



IMPACT OF NIGHT SHIFT ON THE MENTAL HEALTH OF NURSES IN PUBLIC HOSPITALS

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ARTIGO ORIGINAL

ABSTRACT

Introduction: Nurses are professionals who face great stress during their workday, making them more susceptible to developing mental disorders. This situation is further complicated for nurses who work night shifts in hospitals. **Objective:** This study aimed to evaluate the levels of anxiety and depression in nurses who work night shifts in public hospitals. **Material and methods:** For this, a sociodemographic information questionnaire and the Hospital Anxiety and Depression Scale (HADS) were used. **Results:** The sample consisted of 85 permanent nurses from four public hospitals, located in the city of Aracaju, Sergipe. Of the participating nurses, 83.5% were women. The average age was 35.7 years and the number of hours worked per week was 36.7. 69.4% had two or more jobs and 97.3% expressed dissatisfaction with their salary. Only 36.5% had a postgraduate degree. The average length of service in the hospitals surveyed was 90.5 months. It was found that 42.4% of nurses had anxiety, with the majority experiencing mild to moderate symptoms, and 34.1% had symptoms of depression. Most nurses with symptoms of anxiety and depression were between 25 and 39 years old, with anxiety being more prevalent between 25 and 29 years old (22.2%) and depression between 30 and 34 years old (24.1%). Nurses worked 20 to 44 hours a week, with the majority working 36 hours (57.6%), and this group had higher levels of anxiety (25.9%) and depression (21.2%). Nurses with two or more jobs had higher rates of anxiety (69.4%) and depression (30.5%). **Conclusion:** This study observed that most nurses were young females. The combination of age and low salary likely resulted in longer working hours and a reduced pursuit of specialization. The number of night shift workers who presented symptoms of anxiety and depression was high, indicating a need to improve working conditions and wages, as well as greater attention from the government to this part of society.

Keywords: Public Health; Common Mental Disorders; Mental Health

IMPACTO DO TURNO NOTURNO NA SAÚDE MENTAL DE ENFERMEIROS EM HOSPITAIS PÚBLICOS

RESUMO

Introdução: O enfermeiro é um profissional que enfrenta grande estresse durante sua jornada de trabalho, tornando-o mais suscetível ao desenvolvimento de transtornos mentais. Esta situação é ainda mais complicada para os enfermeiros que trabalham no turno noturno nos hospitais. **Objetivo:** Este estudo teve como objetivo avaliar os níveis de ansiedade e depressão em enfermeiros que trabalham no turno noturno em hospitais públicos. **Material e Métodos:** Para isso, foram utilizados um questionário de informações sociodemográficas e a Escala Hospitalar de Ansiedade e Depressão (HADS). **Resultados:** A amostra foi composta por 85 enfermeiros permanentes de quatro hospitais públicos, localizados na cidade de Aracaju, Sergipe. Dos enfermeiros participantes, 83,5% eram mulheres. A idade média foi de 35,7 anos e o número de horas trabalhadas por semana foi de 36,7. 69,4% tinham dois ou mais empregos e 97,3% manifestaram insatisfação com o salário. Apenas 36,5% possuíam pós-graduação. O tempo médio de serviço nos hospitais pesquisados foi de 90,5 meses. Verificou-se que 42,4% dos enfermeiros apresentavam ansiedade, sendo que a maioria apresentava sintomas leves a moderados, e 34,1% apresentavam sintomas de depressão. A maioria dos enfermeiros com sintomas de ansiedade e depressão tinha entre 25 e 39 anos, sendo a ansiedade mais prevalente entre 25 e 29 anos (22,2%) e a depressão entre 30 e 34 anos (24,1%). Os enfermeiros trabalhavam de 20 a 44 horas semanais, sendo que a maioria trabalhava 36 horas (57,6%), e este grupo apresentava maiores níveis de ansiedade (25,9%) e depressão (21,2%). Enfermeiros com dois ou mais empregos apresentaram maiores índices de ansiedade (69,4%) e depressão (30,5%). **Conclusão:** Este estudo observou que a maioria dos enfermeiros eram jovens do sexo feminino. A combinação de idade e baixo salário provavelmente resultou em jornadas de trabalho mais longas e em uma menor busca por especialização. O número de trabalhadores noturnos que apresentaram sintomas de ansiedade e depressão foi elevado, indicando a necessidade de melhoria das condições de trabalho e de salários, bem como de maior atenção do governo a esta parcela da sociedade.

Palavras-chave: Saúde Pública; Transtornos Mentais Comuns; Saúde mental



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INTRODUÇÃO

Nurses play an exhausting and stressful role in the healthcare system and may experience symptoms of anxiety and depression (Preto et.al, 2009). These symptoms are even more common in nurses who work night shifts, as they are more likely to develop insomnia or excessive sleepiness (Hsu et al., 2009). Night work is directly linked to sleep disorders, leading to significant changes in physical, occupational, cognitive, and social aspects of individuals (da Rocha et al., 2010).

Nighttime hours are often associated with various health problems, particularly sleep-related disorders, which can lead to mental health issues such as severe depressive disorders (Scott, Monk, Brink, 1997; Parent-Thirion et al., 2007; Flo et al., 2012).

Combined with low pay, long working hours, and poor working conditions, night work has been identified as a trigger for psychological disorders and depression (Vargas, Dias, 2011). Nursing work, therefore, is combined with factors that can interfere with health of its workers, such as constant changes in sleep patterns, making them more susceptible to depression and tiredness (Costa, Morita, Martinez, 2000).

There are few studies that investigate the cumulative effects of night work and mental disorders (Øyane et al., 2013). Given these factors, it is important to conduct studies focused on the health of nurses who work at night to promote their well-being. This study aimed to determine the prevalence of anxiety and depression symptoms in nurses working night shifts in public hospitals.



MATERIALS AND METHODS

This is an observational, descriptive, cross-sectional study with a quantitative approach. The study was carried out in four public hospitals in the city of Aracaju. The study included a sample of 85 nurses who worked night shifts. Nurses who were active in the institution and worked in direct patient care were included. Those who were on holidays, away from work at the time of data collection, and had a history of depression before working as a nurse were excluded.

This work met the ethical precepts in research with human beings. For that, the researchers asked for volunteers to participate in the study after explaining its purpose. Participants were asked to sign a Free and Informed Consent Form, which outlined the risks, objectives, benefits, and research methods. To ensure that the form was easily understood, four nurses from the hospital were interviewed to verify its clarity, objectivity, readability and presentation.

Participants in the study were asked to complete a questionnaire that included sociodemographic information (age, sex, marital status), professional details (workplace, hours worked weekly, number of jobs, salary satisfaction, length of service, work unit, shift, qualifications), and history of depression diagnosis before work as a nurse. They also completed the Hospital Anxiety and Depression Scale (HADS) (Zigmond, Snaithe, 1983), which assesses anxiety and depression. The scale was translated and validated in Brazil by Botega et al., (1998).

HADS has 14 items, seven of which are aimed at assessing anxiety (HADS-A) and seven for depression (HADS-D). Each of the items on the scale can be scored from zero to three, on a Likert-type scale, with an overall score for each subscale ranging from 0 (zero) to 21 points.

To assess the occurrence of anxiety and depression, the sum of the recommended responses for both subscales was obtained. In this way, HADS-anxiety: without anxiety from 0 to 7, with anxiety ≥ 8 and HADS-depression: without depression 0 to 7, with depression ≥ 8 . Data from the HADS questionnaire were analyzed to identify any associations between anxiety and depression and variables such as weekly working hours, number of jobs, and salary satisfaction were evaluated. Participants with 20% or more unanswered items on the questionnaire were excluded from the sample.

RESULTS

Most nurses who participated in this study were female, with an average age of 35.7 years. They typically worked 36.7 hours per week, had multiple jobs, and expressed dissatisfaction with their salary (**Table 1**).

Table 1 – Sociodemographic characteristics of nurses who work at night in four public hospitals in the city of Aracaju, SE.

Variables (n=85)	n (%)	Median	Variation
Age		35,7	25 – 58
Sex			
Male	14 (16,5)		
Female	71 (83,5)		
Weekly working hours		36,7	20 – 60
Salary satisfaction			
Satisfied	2 (2,4)		
Unsatisfied	83 (97,6)		
Number of jobs			



One	26 (30,6)		
Two or more	59 (69,4)		
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Professional qualification			
Graduation	54 (63,5)		
Post-Graduate	31 (36,5)		
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Working time at the institution	90,5	4 – 338	
(months)			
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In this population, 42.4% (36) of nurses were found to have anxiety, with most experiencing mild to moderate symptoms. Additionally, 34.1% (29) were found to be depressed, with the majority experiencing mild symptoms (**Table 2**).

Table 2 – The study aimed to assess the severity of anxiety and depression symptoms among nurses working night shifts in four public hospitals in the city of Aracaju, SE.

Degree of severity	n	%
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Anxiety		
Mild	17	20,0
Moderate	17	20,0
Severe	02	2,4
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Depression		
Mild	22	25,9
Moderate	07	8,2
Severe	0	0
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The individuals in this study were divided into age groups based on the 2010 Census of the Brazilian Institute of Geography and Statistics (IBGE) to measure the prevalence of anxiety and depression. The highest number of nurses with anxiety and depression were aged 25-39. The majority of anxious individuals were 25-29 years old, representing 22.2% of the total sample, while the highest number of depressed individuals were 30-34 years old, totaling 24.1% of those with symptoms.

The study also analyzed the nurses' working hours in relation to their anxiety and depression scores. Their weekly working hours ranged from 20 to 44, with 36 hours being the most common. The number of employment relationships was also observed, with 26 individuals with more than one job showing symptoms of anxiety and 23 showing symptoms of depression. Among this group, 15 anxious and 12 depressed individuals performed their professional activities in hospitals (**Table 3**).

Table 3 – Symptoms of anxiety and depression according to age, sex, working hours, and number of jobs of nurses who work night shifts in four public hospitals in Aracaju, SE.

Variables	n (%)	Anxiety (%)	Depression (%)
Age (years)			
25 a 29	18 (21,2)	8 (9,4)	6 (7,0)
30 a 34	17 (20)	7 (8,2)	7 (8,2)
35 a 39	18 (21,2)	6 (7,0)	5 (5,9)
40 a 44	6 (7,1)	2 (2,4)	1 (1,2)
45 a 49	5 (5,9)	4 (4,7)	5 (5,9)



50 a 54	0 (0)	0 (0)	0 (0)
55 a 59	4 (4,8)	2 (2,4)	1 (1,2)
Not answered	17 (20)	7 (8,2)	4 (4,7)
Sex			
Male	14 (16,5)	5 (5,9)	4 (4,7)
Female	71 (83,5)	32 (37,6)	25 (29,4)
Weekly working hours			
20	1 (1,2)	0 (0)	0 (0)
24	1 (1,2)	0 (0)	0 (0)
30	17 (20)	7 (8,2)	5 (5,9)
36	49 (57,6)	22 (25,9)	18 (21,2)
40	10 (11,8)	3 (3,5)	1 (1,2)
44	1 (1,2)	1 (1,2)	0 (0)
60	6 (7,1)	3 (3,5)	5 (5,9)
Number of jobs			
One	26 (30,6)	10 (11,8)	6 (7,0)
Two or more	59 (69,4)	26 (30,5)	23 (27,0)
Second job			
Hospital	30 (35,3)	15 (17,6)	12 (14,1)
Other places	29 (34,1)	26 (30,5)	11 (12,9)
Salary satisfaction			
Satisfied	2 (2,4)	0 (0)	0 (0)
Unssatisfied	83 (97,6)	36 (42,4)	29 (34,1)

DISCUSSION

The study found that there is still a small number of men in the nursing profession, with most nurses being women (Haddad, 2000; Peniche, 2005; Schmidt, Dantas, Marziale, 2011). The majority of nurses did not have any specialization, indicating a lack of professional development. This contrasts with a previous study where more than half of the nurses had postgraduate courses (Barros et al.;2003).

Workload, death/dying, and conflict with doctors were identified as the main sources of workplace stress, with positive reappraisal, planned problem solving, and self-control being the most common coping strategies (Xianyu, Lambert, 2006). The 36-hour workday was found to be the main cause of anxiety and depression among nurses in this study, but specific stressors were not evaluated. Additionally, most nurses had more than one job to supplement their income and were unsatisfied with their salary.

Our study found a concerning frequency of nurses experiencing symptoms of anxiety (42.3%) and depression (34.1%). This is higher than the rates reported in other studies (Manetti, Marziale, 2007; Schmidt, Dantas, Marziale, 2011). Even when using different assessment instruments, we still observed a predominance of mild and moderate symptoms of anxiety and depression (Gomes, Oliveira, 2013).

Most participants in our study were young adults, which aligns with the findings of Akhtar-Danesh, Landeen (2007) who reported a higher prevalence of depression in the age group of 20 to 44 years.

Schmidt, Dantas, Marziale (2011) also noted that female nurses in the surgical ward were consistently exposed to stressful work conditions, potentially putting them at a greater risk for mental health problems compared to men. In our study, most participants were also female, but due to the small number of male nurses, we were



unable to make inferences about the prevalence of mental health problems in men.

A relationship has been established between the salary and the levels of anxiety and depression, as financial issues can trigger symptoms related to mental illnesses. This relationship shows that the prevalence of depression decreases as income increases (Akhtar-Danesh, Landeen, 2007).

The weekly workload did not show a direct relationship with the HADS scores. This may be because many nurses have multiple jobs, but only reported their workload at the institution where they were present during the research.

A high number of nurses (69.4%) reported having more than one job, which was higher than in a similar study (Araújo et al., 2003). This was considered the primary variable in this study that showed the most significant relationship with the levels of anxiety and depression symptoms in professionals. The low salary is considered the main cause of this situation, which has become common among nursing professionals. When the second job is also in a hospital environment, the scores for anxiety and depression are higher.

CONCLUSION

The results obtained in this study demonstrate that there is still a great predominance of women in nursing, as well as a strong presence of the young population in hospitals and the search for a job at an increasingly earlier age, often without pursuing further specialization.

The use of the HADS scale has made a valuable contribution to nursing studies, particularly in relation to nurses' health. The results revealed a high number of workers experiencing symptoms of anxiety and depression, especially during night shifts.



Additionally, the study found that many nurses are unsatisfied with their salary, leading them to work long hours, including double shifts and night shifts, which can contribute to their overall health issues.

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CONFLICT OF INTEREST

The authors have no conflict of interests to declare.

REFERENCES

- Akhtar-Danesh N, Landeen J. Relation between depression and sociodemographic factors. *Int J Ment Health Syst.* 2007 Sep;1(1):4.
- Araújo TM, Aquino E, Menezes G, Santos CO, Aguiar L. Aspectos psicossociais e distúrbios psíquicos entre trabalhadoras de enfermagem. *Rev Saúde Pública.* 2003;37(4):424-33.
- Barros ALBL, Humerez DC, Fakh FT, Michel JLM. Situações geradoras de ansiedade e estratégias para seu controle entre enfermeiras: estudo preliminar. *Rev Latino-Am Enfermagem.* 2003 setembro-outubro;11(5):585-592.
- Botega NJ, Bio MR., Zomignani MA., Garcia C Jr, Pereira WA. Transtornos do humor em enfermagem de clínica média e validação de escala de medida (HAD) de ansiedade e depressão. *Rev Saúde Pública.* 1995;29(5):355-63.
- Costa ES, Morita I, Martinez MAR. Percepção dos efeitos do trabalho em turnos sobre a saúde e a vida social em funcionários da enfermagem em um hospital universitário do estado de São Paulo. *Cad Saúde Pública.* 2000 Abr-Jun;16(2):553-5.



da Rocha MC, De Martino MM. O estresse e qualidade de sono do enfermeiro nos diferentes turnos hospitalares [Stress and sleep quality of nurses working different hospital shifts]. *Rev Esc Enferm USP*. 2010 Jun;44(2):280-6.

Flo E, Pallesen S, Magerøy N, Moen BE, Grønli J, Hilde Nordhus I, Bjorvatn B. Shift work disorder in nurses--assessment, prevalence, and related health problems. *PLoS One*. 2012;7(4):e33981.

Gomes RK, Oliveira VB. Depressão, ansiedade e suporte social em profissionais de enfermagem. *Boletim de Psicologia*. 2013 Jun;63(138):23-33.

Haddad MCL. Qualidade de vida dos profissionais de enfermagem. *Rev Espaço Saúde*. 2000;1(2):75-88.

Hsu SC, Wang SJ, Liu CY, Juang YY, Yang CH, Hung CI. The impact of anxiety and migraine on quality of sleep in patients with major depressive disorder. *Compr Psychiatry*. 2009 Mar-Apr;50(2):151-7.

Instituto Brasileiro de Geografia e Estatística – IBGE. Censo demográfico. 2010.

Manetti ML, Marziale MHP. Fatores associados à depressão relacionada ao trabalho de enfermagem. *Estud Psicol*. 2007 Abr;12(1):79-85.

Øyane NM, Pallesen S, Moen BE, Akerstedt T, Bjorvatn B. Associations between night work and anxiety, depression, insomnia, sleepiness, and fatigue in a sample of Norwegian nurses. *PLoS One*. 2013 Aug 7;8(8):e70228.

Parent-Thirion A, Fernández-Macías E, Hurley J, Vermeylen G. Fourth European Working Conditions Survey. Dublin: European Foundation for the Improvement of Living and Working Conditions. 2007.

Peniche ACG. A influência da ansiedade na atividade profissional do circulante de sala de operações. *Acta Paul Enferm*. 2005 Set;18(3):247-52.



Preto VA, Pedrão LJ. O estresse entre enfermeiros que atuam em Unidade de Terapia Intensiva. *Rev Esc Enferm USP*. 2009;43(4):841-48.

Schmidt DRC, Dantas RAS, Marziale MHP. Ansiedade e depressão entre profissionais de enfermagem que atuam em blocos cirúrgicos. *Rev Esc Enferm USP*. 2011 Abr;45(2):487-493.

Schmidt DRC. Qualidade de vida e qualidade de vida no trabalho de profissionais de enfermagem atuantes em unidades do bloco cirúrgico [dissertação]. Ribeirão Preto: Escola de Enfermagem de Ribeirão Preto, Universidade de São Paulo; 2004.

Scott AJ, Monk TH, Brink LL. Shiftwork as a Risk Factor for Depression: A Pilot Study. *Int J Occup Environ Health*. 1997 Jul;3(Supplement 2):S2-S9.

Vargas D, Dias APV. Prevalência de depressão em trabalhadores de enfermagem de unidade de terapia intensiva: estudo em hospitais de uma cidade do noroeste do Estado São Paulo. *Rev Latino-Am Enfermagem*. 2011 Out;19(5):1114-21.

Xianyu Y, Lambert VA. Investigation of the relationships among workplace stressors, ways of coping, and the mental health of Chinese head nurses. *Nurs Health Sci*. 2006 Sep;8(3):147-55.

Zigmond AS, Snaith RP. The hospital anxiety and depression scale. *Acta Psychiatr Scand*. 1983 Jun;67(6):361-70.