes.[15] Corroborating these results, the literature points out that the lower the income, the greater the chance of presenting depressive symptomatology.[32]

Nurses with six months to one year of experience in the intensive care unit had a higher, albeit non-significant, prevalence of depressive symptomatology; a similar study confirmed that there is no significant association.[18] The nurses with a short time working in this sector have little experience in dealing with daily work situations, and this group is more vulnerable to depressive symptomatology, professional experience in the sector generates self-confidence to solve problems and cope with difficulties.[28]

Although depression has unknown causes, it is believed that the predictive factors of depressive symptoms are only facilitators or inhibitors of this disease. These factors have different weights in each individual with depression that is triggered by a sum of factors (age, sex, marital status), genetic-hereditary, biochemical factors, work (type of occupation, shift, excessive work), life habits (alcoholism, smoking), organizational (physical environment, reward), personal history, and losses during life.[15,16,18,25]

It is observed that the National Policy on Occupational Health is far from meeting the needs of these professionals; it is fundamental that strategies of coping against depression in the occupational scope are adopted, since this may reflect in reductions in the quality of care provided as well as in the rate of absenteeism.

The limitations of this study are related to the number of participants involved that will not allow the results to be generalized. In addition, the BDI does not have diagnostic power, that is, for the confirmation of depression, an evaluation by an experienced psychiatrist based on the Diagnostic and Statistical Manual of Mental Disorders - Fifth Edition (DSM-V) is required.[3]

CONCLUSIONS

The prevalence of nurses with depressive symptomatology corresponded to 11% of the sample, 5.5% had symptoms of dysphoria and 5.5% had symptoms of severe depression. According to the results, no significant association was found between the analyzed variables and the occurrence of depressive symptomatology.

ACKNOWLEDGEMENTS

The authors wish to thank the Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES) for financing this study with the master's degree grant (case number: 134249/2013-5, São Paulo - SP, Brazil) granted to Eduardo Motta de Vasconcelos.

REFERENCES

1. Barbosa KKS, Vieira KFL, Alves ERP, Virgínio NA. Sintomas depressivos e ideação suicida em enfermeiros e médicos da assistência hospitalar. Rev Enferm UFSM [internet]. 2012 set/dez; [cited 2017 Feb 02]; 2(3):515-22. Available from: https://periodicos.ufsm.br/index.php/reufsm/article/view/5910. http://dx.doi.org/10.5902/217976925910
2. Khamisa N, Oldenburg B, Peltzer K, Ilic D. Work related stress, burnout, job satisfaction and general health of nurses. Int J Environ Res Public Health [internet]. 2015 Jan; [cited 2017 Feb 02]; 12(1):652-66. Available from: https://www.ncbi.nlm.nih.gov/pubmed/27241867. DOI: 10.3390/ijerph120100652
3. American Psychiatric Association. DSM-5: Manual Diagnóstico e Estatístico de Transtornos Mentais. 5a ed. Porto Alegre: Artmed; 2014. 992 p.
4. Rios KA, Barbosa DA, Belasco AGS. Evaluation of quality of life and depression in nursing technicians and nursing assistants. Rev Lat Am Enfermagem [internet]. 2010 May/Jun; [cited 2017 Feb 02]; 18(3):413-20. Available from: http://www.scielo.br/pdf/rlae/v18n3/17.pdf. http://dx.doi.org/10.1590/S0104-11692010000300017
5. Vieira TG, Beck CLC, Dissen CM, Camponogara S, Gobatto M, Coelho APF. Adoecimento e uso de medicamentos psicoativos entre trabalhadores de enfermagem de unidades de terapia intensiva. Rev Enferm UFSM. [internet]. 2013 maio/ago; [cited 2017 Feb 02]; 3(2):205-14. Available from: https://periodicos.ufsm.br/reufsm/article/view/7538. http://dx.doi.org/10.5902/217976927538
6. Schmidt DRC, Dantas RAS, Marziale MHP. Anxiety and depression among nursing professionals who work in surgical units. Rev Esc Enferm USP [internet]. 2011 Apr; [cited 2017 Feb 02]; 45(2):487-93. Available from: http://www.scielo.br/scielo.php?pid=S0080-62342011000200026&script=sci_abstract. http://dx.doi.org/10.1590/S0080-62342011000200026
7. World Health Organization. Preventing suicide: a global imperative. Geneva: World Health Organization; 2014. 89 p.
8. World Health Organization. Comprehensive mental health action plan 2013-2020. Geneva: World Health Organization; 2013. 48 p.
9. Whooley MA, Kiefe CI, Chesney MA, Markovitz JH, Matthews K, Hulley SB; CARDIA Study. Depressive symptoms, unemployment and loss of income: The Cardia study. Arch Med Intern [internet]. 2002 Dec; [cited 2017 Feb 02]; 162(22):2614-20. Available from: https://www.ncbi.nlm.nih.gov/pubmed/12456234. DOI: 10.1001/archinte.162.22.2614
10. Chung CC, Lin MF, Ching YC, Kao CC, Chou YY, Ho PH, et al. Mediating and moderating effects of learned resourcefulness on depressive symptoms and positive ideation in hospital nurses in Taiwan. Res Nurs Health [internet]. 2012 Dec; [cited 2017 Feb 02]; 35(6):576-88. Available from: https://www.ncbi.nlm.nih.gov/pubmed/22911162. DOI: 10.1002/nur.21505
11. Bromet E, Andrade LH, Hwang I, Sampson NA, Alonso J, Girolamo G, et al. Cross-national epidemiology of DSM-IV major depressive episode. BMC Med [internet]. 2011 July; [cited 2017 Feb 02]; 9:90. Available from: https://bmcmedicine.biomedcentral.com/articles/10.1186/1741-7015-9-90. DOI: 10.1186/1741-7015-9-90
12. Gorenstein C, Andrade LHG, Zuardi AW. Escalas de Avaliação Clínica em Psiquiatria de Psicofarmacologia. São Paulo: Lemos Editorial; 2000. 438 p.
13. Andrade L, Gorenstein C, Vieira Filho AH, Tung TC, Artes R. Psychometric properties of the Portuguese version of the State-Trait Anxiety Inventory applied to college students: factor analysis and relation to the Beck Depression Inventory. Braz J Med Biol Res [internet]. 2001 Mar; [cited 2017 Feb 10]; 34(3):367-74. Available from: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0100-879X2001000300011. http://dx.doi.org/10.1590/S0100-879X2001000300011
14. Instituto Brasileiro de Geografia e Estatística (BR). Síntese de indicadores sociais 2008. 280 p. [cited 2017 Jun 8]. Available from: http://www.ibge.gov.br/home/estatistica/populacao/condicaodevida/indicadoresminimos/sinteseindicsociais2008/

15. Manetti ML. Estudo de aspectos profissionais e psicossociais no trabalho e depressão em enfermeiros atuantes em ambiente hospitalar [tese]. Ribeirão Preto: Escola de Enfermagem de Ribeirão Preto, Universidade de São Paulo; 2009. 234 p.
16. Ádám S, Cserháti Z, Mészáros V. High prevalence of burnout and depression may increase the incidence of comorbidities among hungarian nurses. Ideggyogy Sz [internet]. 2015 Sep; [cited 2017 Feb 02]; 68(9-10):301-9. Available from: https://www.ncbi.nlm.nih.gov/pubmed/26665491. DOI: 10.18071/isz.68.0301
17. Özgencil E, Ünal N, Oral M, Okyavuz Ü, Alanoglu Z. Depression and burnout syndrome in intensive care unit nurses. Crit Care [internet]. 2004 Mar; [cited 2017 Feb 02]; 8(Suppl 1):340. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4099927/. DOI: 10.1186/cc2807
18. Vargas D, Dias APV. Depression prevalence in Intensive Care Unit nursing workers: a study at hospitals in a northwestern city of São Paulo State. Rev Lat Am Enfermagem [internet]. 2011 Sep/Oct; [cited 2017 Feb 02]; 19(5):1114-21. Available from: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0104-11692011000500008. http://dx.doi.org/10.1590/S0104-11692011000500008
19. Franco GP, Barros ALBL, Nogueira-Martins LA. Quality of life and depressive symptoms in nursing residents. Rev Lat Am Enfermagem [internet]. 2005 Mar/Apr; [cited 2017 Feb 02]; 13(2):139-44. Available from: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0104-11692005000200002. http://dx.doi.org/10.1590/S0104-11692005000200002
20. Perry L, Lamont S, Brunero S, Gallagher R, Duffield C. The mental health of nurses in acute teaching hospital settings: a cross-sectional survey. BMC Nurs [internet]. 2015 Mar; [cited 2017 Feb 02]; 14:18. Available from: https://bmcnurs.biomedcentral.com/articles/10.1186/s12912-015-0068-8. DOI: 10.1186/s12912-015-0068-8
21. Yazdanshenas Ghazwin M, Kavian M, Ahmadloo M, Jarchi A, Golchin Javadi S, Latifi S, et al. The Association between Life Satisfaction and the Extent of Depression, Anxiety and Stress among Iranian Nurses: A Multicenter Survey. Iran J Psychiatry [internet]. 2016 Apr; [cited 2017 Feb 02]; 11(2):120-7. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4947220/. http://dx.doi.org/10.1016/j.mcm.2011.01.033
22. França FM, Ferrari R. Burnout Syndrome and the socio-demographic aspects of nursing professionals. Acta Paul Enferm [internet]. 2012 Nov; [cited 2017 Feb 02]; 25(5):743-8. Available from: http://www.scielo.br/scielo.php?pid=S0103-21002012000500015&script=sci_arttext&tlng=em. http://dx.doi.org/10.1590/S0103-21002012000500015
23. Galindo RH, Feliciano KVO, Lima RAS, Souza AI. Síndrome de burnout entre enfermeiros de um hospital geral da cidade do Recife. Rev Esc Enferm USP [internet]. 2012 abr; [cited 2017 feb 02]; 46(2):420-7. Available from: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0080-62342012000200021http://dx.doi.org/10.1590/S0080-62342012000200021
24. Yoon SL, Kim J. Job-related stress, emotional labor, and depressive symptoms among Korean nurses. J Nurs Scholarsh [internet]. 2013 June; [cited 2017 Feb 02]; 45:169-76. Available from: https://www.ncbi.nlm.nih.gov/pubmed/23470274. DOI: 10.1111/jnu.12018
25. Cheung T, Yip PS. Depression, Anxiety and Symptoms of Stress among Hong Kong Nurses: A Cross-sectional Study. Int J Environ Res Public Health [internet]. 2015 Sep; [cited 2017 Feb 02]; 12(9):11072-100. Available from: https://www.ncbi.nlm.nih.gov/pubmed/26371020. DOI: 10.3390/ijerph120911072
26. Cheung T, Yip PSF. Lifestyle and Depression among Hong Kong Nurses. Int J Environ Res Public Health [internet]. 2016 Jan; [cited 2017 Feb 02]; 13(1):pii: E135. Available from: https://www.ncbi.nlm.nih.gov/pubmed/26784216. DOI: 10.3390/ijerph13010135
27. Øyane NMF, Pallesen S, Moen BE, Åkerstedt T, Bjorvatn B, Tranah G. Associations between night work and anxiety, depression, insomnia, sleepiness and fatigue in a sample of Norwegian nurses. PLoS One [internet]. 2013 Aug; [cited 2017 Feb 02]; 8(8):e70228. Available from: http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0070228. DOI: http://dx.doi.org/10.1371/journal.pone.0070228
28. Silva DSD, Tavares NVS, Alexandre ARG, Freitas DA, Brêda MZ, Albuquerque MCS, et al. Depressão e risco de suicídio entre profissionais de Enfermagem: revisão integrativa. Rev Esc Enferm USP [internet]. 2015 Sep; [cited 2017 Feb 02]; 49(6):1023-31. Available from: http://www.scielo.br/scielo.php?pid=S0080-62342015000601023&script=sci_arttext&tlng=PT. DOI: 10.1590/S0080-62342015000600020
29. Anderson P, Gual A, Colon J. Alcohol y atención primaria de la salud: informaciones clínicas básicas para la identificación y el manejo de riesgos y problemas. Washington: Organização Pan-Americana de Saúde; 2008. 139 p.
30. Muse S, Love M, Christensen K. Intensive OutPatient Therapy for Clergy Burnout: How Much Difference Can a Week Make? J Relig Health [internet]. 2015 Feb; [cited 2017 Feb 02]; 55(1):147-58. DOI: 10.1007/s10943-015-0013-x
31. Freimann T, Merisalu E. Work-related psychosocial risk factors and mental health problems amongst nurses at a university hospital in Estonia: a cross-sectional study. Scand J Public Health [internet]. 2015 July; [cited 2017 Feb 02]; 43(5):447-52. Available from: https://www.ncbi.nlm.nih.gov/pubmed/25851017. DOI: 10.1177/1403494815579477
32. Tegegne MT, Mossie TB, Awoke AA, Assaye AM, Gebrie BT, Eshetu DA. Depression and anxiety disorder among epileptic people at Amanuel Specialized Mental Hospital, Addis Ababa, Ethiopia. BMC Psychiatry [internet]. 2015 Sep; [cited 2017 Feb 02]; 15:210. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4556015/. DOI: 10.1186/s12888-015-0589-4