

Anxiety and depression among nursing professionals who work in surgical units

ANSIEDADE E DEPRESSÃO ENTRE PROFISSIONAIS DE ENFERMAGEM QUE ATUAM EM BLOCOS CIRÚRGICOS

ANSIEDAD Y DEPRESIÓN ENTRE PROFESIONALES DE ENFERMERÍA QUE ACTÚAN EN SECTORES QUIRÚRGICOS

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ABSTRACT

This descriptive, cross-sectional, correlational study was performed with the objective to evaluate anxiety and depression among nursing professionals working in Surgical Units. Participants were 211 nursing professionals from eleven hospitals of Londrina-Paraná. Data collection was performed between the months of April and November 2007, using a questionnaire for the socio-demographic characterization of the professionals and the Hospital Anxiety and Depression Scale (HADS). Most participants were nursing aides (62.6%), female (86.7%), married (54.0%), and in average 40 years old. Overall, the workers average score for anxiety was 6.3 and 5.2 for depression in an interval from zero to 21. A statistically significant difference was found for the occurrence of anxiety for cases of holding two jobs and the type of institution ($p < 0.05$) and for the occurrence of depression for cases of nurses holding two jobs ($p < 0.05$).

DESCRIPTORS

Nursing
Surgicenters
Anxiety
Depression
Occupational health

RESUMO

Estudo descritivo, correlacional, tipo corte transversal cujo objetivo foi avaliar a ansiedade e a depressão entre profissionais de enfermagem do Bloco Cirúrgico. Participaram 211 trabalhadores de enfermagem de onze hospitais da cidade de Londrina-Paraná. A coleta de dados ocorreu nos meses de abril a novembro de 2007, utilizando-se um questionário para caracterização sócio-demográfica e profissional e a Escala Hospitalar de Ansiedade e Depressão (HADS). A maioria dos participantes era de auxiliares de enfermagem (62,6%), do sexo feminino (86,7%), casados (54,0%), com idade média de 40 anos. No geral, os trabalhadores apresentaram média de 6,3 para ansiedade e 5,2 para depressão em um intervalo possível de zero a 21. Constatou-se diferença estatisticamente significativa para a ocorrência de ansiedade segundo a presença de duplo vínculo empregatício e o tipo de instituição ($p < 0,05$) e para a ocorrência de depressão segundo a presença de duplo vínculo empregatício ($p < 0,05$).

DESCRIPTORIOS

Enfermagem
Centros de cirurgia
Ansiedade
Depressão
Saúde do trabalhador

RESUMEN

Estudio descriptivo, correlacional, de corte transversal, que objetivó evaluar la ansiedad y depresión entre profesionales de enfermería del sector quirúrgico. Participaron 211 trabajadores de once hospitales de Londrina-Paraná. La recolección de datos se hizo entre abril y noviembre 2007, utilizándose cuestionario de caracterización sociodemográfica y profesional y la Escala Hospitalaria de Ansiedad y Depresión (HADS). La mayoría de los participantes era auxiliar de enfermería (62,6%), sexo femenino (86,7%), casados (54,0%), edad media de 40 años. En general, los trabajadores presentaron media de 6,3 para ansiedad y 5,2 para depresión, en intervalo posible de 0 a 21. Se constató evidencia estadísticamente significativa para ocurrencia de ansiedad según existencia de doble vínculo laboral y tipo de institución ($p < 0,05$) y para ocurrencia de depresión según existencia de doble vínculo laboral ($p < 0,05$).

DESCRIPTORIOS

Enfermería
Centros quirúrgicos
Ansiedad
Depresión
Salud laboral

* Taken from the doctoral dissertation "Qualidade de Vida no Trabalho e sua associação com o estresse ocupacional, a saúde física e mental e o senso de coerência entre profissionais de enfermagem do Bloco Cirúrgico", University of São Paulo at Ribeirão Preto College of Nursing, 2009. ¹ Ph.D. in Nursing, University of São Paulo at Ribeirão Preto College of Nursing. Nurse at Hospital Universitário de Londrina, Londrina, PR, Brazil. denisebeto@terra.com.br ² Associate Professor, General and Specialized Nursing Department, University of São Paulo at Ribeirão Preto College of Nursing, Ribeirão Preto, SP, Brazil. rsdantas@eerp.usp.br ³ Full Professor, General and Specialized Nursing Department, University of São Paulo at Ribeirão Preto College of Nursing, Ribeirão Preto, SP, Brazil. marziale@eerp.usp.br

INTRODUCTION

Nowadays, all efforts to fight health workers' illnesses are extremely important, and research on occupational stress, physical and mental health-related problems and stress coping mechanisms have contributed to create a better understanding of these professionals' job situation and to make managers aware of the importance of elaborating prevention measures for the hospital work environment, considered highly stressful and loaded with factors that predispose to depression and anxiety among its workers.

As nurses working at surgical units and developing teaching and research activities, the researchers felt the need for further knowledge on the health condition of nursing workers active at these units, thus contributing to the growth of nursing.

OBJECTIVE

To assess the presence of anxiety and depression among nursing professionals working at surgical units; assess the correlation between anxiety and depression scores in nursing professionals working at surgical units and assess possible associations between anxiety and depression measures and the type of hospital institution, weekly hour load and work at more than one health institution.

LITERATURE REVIEW

In the current way of life, depression and anxiety are very common disorders that strongly affect people's wellbeing and daily activities. Therefore, they are the target of studies in different groups of people. In nursing, some studies have examined these disorders among workers, residents and undergraduate nursing students⁽¹⁻¹⁰⁾.

Anxiety is a vague and unpleasant feeling of fear, apprehension, characterized by tension or discomfort deriving from the anticipation of danger, of something unknown or strange⁽¹¹⁻¹²⁾. It can also be defined as an emotional state with psychological and physiological components, which is part of human experiences and can become pathological when disproportional to the situation that triggers it, or when there is no specific object it is directed at, figuring among the most frequent psychiatric disorders in the general population⁽¹¹⁾.

A study among nursing professionals revealed that situations in the work environment can provoke anxiety, particularly, among countless circumstances, the instability or aggravation of patients' health condition, lack of material, equipment and staff, relation with patients' relatives, as well as nursing care systemization difficulties and high-complexity procedures⁽⁸⁾.

Scientific evidence shows that different triggering factors are associated with depression, such as chemical disequilibria in the brain, personality characteristics, genetic vulnerability and situational events. Among nursing workers, literature shows that associated triggering factors can be related with internal factors in the environment and work process, such as: professional activity sectors, shift, interpersonal relation, work overload, work schedule problems, task accomplishment autonomy, client care, exhaustion, social support, insecurity, conflict of interests and developed coping strategies; and factors external to work, such as: gender, age, domestic work load, family support and income, workers' general health condition and individual characteristics⁽⁹⁾.

Depression, a fundamental variable in mental and occupational health research, is characterized by the slowing down of psychic processes, depressive and/or irritable mood, decreased energy, partial or total disability to feel joy or pleasure, disinterest, apathy or psychomotor agitation, concentration difficulty, negative thinking, with a loss of planning capacity and altered judgments of truth. It is estimated that, as this is a future disease, almost 20% of the population will experience at least one episode of depression across the lifetime⁽¹⁰⁾.

As these mental states are difficult to quantify, countless efforts have been made in the attempt to operationally define and assess both disorders, either through subjective scale like Hamilton's Anxiety Scale, Beck's Anxiety Inventory, the State-Trait Anxiety Inventory (STAI), Beck's Depression Inventory (BDI), Visual Analogue Scale^(11,13), Hospital Anxiety and Depression Scale – HADS⁽¹⁴⁻¹⁶⁾, or in an indirect objective way through hemodynamic parameters, among others.

METHOD

Study design

This cross-sectional and descriptive correlation study was developed at the surgical units of eleven hospitals in Londrina - Paraná, Brazil. Approval was obtained from the Research Bioethics and Ethics Committee at Irmandade Santa Casa de Londrina, Bioiscal, under number CEP 235/06, in compliance with National Health Council/Ministry of Health Resolution 196/96.

Population and sample

The potential study population comprised Nursing team professionals from the Surgical Unit (SU) and/or Supply Unit of 16 hospitals in Londrina- PR. The sample included 211 (66.8%) nursing workers from 11 institutions that permitted data collection.

In the current way of life, depression and anxiety are very common disorders that strongly affect people's wellbeing and daily activities. Therefore, they are the target of studies in different groups of people.

Data collection instrument

The instrument contained socio-demographic (age, gender, marital status and education level) and professional data (professional category, institution of origin, weekly hour load, working at another institution, remuneration received, according to minimum wage applied at the time of data collection) and the version of the Hospital Anxiety and Depression Scale⁽¹⁴⁾ translated and validated to Brazilian-Portuguese⁽¹⁵⁾.

The HADS was chosen because it is easy to understand, fast to apply, and includes few items. It addresses the variables of interest (anxiety and depression) and has demonstrated good psychometric characteristics among people with different types of diseases⁽¹⁴⁻¹⁶⁾. Although it was initially proposed for outpatients in the detection of depression and anxiety states, it can be applied in different contexts⁽¹⁴⁾, and has been used recently to diagnose anxiety and depression in psychiatric or non-psychiatric patients⁽¹⁵⁾.

The scale contains 14 multiple-choice questions, with two sub-scales: **anxiety (HADS-A)** and **depression (HADS-D)**, with seven items in each domain. Scores for each item range from zero to three, and the global score for each subscale range from zero to 21. To interpret the scores of the two subscales, it is considered that, the higher the score, the greater the chance that the person will develop an anxiety and/or depression disorder⁽¹⁴⁾.

Semantic analysis and pre-test

Before the questionnaires were sent for definitive data collection, with a view to guaranteeing potential participants' understanding of the instrument, the HADS version adapted to Brazilian-Portuguese was subject to semantic analysis through an interview with four subjects: three nursing auxiliaries and one nurse, who were staff members at one of the study hospitals. The result demonstrated that the scale is easy to understand, without demanding alterations for the population of workers.

The goal of the pretest was to verify the participants' understanding, clarity, objectivity, readability and presentation form. Workers were chosen at random through the shift scales of the sectors involved in the research. Instruments were sent to 20 surgical unit professionals from two study hospitals. The researcher received 15 completed instruments that did not demand any format or writing changes after the assessment.

Data collection

One of the authors (DRCS) collected data through questionnaires, personally handed over to potential participants between May and November 2007. Questionnaires were returned within ten days in closed envelopes, permitting the respondents' anonymity.

Data analysis

Data were processed and analyzed in Statistical Package for the Social Science (SPSS) version 15.0 for Windows.

Descriptive analyses were used for all variables, and the chi-square test to check for possible associations between anxiety and depression separately with the following variables: type of hospital institution (public/philanthropic or private); work at more than one health institution (yes or no) and weekly hour load (up to 40 hours or more than 40 hours per week). To assess the association between anxiety and depression measures, Spearman's Correlation Coefficient was used, as the normal distribution of these measures was not confirmed through the Kolmogorov-Smirnov test. Significant was set at 0.05.

Regarding the treatment of missing data, that is, when participants did not answer scale items, the criterion was established that only participants who did not answer 20% or more of the items should be excluded from the sample⁽¹⁷⁾. In view of this criterion, participants who had answered at least six items for each of the HADS sub-scales were maintained for the analysis of these measures. For participants who did not answer only one item in the anxiety and/or depression subscale, these items were completed using the mean score of their answers to the other items in these respective HADS dimensions. The internal consistency ratios of the HADS-Anxiety and HADS-Depression subscales were analyzed through Cronbach's Alpha.

RESULTS

The study participants were mainly female (86.7%). Ages ranged from 20 to 68 years, with a median and mean age of 40 years and standard deviation (S.D.) of 9.7 years. As for marital status, 114 (54.0%) were married, 51 (24.2%) single, 35 (16.6%) separated and nine (4.3%) widowed. Eight subjects did not inform their age, one did not inform gender and two did not answer about the marital status. Education levels varied: 21 (9.9%) had finished up to primary education, 123 (58.3%) up to secondary education, 31 (14.7%) had not finished higher education and 36 (17.1%) had finished higher education, 16 (7.6% of the total) had a specialization, master's or Ph.D. degree.

In terms of the 211 participants' professional categories, the most frequent category was auxiliaries (132; 62.6%), followed by attendants (28; 13.3%), nursing technicians (27; 12.8%) and nurses (22; 10.4%). Two participants did not answer this question.

According to the types of hospital institution where the participants worked, five were public or philanthropic and six private. Thus, 123 (58.3%) professionals worked at public/philanthropic institutions and 88 (41.7%) at private hospitals. The mean time of work at the Surgical unit was 9.3 (S.D. = 8) years.

Work journey and salary are important factors in professionals' life and can be associated with these professionals' physical and mental health condition. The mean weekly hour load was 47.3 (S.D.=16; range from 20 to 90 hours). When grouping professionals according to weekly hour

load, among the 205 subjects who reported this information, 73 (34.6%) worked up to 40 hours per week and 132 (62.6%) more than 40 hours per week (six (2.8%) participants did not inform the hour load).

As for the salary, 140 (66.4%) professionals received up to three minimum wages; 50 (23.7%) between four and six wages, nine (4.3%) between seven and nine salaries and only six (2.8%) between 10 and 12 minimum wages. Six subjects did not answer this question. Among the 207 workers who answered the item related to having another job, 159 (76.8%) indicated no other job and 48 (23.2%) mentioned another job.

According to the criterion adopted to deal with missing data, three professionals were excluded, who had not answered between three and seven items from the HADS-Anxiety, and two subjects had not answered seven items from the HADS-Depression. Regarding the replacement of missing data by the mean score of the subjects' answers to the subscale items, two missing data were replaced in the Anxiety subscale and two more in the Depression subscale. The instrument's reliability in the study sample was verified through the subscales' internal consistency (Cronbach's Alpha), with 0.79 and 0.77 for the anxiety and depression subscales, respectively.

The results related to the variables of interest, the anxiety and depression scores obtained through the application of the HADS are shown in Table 1.

Table 1 - Descriptive statistics and internal consistency of HADS-Anxiety and HADS-Depression subscales in study sample of nursing professional - Londrina, PR - 2007

HADS subscales	Cronbach's Alpha	Mean (S.D.)*	Median	Obtained interval
Anxiety	0.79	6.3 (3.7)	6.0	0 - 21
Depression	0.77	5.2 (3.3)	5.0	0 - 16

*standard deviation

The possible ranges for both measures vary between zero and 21, with higher scores indicating a higher chance that the person will develop an anxiety and/or depression disorder. The ranges found for the anxiety and depression scores were, respectively, between zero and 21 and between zero and 16. The group's mean anxiety score was 6.3 (S.D. = 3.7), and the mean depression score was 5.2 (S.D. = 3.3).

The following results were found, based on the scale authors' criterion⁽¹⁴⁾ that determines score eight as the cut-off point for HADS-Anxiety and HADS-Depression (Table 2).

According to the results in Table 2, a lot of workers obtained scores above eight for anxiety as well as for depression, revealing that curative and preventive actions are needed.

Table 2 - Distribution of professionals according to HADS-A and HADS-D subscales - Londrina, PR - 2007

HADS-subscales	N (%)
Anxiety	
No anxiety symptoms (scores < 8)	142 (67.3)
Anxiety symptoms (scores ≥ 8)	66 (31.3)
Did not answer	3 (1.4)
Depression	
No depression symptoms (scores < 8)	158 (74.9)
Depression symptoms (scores ≥ 8)	51 (24.2)
Did not answer	2 (0.9)

The Spearman correlation test also indicated a strong correlation between anxiety and depression scores ($r = 0.73$; $p < 0.001$), suggesting that workers who scored highest on the depression scale also scored highest on the anxiety scale.

Results in Table 3 indicate that anxiety was more frequent among workers from private institutions ($p = 0.011$) and without two jobs ($p = 0.027$). The analysis of depression (Table 4) showed no statistically significant difference in frequency levels of this disorder among professionals according to the type of institution ($p = 0.801$), despite a statistically significant difference for the presence of two jobs ($p = 0.010$).

Table 3 - Association between presence of anxiety and type of institution, weekly hour load and professionals' involvement in more than one job - Londrina, PR - 2007

	Presence of anxiety		p (χ^2 test)
	Yes	No	
	N (%)	N (%)	
Type of institution			0.011
Public/philanthropic	30 (45.5)	91 (64.1)	
Private	36 (54.5)	51 (35.9)	
Weekly hour load			0.953
Up to 40 hours	23 (35.9)	49 (35.5)	
More than 40 hours	41 (64.1)	89 (64.5)	
Double work contract			0.027
Yes	9 (13.6)	38 (27.5)	
No	57 (86.4)	100 (72.5)	

Table 4 - Association between presence of depression and type of institution, weekly hour load and professionals' involvement in more than one job - Londrina, PR - 2007

	Presence of depression		p (χ^2 test)
	Yes	No	
	N (%)	N (%)	
Type of institution			0.801
Public/philanthropic	29 (56.9)	93 (58.9)	
Private	22 (43.1)	65 (41.1)	
Weekly hour load			0.134
Up to 40 hours	22 (44.9)	51 (33.1)	
More than 40 hours	27 (55.1)	103 (66.9)	
Double work contract			0.010
Yes	5 (9.8)	42 (27.3)	
No	46 (90.2)	112 (72.7)	

DISCUSSION

The socio-demographic characteristics of workers in this study reaffirm that nursing is a typically female profession in Brazil, as demonstrated in other recent studies^(3-5, 8,18).

A recent study on mental health⁽¹⁹⁾ appointed that, among men, a recent episode of stress at work is associated with a relatively high risk of developing mental health problems like anxiety and depression. Among women, the risk for mental health problems was relatively high when they were exposed to the continuing stress factors that exist at work. According to the study authors, men are more reactive to recent stressors, while women are more reactive to cumulative stress factors. Among men, the odds ratio ranged between 1.8 and 4.6 and, among women, between 1.4 and 7.1. In other words, women faced an up to seven times higher risk of mental health-related problems when compared to men⁽¹⁹⁾. Another study demonstrated higher depression scores for women, according to the Beck Depression Inventory, in comparison with men⁽¹⁾.

Hence, as the professionals in this study, predominantly female, are continuously exposed to stressful conditions at work, they could display a higher risk for the appearance of mental health problems than male professionals. To confirm this hypothesis, however, one research limit is the small number of male professionals, demanding further research to confirm this aspect.

The participants' age showed a sample of young adults, with considerable experience at surgical units, similar to other studies among nursing workers^(5,18).

Some authors⁽²⁰⁾ describe that depression is more evident in younger than in older groups, which could disclose more cases of this kind of disorder among workers in this study, as the sample predominantly contained young adults.

As for education level, a small number of professionals, both nurses and other categories, took professional training courses (22.3%). The search for training was described in another study among nurses, where 63.9% of these professionals were taking a graduate program⁽⁸⁾, diverging from the present results, in which a restricted number of professionals were seeking professional growth, either due to the lack of financial resources or lack of opportunities.

Among the nurses, most had a specialization degree, but only one a Master's degree and one was taking a Ph.D. program. Authors⁽²⁰⁾ who investigated the relation between educational level and depressive episodes found that the highest incidence of depression was among people with a post-secondary education level. This aspect motivates new studies among nurses.

For the other professional categories, the result of this study revealed 13.3% of attendants working at surgical units. This goes against the Law on Professional Nursing Exercise⁽¹⁸⁾, which determined the extinction of this category

since 1996. The presence of attendants at the study hospitals, however, should be analyzed in the Brazilian health context and its hospital institutions. It is known that, at different Brazilian institutions, even after education in technical nursing schools, the employees are still awaiting opportunities to be hired in their new categories. Professional ascent often occurs after public exams, opened to complete functions in their different sectors. Workers' need to maintain a professional work contract and the lack of previously trained human resources to work in specific sectors like surgical units can be factors that favor the maintenance of this situation.

Regarding salary, a study among Chinese nurses⁽²⁾ reported that longer professional experience and greater professional prestige result in higher salaries. The present results, however, appoint low salaries among the participants, reaffirming nursing as a badly remunerated profession in Brazil, independently of the time of professional experience and function. Most workers gained up to three minimum wages.

Low wages appear as a relevant aspect from a mental health perspective. A study on the relation between depression and socio-demographic characteristics, which included remuneration, found that the prevalence of depressive episodes was related with family income, i.e. when one variable decreased (income for example), the other increased (depression for example) ($p < 0.0001$)⁽²⁰⁾. In another study of teachers in Brazil, no statistically significant relation was found between remuneration and incidence of psychic disorders⁽²¹⁾. Although these studies involve distinct professional categories, it should be taken into account that, in both studies, the design used does not permit affirming the existence or inexistence of the relation between these variables. Longitudinal research is needed, which can better clarify the relation between remuneration and mental health, as the abovementioned studies were cross-sectional. This design permits describing existing relations between measures, but does not allow for conclusions on causal relations among the variables.

The association among weekly hour load, anxiety and depression showed no statistical significance among the study participants, similar to another study among nurses⁽²²⁾, which revealed no association between psychological symptoms and number of hours worked during the week. Among teachers, psychic disorder appeared among professionals with a significantly higher weekly hour load ($p < 0.0001$)⁽²¹⁾.

Anxiety according to type of institution showed a statistically significant result, with higher occurrence levels among professionals from private institutions. This result diverged from a study among Brazilian teachers⁽²¹⁾, which found no statistically significant relation between type of institution and situations causing anxiety and depression.

Higher occurrence levels of anxiety symptoms among workers from private institutions can be due to common work conditions at most private hospitals, which are con-

sidered sources of anxiety, such as lack of material and human resources, low wages, lack of stability at work, sudden function changes, task accumulation, among others. Some of these conditions are also present at most public and philanthropic hospitals. However, professionals at these institutions have a stable job and hardly any workers are made redundant, which could justify the lower occurrence levels of anxiety symptoms among them, as observed in this study.

Regarding the number of workers with two jobs, a study was found with higher frequency levels than in the present study (53.9%)⁽⁵⁾ and another study with similar results (25.7%)⁽¹⁸⁾. In the present study, anxiety and depression assessments showed higher occurrence levels of these disorders among professionals with only one job. This fact may be related with their lower remuneration when compared to workers with two jobs and with a workload corresponding to housework.

As for the results found in anxiety and depression assessments, according to the cut-off point the scale authors suggested⁽¹⁴⁾ and which was used in this study, frequencies of workers with anxiety (31.3%) and depression (24.2%) levels are a source of concern. This result suggests that a large part of nursing professionals consider the circumstances they are exposed to in daily life as threatening.

A systematic review of Brazilian studies⁽⁹⁾ found similar results, with mean prevalence levels of depression among nursing workers ranging between 28.78% and 30.64%. According to the authors, this result is close to the mean prevalence of 10 to 25% among non-clinical women.

A study among nurses circulating at surgery rooms⁽³⁾ revealed low levels of trait-anxiety among 68.4% of workers and medium levels among 31.5%. As for state-anxiety, the author described 73.6% with low and 21.5% with medium state-anxiety. Other authors⁽²³⁾ found moderate state-anxiety levels among nurses working in all shifts and also moderate trait-anxiety levels among nurses in the morning and afternoon shifts. Both studies demonstrated results similar to

the present study and, mainly, the need for prevention measures to minimize factors predisposing to this disorder.

A study on anxiety among Anesthetic Recovery Room (ARR) nurses⁽⁴⁾ found no high levels of trait and state-anxiety, despite weighting that, as anxiety is a complex emotional reaction deriving from a range of personal and professional life factors, in their work environment, ARR nurses may experience stressful situations that demand coping skills and may generate anxiety.

In the present study, despite great concern with the frequency of anxiety and depression signs, the researchers weighted that most nursing professionals displayed HADS-A and HADS-D scores below eight, and hence were not classified as possible cases of anxiety e depression. A strong and positive correlation was evidenced between the two subscales, revealing that workers with higher anxiety scores also obtain high depression scores. This aspect should be highlighted so as to trigger preventive and/or curative actions that minimize further damage to these workers' health.

CONCLUSION

In this cross-sectional and descriptive correlation study, the average anxiety and depression scores were 6.3 and 5.2, respectively, in 211 nursing professionals from eleven hospitals located in the city of Londrina-Parana, Brazil. Statistically significant difference was evidenced for occurrence of anxiety and depression according to presence of a second job ($p < 0.05$). Kind of hospital had statistically significant result for presence of anxiety symptoms ($p < 0.05$).

In view of the World Health Organization's high estimates on the occurrence of depression as a cause of illness in upcoming decades, these study results are extremely important to elaborate prevention measures for the hospital work context, evidenced as a stressful environment loaded with factors predisposing to depression and anxiety among its workers.

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