Assessment of depression, anxiety and stress among emergency nursing professionals: cross-sectional study

Avaliação da depressão, ansiedade e estresse entre profissionais de enfermagem emergencistas: estudo transversal

Evaluación de la depresión, ansiedad y estrés en profesionales de enfermería de urgencias: estudio transversal

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ABSTRACT
Objective: to assess depression, anxiety and stress symptoms in Nursing professionals working in an emergency service for adults and to associate symptoms across groups by gender, professional category and employment contract. **Method:** a cross-sectional study conducted in the second half of 2023 with Nursing professionals from a public hospital in Minas Gerais, using a sociodemographic questionnaire and the Depression, Anxiety and Stress Scale. Descriptive analysis and a Student's t-test were performed. **Results:** most of the professionals presented symptoms at normal levels; however, a significant number with depression (n=17; 38.6%), anxiety (n=13; 29.5%) and stress (n=17; 38.6%) symptoms between moderate and extremely severe stand out. **Conclusion:** women presented higher levels for all three symptoms; nursing technicians reported more depression, while nurses more anxiety and stress; and professionals with more than one employment contract had higher levels than those who did not, with statistical significance for depression.
Descriptors: Nurse Practitioners; Emergency Medical Services; Depression; Anxiety; Stress, Psychological.

RESUMO
Objetivo: avaliar os sintomas de depressão, ansiedade e estresse em profissionais de enfermagem que trabalham em um pronto-socorro adulto e associar os sintomas entre grupos por gênero, categoria profissional e vínculo empregatício. **Método:** estudo transversal, realizado com profissionais de enfermagem de um hospital público, em Minas Gerais, no segundo semestre de 2023, usando um questionário sociodemográfico e a escala de depressão, ansiedade e estresse. Realizado análise descritiva e teste T de *Student*. **Resultados:** a maioria dos profissionais apresentou sintomas em níveis normais, contudo destaca-se um número expressivo com sintomas de depressão (n=17; 38,6%), ansiedade (n=13; 29,5%) e estresse (n=17; 38,6%) entre níveis moderados a extremamente graves. **Conclusão:** as mulheres apresentaram maiores níveis para os três sintomas; técnicos em enfermagem relataram mais depressão enquanto que enfermeiros mais ansiedade e estresse; e os profissionais com mais de um vínculo empregatício tiveram maiores níveis do que aqueles que não tinham, sendo estatisticamente significativo para depressão.
Descritores: Profissionais de Enfermagem; Serviços Médicos de Emergência; Depressão; Ansiedade; Estresse Psicológico.

RESUMEN
Objetivo: evaluar síntomas de depresión, ansiedad y estrés en profesionales de enfermería que trabajan en un serevicio de urgencias para adultos y asociar los síntomas entre grupos considerando género, categoría profesional y relación laboral. **Método:** estudio transversal, realizado con profesionales de enfermería de un hospital público, en Minas Gerais, en el segundo semestre de 2023, mediante un cuestionario sociodemográfico y la escala de depresión, ansiedad y estrés. Se realizó análisis descriptivo y prueba t-Student. **Resultados:** la mayoría de los profesionales presentaron síntomas en niveles normales, sin embargo, se destacó un número significativo con síntomas de depresión (n=17; 38,6%), ansiedad (n=13; 29,5%) y estrés (n=17; 38,6%) entre niveles moderados a extremadamente severos. **Conclusión:** las mujeres presentaron niveles más elevados en los tres síntomas; técnicos de enfermería reportaron más depresión, mientras que enfermeros informaron más ansiedad y estrés; por su parte, profesionales con más de una relación laboral presentaron niveles más altos que los que no la tenían, siendo un factor estadísticamente significativo para la depresión.
Descriptores: Enfermeras Practicantes; Servicios Médicos de Urgencia; Depresión; Ansiedad; Estrés Psicológico.

INTRODUCTION

Nursing professionals, including nurses and nursing technicians, who work in emergency services face higher stress levels than those working in other hospital sectors. It should be noted that emergency services such as emergency rooms are hospital units that provide immediate assistance to patients who require urgent healthcare, representing one of the Emergency Care Network components, in addition to being environments prone to conflicts between professionals themselves, complaints from patients and family members and risks of adverse events[1].

The care provided in emergency units aims at ensuring assistance in intensified acute or chronic cases of a clinical, traumatic or psychiatric nature, which requires professionals to respond quickly in performing procedures that enable safeguarding unstable patients. Such care takes place in a context marked by fast-paced and intense work. Thus, the working conditions in emergency services (including work overload combined with the psychological demands of caring for critically-ill patients) can lead Nursing professionals to common mental disorders[2] such as depression, anxiety and stress.

Depression can be caused by emotional changes that lead a person to a state of sadness and discouragement, generating a negative perspective on how they face life[3]. Anxiety can be defined as a state of apprehension or anticipation of future events and is always accompanied by a feeling of worry and/or discomfort. It is considered pathological when it causes significant distress or functional impairment[4]. Stress is usually triggered as a psychological response to work demands and challenges that exceed a person's coping resources. It is noteworthy that this work-related symptom is an inevitable phenomenon among emergency care nurses[5], but it can extend to other Nursing professionals.

In view of the above, it is pertinent to highlight that there has been predominance of women in Nursing from its beginnings to the present day[6]. Furthermore, Nursing professionals continue to devote themselves to carrying out domestic activities after their hospital shift, which can generate even more physical and emotional overload[7]. Regarding schooling and anxiety levels, nurses working in inpatient units have high anxiety levels when compared to mid-level professionals[8]. Furthermore, it is evident that professionals with more than one employment contract present increased stress levels[9].

Nursing professionals oftentimes work long and irregular shifts, including night and weekend ones, which disrupts their work-life balance and can lead to physical and emotional exhaustion. This multifaceted context highlights the uniqueness and demanding nature of the Emergency Nursing practice[10].

Similarly, a study found that there was 20.5% prevalence of common mental disorders among 302 Nursing professionals working in emergency services, with working in tertiary-level care sectors such as emergency services for adults and intensive care units for adults (p=0.008) and holding the position of nurse as some of the related factors, with a high risk for developing these disorders (p=0.017)[2]. Another study developed in an emergency room converges with the data cited by identifying that 90% of the nurses and 42.3% of the nursing technicians presented moderate to high emotional exhaustion[11].

Considering the frequency of depression, anxiety, stress and other psychological disorders among Nursing professionals working in emergency services for adults (*Pronto-Socorro Adulto*, PSA), as well as the study object magnitude, a survey was carried out with a view to researching a specific group in the scenario in question. It should be noted that, in a previous survey of the literature in the PUBMED and LILACS databases, crossing the "Nursing Professionals", "Emergency Medical Services", "Depression", "Anxiety" and "Psychological Stress" descriptors, studies were identified in the specific context of the pandemic caused by the type-2 coronavirus[12-14] or in mobile emergency units[15], among others, but not in PSA. In view of the above, it is relevant to assess the presence of depression, anxiety and stress symptoms in these professionals, with a view to proposing actions that promote improvements in their symptoms and, mainly, their well-being and quality of life. This may exert an impact on safe and quality care for patients and, consequently, contribute to better healthcare.

The objective of this study was to evaluate the depression, anxiety and stress symptoms in Nursing professionals working in an emergency services for adults and to associate the symptoms across groups by gender, professional category and employment contract.

METHOD

This is a cross-sectional study with a quantitative approach, following the *Strengthening the Reporting of Observational Studies in Epidemiology* (STROBE) guidelines[16] to ensure quality and transparency in presenting the data, considering its relevance for observational studies.

Data collection was carried out at a public teaching hospital from Minas Gerais that serves 27 municipalities in the *Triângulo Sul* macro-region, 100% through the Unified Health System and the only one with high-complexity care in this macro-region. The hospital has 306 active beds, 22 in the emergency service for adults[17], six in the stabilization room and the rest distributed in four wards.

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The study participants were Nursing professionals working in the PSA of the aforementioned hospital. According to the work schedule, 21 nurses and 64 nursing technicians were working in the *locus* at the time of data collection, totaling 85 Nursing professionals in 12x36-hour shifts, with three nurses and ten nursing technicians normally scheduled for each 12-hour shift.

Non-probability convenience sampling was used, adopting the following inclusion criteria: Nursing professionals of both genders, aged 18 or over and who had been working in the sector for at least three months, aiming to ensure that the participants had sufficient experience in the work environment to report possible impacts on their mental health. Those who were away due to illness, temporary leave or vacation, or who could not be found after three attempts were excluded. Of the 85 professionals, 22 were excluded and 19 refused to take part in the study.

Data collection took place in the second half of 2023 and was conducted by three Nursing students that had been previously trained by their supervisor. The data were collected in a private room at the workplace, ensuring confidentiality. the Nursing professionals were approached and, after due explanation of the research objectives, answered the questionnaire when they were available. For those who were unavailable at the time of the approach, the forms were delivered and collected during the next shift, ensuring anonymity of the answers by storing them in sealed envelopes.

The data collection instrument consisted of a sociodemographic, clinical-therapeutic and work questionnaire prepared by the researchers. This questionnaire included variables such as age, gender, self-declared race, marital status, religion, monthly family income, highest degree obtained, professional activity, time working at the PSA, additional employment contract, self-declaration regarding presence of diagnosed physical or psychological diseases and completion of pharmacological and non-pharmacological treatment.

The *Depression, Anxiety and Stress Scale* (DASS-21) consisting of 21 self-report questions divided into three subscales (Depression, Anxiety and Stress) was used to assess the depression, anxiety and stress symptoms. This instrument is considered easy to apply and understand. The questions assess the degree to which each participant experienced symptoms related to these emotional states in the last week. The answers follow a *Likert* scale from 0 to 3, as follows: 0 - It did not apply at all; 1 - It applied to some degree or for a short time; 2 - It applied to a considerable degree or for a good part of the time; and 3 - It applied very much or most of the time. The final scores for each subscale were obtained by adding the items and multiplying by two to classify the symptoms[18].

The data collected were transferred to a database created in *Microsoft Office Excel*® using the double entry method to minimize errors and correct inconsistencies. A descriptive analysis was performed (absolute and relative frequency, mean and standard deviation), and then the Student's t-test was used to determine the difference between the means corresponding to depression, anxiety and stress, separating groups by gender, professional category and employment contract and adopting a 5% significance level (95% confidence interval) using IBM's *Statistical Package for the Social Sciences* (SPSS) software, version 21.

The study followed the ethical guidelines established by National Health Council Resolutions No. 466/2012 and No. 510/2016. It is part of a larger project, was approved by the Research Ethics Committee of a Public University from inland Minas Gerais and all participants signed a Free and Informed Consent Form (FICF) before taking part in the study.

RESULTS

The participants were 44 professionals with a mean age of 38.82 (±7.85) years old (minimum: 25; maximum: 61). The characterization of the participants is presented in Table 1.

Table 1: Sociodemographic, clinical, therapeutic and work characterization of the Nursing professionals in the emergency service for adults (n=44). Uberaba, MG, Brazil, 2023.

Variables	Characteristics	n	f (%)
Gender	Female	31	70.5
	Male	13	29.5
Self-reported race/skin color	White	20	45.5
	Brown	16	36.4
	Black	6	13.6
	Asian	2	4.5
Marital status	Married/Stable union	26	59.1
	Single	9	20.5
	Widowed	1	2.3
	Other	8	18.2
Religion	Catholic	20	45.5
	Spiritist	11	25.0
	Evangelical	8	18.2
	No religion defined	4	9.1
	Others	1	2.3
Diagnosed physical or psychological diseases	No	25	56.8
	Yes	19	43.2
Undergoing pharmacological treatments	No	22	20.0
	Yes	22	50.0
Undergoing non-pharmacological complementary treatments	No	35	79.5
	Yes	9	20.5
Professional performance	Nursing technician	34	77.3
	Nurse	10	22.7
Working time	3-12 months	7	15.9
	1-5 years	9	20.4
	5+ years	27	61.4
	No answer	1	2.3
Having another job	No	30	68.2
	Yes	14	31.8
Monthly family income	More than 1 to 3 minimum wages	5	11.4
	More than 3 to 5 minimum wages	21	47.7
	More than 5 minimum wages	18	40.9
Highest degree obtained	Nurses with *lato sensu* graduate degrees	5	11.4
	Nurses with *stricto sensu* graduate degrees	5	11.4
	Nursing technicians	13	29.5
	Nursing technicians with a degree	12	27.3
	Nursing technicians with a *lato sensu* graduate degree	8	18.1
	Nursing technicians with a *stricto sensu* graduate degree	1	2.3

There was predominance of women, self-declared white-skinned, married or in stable unions and Catholics. Regarding clinical and therapeutic data, most of the professionals reported not having any diagnosed physical, mental and/or psychological disease, half of them were undergoing pharmacological treatments and the majority did not undergo alternative non-pharmacological treatments.

Regarding the work characteristics, most of the interviewees worked as nursing technicians, had been active in the sector for more than five years, had no other employment contract and reported monthly family incomes above three minimum wages. Regarding the highest qualification, all nurses had graduate degrees and most nursing technicians had obtained some undergraduate and/or graduate degree. Table 2 presents the data obtained regarding depression, anxiety and stress symptoms.

Table 2: Depression, anxiety and stress Symptoms among Nursing professionals according to the DASS-21 reference values (n=44). Uberaba, MG, Brazil, 2023.

Variables	Classification	Reference	Nurses n	Nurses %	Nursing technicians n	Nursing technicians %	Total n	Total %
Depression	Normal	0-9	7	70.0	18	52.9	25	56.8
	Mild	10-13	0	0.0	2	5.9	2	4.5
	Moderate	14-20	3	30.0	7	20.6	10	22.7
	Severe	21-27	0	0.0	3	8.8	3	6.8
	Extremely severe	28+	0	0.0	4	11.8	4	9.1
Anxiety	Normal	0-7	5	50.0	22	64.7	27	61.4
	Mild	8-9	1	10.0	3	8.8	4	9.1
	Moderate	10-14	1	10.0	1	2.9	2	4.5
	Severe	15-19	1	10.0	0	0.0	1	2.3
	Extremely severe	20+	2	20.0	8	23.5	10	22.7
Stress	Normal	0-14	5	50.0	17	50.0	22	50.0
	Mild	15-18	0	0.0	5	14.7	5	11.4
	Moderate	19-25	1	10.0	7	20.6	8	18.2
	Severe	26-33	3	30.0	4	11.8	7	15.9
	Extremely severe	34+	1	10.0	1	2.9	2	4.5
Total			**10**	**100**	**34**	**100**	**44**	**100.0**

According to DASS-21, Table 2 shows that most of the Nursing professionals are within normal values; however, a significant number reported depression, anxiety and stress symptoms between the moderate and extremely severe levels, mainly in the case of nursing technicians. Table 3 shows the results corresponding to the analysis of the associations of depression, anxiety and stress symptoms across the groups.

Table 3: Association of depression, anxiety and stress symptoms across groups by gender, professional category and employment contract (n=44). Uberaba, MG, Brazil, 2023

Variables	Mean (SD)	Mean (SD)	t*	f**
	Males (n=13)	**Females (n=31)**		
Depression	1.69 (1.38)	2.23 (1.38)	-1.17	0.249
Anxiety	1.69 (1.49)	2.35 (1.74)	-1.20	0.238
Stress	1.62 (1.19)	2.35 (1.33)	-1.73	0.091
	Nurses (n=10)	**Nursing technicians (n=34)**		
Depression	1.60 (0.97)	2.21 (1.47)	-1.53	0.140
Anxiety	2.40 (1.71)	2.09 (1.69)	0.51	0.613
Stress	2.50 (1.65)	2.03 (1.22)	0.84	0.419
	With another job (n=14)	**With no other job (n=30)**		
Depression	2.71 (1.49)	1.77 (1.25)	-2.20	**0.033**
Anxiety	2.79 (1.89)	1.87 (1.53)	-1.59	0.126
Stress	2.64 (1.34)	1.90 (1.27)	-1.78	0.082

Notes: SD: Standard Deviation. *Student's t-test. **$p < 0.05$

Although there were no significant differences, it was observed that, by gender, women had higher depression, anxiety and stress levels than men; and that, by professional category, nursing technicians presented higher depression levels while nurses had higher anxiety and stress levels.

Regarding employment contracts, Nursing professionals with another contract reported higher levels for all three symptoms researched than those who only worked in the emergency service under study, with a statistically significant difference for depression.

DISCUSSION

There was predominance of women among the professionals interviewed, with a mean age of 38 years old, married and professing a defined religion, converging both with a study developed with Nursing professionals, who work in Brazilian emergency services, also with predominance of the female gender (69.4%), mean age of 37 (±8.76) years old and with religious beliefs (88.9%)[11] and with a Chinese study in which women stood out (87.7%), with a mean age of 32.85 years old and married (81.9%)[19].

The female workforce deserves to be highlighted, and the prevalence of women in Nursing is a historical and social reflection that still carries strong characteristics of feminization with it. This traditional and historical predominance of women is observed in the health area, particularly in Nursing. This scenario has been recognized over time, with figures such as Florence Nightingale in Europe and Anna Nery in Brazil standing out for their brilliant performance[6].

In the current research, a relevant number of professionals with depression, anxiety and stress symptoms at moderate to extremely severe levels was detected, as measured by DASS-21. In this perspective, an integrative review with the objective of identifying the mental health conditions of Nursing teams in hospital services revealed mental illness among these professionals in the hospital context, converging with the data of this study[20].

It is important to emphasize that women accumulate multiple responsibilities, balancing exhausting workdays with household chores and family care. A study conducted in Rio Grande do Norte showed that these professionals continued to perform household activities after hospital work, which can increase their physical and emotional overload[7], contributing to the results of the current research, where women reported more depression, anxiety and stress than men.

Regarding professional category, nurses who work in inpatient units and with higher schooling levels presented high anxiety levels when compared to those professionals with a mid-level education; these facts may be related to the responsibility level and to what is expected from professionals with higher schooling, which predisposes to anxiety[8,19], similarly to the findings of this research, in which nurses presented higher levels of both anxiety and stress than nursing technicians.

Exhaustion and depersonalization showed higher percentages among nurses when compared to nursing technicians[21]. The prevalence of stress, anxiety and depression verified in a survey conducted with Nursing professionals in the hospital context was 56.66%, 49.61% and 47.02%, respectively[9], presenting scores above the findings of the current study.

When compared to other health professionals, a study carried out in the United Kingdom estimated the prevalence of common mental disorders and found that nurses had higher rates of common mental disorders than physicians: 38.2% and 31.6%, respectively[22].

Most of the participants in a study conducted with Nursing professionals in the state of São Paulo reported having only one employment contract[23], which is consistent with the current study. A survey conducted with nursing professionals in the Emergency Room aiming at verifying the score for the Burnout Syndrome classification found predominance of professionals with a single employment contract, which is shown to be a positive characteristic to prevent the syndrome from occurring[11].

It is known that depersonalization is evidenced by professionals' behaviors, that is, distancing and negligent treatment of patients, as a way of alleviating exhaustion[11]. Therefore, it is of utmost importance that professionals have time for physical and mental rest, which can contribute to a state of alertness during care provision and reduce the chances of errors[24].

Also regarding employment, the Nursing professionals in this study that had more than one contract presented higher levels of all three symptoms researched, in line with a study that showed a negative association between number of jobs and stress levels[9]. This result can be explained by the fact that having more than one job provides a better financial situation and, consequently, lower stress levels. In Iran, it was found that inadequate remunerations were associated with the emergence of occupational stress among nurses[25].

Nursing professionals suffering from mental and behavioral disorders are highly vulnerable, especially those who work in sectors that require greater attention and have different work dynamics. Closer contact with deaths and serious diseases favors the emergence of triggering factors for developing these disorders[26].

Considering Nursing professionals' routine, the emergency services scenario is permeated by working conditions that include overload and psychological demands/needs in the care provided to critically-ill patients. Such a context can ease the appearance of common mental disorders[2].

In urgency and emergency work, where workload and demand are high, good relationships among colleagues are emphasized, as the more fluid the care provided, the fewer the complications and, consequently, the better the work-related quality of life, which can significantly favor Nursing professionals' mental well-being. It noted that strategies for facing and coping with stress are widely used to minimize the negative consequences of stress[27].

Research Article
Artigo de Pesquisa
Artículo de Investigación

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In view of the above, it is pertinent to consider that the mental well-being of Nursing professionals working in emergency hospitals is unique, complex, dynamic and multifactorial. It is important to take a careful and expanded look at these professionals in order to understand their requirements, particularities and perceptions[28]. Coping strategies focused on the individual (such as offering skills training programs, Telecare and strengthening resilience) are suggested/offered to alleviate the stress and anxiety symptoms caused in Nursing workers[29].

Considering the findings of this study, a promising alternative is to include art therapy as an intervention in hospital environments. A study conducted at a hospital in inland Paraná demonstrated that this strategy contributed benefits to Nursing professionals, improving their quality of life and promoting greater emotional well-being. This practice can be adopted in the workplace as a proposal to promote mental health, improve quality of life and, consequently, enhance the care provided to patients and their families[30].

In Spain, it was verified that daily physical exercise reduces the likelihood of psychiatric cases in professionals working in emergency services[31]. Regular physical exercise is recognized as an effective intervention for mental health, providing benefits such as reducing stress, anxiety and depression. This practice could be encouraged among the professionals included in the current study.

In summary, this study highlighted the presence of psychological symptoms in Nursing professionals working in a PSA. Given this, the need for interventions that promote mental health and quality of life at work is pointed out. Implementing effective strategies can contribute to reducing stress and anxiety levels, exerting positive impacts both on workers' health and on quality of the care provided.

Study limitations

This study had some limitations, including low participant adherence during data collection, which may have exerted an impact on representativeness of the sample. In addition, the cross-sectional design does not allow establishing causal relationships between the variables analyzed. Another limitation refers to the availability of specific studies on the mental health of Nursing professionals working in emergency rooms, which may hinder a direct comparison of the findings with the existing literature. These aspects reinforce the need for future research to deepen understanding of this topic.

CONCLUSION

This study showed that, although most of the professionals in the emergency service for adults under study presented normal symptoms of depression, anxiety and stress levels, a significant percentage presented these symptoms at moderate to extremely severe levels. In the associations, all three symptoms were more evident in women and in professionals with more than one employment contract; in turn, by category, there were higher depression levels among nursing technicians and anxiety and stress among nurses. These findings highlight the importance of monitoring these professionals' mental health, especially in high-demand environments such as emergency services.

It is suggested that management staff be sensitive to the need for support and actions that contribute to promoting mental health among nursing and health professionals in general, as they are exposed to a daily routine marked by several elements with the potential to trigger mental health disorders.

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Author's contributions

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The authors declare that no artificial intelligence tools were used in the composition of the manuscript "*Assessment of depression, anxiety and stress among emergency Nursing professionals: a cross-sectional study*".