

Occupational stress among nurses across diverse healthcare services: a cross-sectional study

Estrés laboral entre enfermeros de diversos servicios de salud: un estudio transversal

Estresse ocupacional entre enfermeiros de diversos serviços de saúde: um estudo transversal

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ABSTRACT

Objective: to investigate the levels of occupational stress among nurses working in different healthcare services in Brazil. **Method:** this is a cross-sectional study with data collected from 416 nurses between May 31, 2023, and January 31, 2024, through an online questionnaire covering sociodemographic variables and the Work Stress Scale. Data analysis was conducted using PSPP version 1.6.2-g78a33a. The Mann-Whitney U and Kruskal-Wallis tests were applied. **Results:** the majority of nurses (61.5%) presented high levels of occupational stress. The sub-dimensions “Autonomy and control” (2.92 ± 0.95), “roles and work environment” (2.77 ± 1.01) and “growth and recognition” (2.76 ± 1.11) of the Work Stress Scale showed the highest scores of stress. There was no significant relationship between the nurses’ sociodemographic variables and their occupational stress scores ($p > 0.05$). **Conclusion:** structural and cultural changes are crucial for reducing the level of occupational stress among nurses. The study emphasizes the key role of healthcare administrators and nurse managers in promoting healthier and more collaborative work environments through effective management and leadership.

Descriptors: Occupational Stress; Nurse Administrators; Nursing; Working Conditions; Workplace.

RESUMEN

Objetivo: investigar los niveles de estrés laboral entre enfermeros que trabajan en diferentes servicios de salud en Brasil. **Método:** se trata de un estudio transversal, con datos recopilados de 416 enfermeros entre el 31 de mayo de 2023 y el 31 de enero de 2024 a través de un cuestionario en línea. Se utilizó un cuestionario sociodemográfico y la Escala de Estrés Laboral. El análisis de datos se realizó utilizando PSPP versión 1.6.2-g78a33a. Se aplicaron pruebas de Mann-Whitney U y Kruskal-Wallis. **Resultados:** la mayoría de los enfermeros (61,5%) presentó niveles elevados de estrés ocupacional. Las subdimensiones “autonomía y control” (2.92 ± 0.95), “roles y ambiente de trabajo” (2.77 ± 1.01) y “crecimiento y reconocimiento” (2.76 ± 1.11) de la Escala de Estrés Laboral obtuvieron las puntuaciones más altas. No se encontró una relación significativa

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*entre las variables sociodemográficas de los enfermeros y sus niveles de estrés laboral ($p>0.05$). **Conclusión:** los cambios estructurales y culturales son cruciales para reducir el nivel de estrés laboral entre los enfermeros. El estudio destaca el papel clave de los administradores sanitarios y los gestores de enfermería en promover entornos de trabajo más saludables y colaborativos mediante una gestión y liderazgo eficaces.*

***Descriptor:** Estrés Laboral; Enfermeras Administradoras; Enfermería; Condiciones de Trabajo; Lugar de Trabajo.*

RESUMO

Objetivo: investigar os níveis de estresse ocupacional entre enfermeiros que trabalham em diferentes serviços de saúde do território brasileiro. **Método:** trata-se de um estudo transversal, com dados coletados de 416 enfermeiros entre 31 de maio de 2023 e 31 de janeiro de 2024 por meio de um questionário online. Um questionário sociodemográfico e a Escala de Estresse no Trabalho foram utilizados. A análise dos dados foi realizada utilizando o PSPP versão 1.6.2-g78a33a. Foram aplicados os testes de Mann-Whitney U e Kruskal-Wallis. **Resultados:** a maioria dos enfermeiros (61,5%) apresentou níveis elevados de estresse ocupacional. As sub-dimensões “autonomia e controle” (2.92 ± 0.95), “funções e ambiente de trabalho” (2.77 ± 1.01) e “crescimento e reconhecimento” (2.76 ± 1.11) da Escala de Estresse no Trabalho obtiveram as pontuações mais altas. Não foi encontrada uma relação significativa entre as variáveis sociodemográficas dos enfermeiros e seus níveis de estresse ocupacional ($p>0.05$). **Conclusão:** mudanças estruturais e culturais são cruciais para reduzir o nível de estresse ocupacional entre os enfermeiros. O estudo destaca o papel fundamental dos administradores de saúde e gestores de enfermagem na promoção de ambientes de trabalho mais saudáveis e colaborativos através de uma gestão e liderança eficazes.

Descritores: Estresse Ocupacional; Enfermeiras Administradoras; Enfermagem; Condições de Trabalho; Local de Trabalho.

INTRODUCTION

Nursing is known to be a stressful profession. Nurses are constantly exposed to various risks that threaten both their physical and mental health¹. Several factors can trigger stress in nurses, such as the risk of acquiring infections, excessive working hours, a high patient load, role demands, exposure to physical and verbal violence, conflicts with supervisors, and lack of autonomy and recognition, among others²⁻⁴.

Stress is characterized as a response to external pressures and arises when individuals are no longer able to control their emotions and maintain a natural state⁵. Stressful situations due to pressures in the work environment are very common². Occupational stress, therefore, refers to the set of adverse physical, emotional, and psychological reactions that can occur when there is an imbalance between the demands of the job and the individual's ability to cope with these demands^{6,7}.

The stressors affecting nurses have become even more significant with the advent of the COVID-19 pandemic. The fear of contracting the disease and contaminating loved ones, the lack of Personal Protective Equipment (PPE), the illness and death of colleagues and discrimination against healthcare workers who were initially considered as spreaders of the disease, among other factors, have increased the levels of occupational stress among nurses^{1,8,9}. Scientific research conducted in Brazil and other countries identified the presence of stress in nurses before^{2,10} and during the COVID-19 pandemic^{1,11,12}.

High levels of stress among nurses pose a threat to both the professionals and the patients under their care because stressed nurses may struggle to provide quality care^{4,13}. Additionally, there is a negative relationship between stress and job satisfaction. Poor working conditions are strong reasons for nurses to feel dissatisfied while performing their duties, as the working hours are long, the salary is low, interpersonal conflicts are numerous, and recognition is minimal^{14,15}.

Stress and job dissatisfaction are among the main reasons for nurse turnover^{16,17}, which in turn is another

factor that negatively impacts patient care¹⁸. Therefore, retaining experienced nursing teams within healthcare institutions should be one of the primary objectives of managers.

Promoting a stress-free work environment where nurses feel satisfied in performing their duties brings benefits to both the professionals and their patients, directly impacting the success of the healthcare institution, as satisfied nurses tend to be more efficient and effective¹⁹. Therefore, healthcare administrators and nurse managers should pay attention to signs of occupational stress among their team members, seeking to develop measures aimed at alleviating pressures at the workplace and implementing strategies for stress management. This will improve the work environment and enable nurses to feel good while carrying out their functions²⁰⁻²².

It is understood that various factors can lead to occupational stress among nurses. Stress, in turn, can result in feelings of dissatisfaction and demotivation, negatively impacting the productivity and effectiveness of nurses. Additionally, it increases the likelihood of resignation requests, highlighting the importance of addressing the issue. Thus, the objective of this study was to

investigate the levels of occupational stress among nurses working in different healthcare services across the Brazilian territory.

METHODS

This is a cross-sectional, descriptive study with a quantitative approach. It is reported following the tool for observational studies in epidemiology (STROBE)²³. The target population consisted of nurses working in Brazil. The inclusion criteria for participation in the survey were (a) being a nurse, (b) having worked as a nurse in any department of healthcare institutions for at least one year, and (c) having accepted to participate in the survey.

Although the Federal Nursing Council provides information on the number of active nurses in Brazil, it is not possible to determine how many of them meet the research criteria. Given that the number of nurses in Brazil is very large (approximately 700,000), the sample size calculation was performed considering a very large or unknown population. According to the calculation, a sample of 384 nurses would be sufficient, considering a confidence interval of 95% and a margin of error set

at 0.05. Participants who, despite meeting the inclusion criteria, did not fill out the questionnaire correctly were excluded from the study.

An online questionnaire was employed for data collection. Google Forms was used for the preparation and distribution of the questionnaire. This platform offers convenience for both researchers and participants, allowing respondents to complete the research instrument at any time and location²⁴. Such flexibility of the research instrument is particularly advantageous when aiming to reach participants from different locations.

Recruitment took place through various social media applications. Instant messages were sent to individuals residing in different Brazilian states who identified themselves as nurses on their profiles. The messages included information about the study, the link to the Informed Consent Form (ICF), and the Google Forms questionnaire. Data were collected between May 31, 2023, and January 31, 2024.

The study was based on the Helsinki Declaration. No identifiable information about the participants was collected. The study received approval from the Ethics Committee of the Anna Nery School of Nursing - São Francisco de

Assis School Hospital of the Federal University of Rio de Janeiro through the Brazil Platform (approval date: 30.05.2023; decision number: 6.091.362). The participants were asked to read the consent page and select a response indicating their consent. Permission was obtained to use the Work Stress Scale (WSS).

A questionnaire comprising two sections was developed for data collection. The first section aimed to gather sociodemographic information and characterize the participants, including questions about personal characteristics such as age, gender, education, and marital status, as well as professional characteristics like years of experience, work department, working hours, and type of shift, among others. The second part of the questionnaire consisted of the Work Stress Scale (WSS). A pilot test was conducted with 40 participants recruited in the same manner as the other participants, who had similar characteristics. Since no changes were needed to the research instrument after the pilot test, these participants were also included in the final sample.

The WSS was developed and validated for the Brazilian population by Paschoal and Tamayo⁶ based on a review

of the literature on organizational stressors of a psychosocial nature and psychological reactions to occupational stress, as well as an analysis of existing instruments. Specifically, 40% of the items were based on the stressors described in the Brazilian version of the Occupational Stress Indicator (OSI)²⁵ and the instrument by Rizzo, House and Lirtzman²⁶ that addresses role conflict and ambiguity. The scale was developed with the purpose of creating a comprehensive, practical tool applicable to various occupations in diverse work environments. The WSS consists of 23 items, and participants respond using a Likert scale with five points of agreement: 1 (totally disagree), 2 (disagree), 3 (partially agree), 4 (agree), and 5 (totally agree). The scale encompasses five sub-dimensions: autonomy and control, roles and work environment, relationship with the supervisor, interpersonal relationships, and growth and appreciation.

The interpretation of scores on the scale follows a general mean criterion, in which scores below 2.5 indicate a perceived low level of occupational stress, scores equal to 2.5 indicate a moderate level of stress, and scores above 2.5 denote levels considered high. It is worth noting that

the scale had high internal consistency, with a Cronbach's alpha coefficient of 0.91⁶.

Data analysis was conducted using PSP version 1.6.2-g78a33a. The program was chosen for its compatibility with a language similar to those accepted by SPSS statistical products and its availability for free use. Information such as frequency, percentage, mean and standard deviations were used to present descriptive statistics. The normality of the data distribution was assessed using scatter plots and the Kolmogorov-Smirnov test. The Mann-Whitney U and Kruskal-Wallis tests were applied to examine the relationships between occupational stress and sociodemographic variables. The statistical significance was set at $p < 0.05$.

RESULTS

Out of the 505 survey responses, 89 either did not meet the inclusion criteria or were incomplete/incorrect. After excluding these questionnaires, the final number of participants included in the analysis was 416.

The sample was predominantly female ($n=343$, 82.5%), aged between 26 and 35 years ($n=216$, 51.9%). A significant proportion held post-graduate (specialization) degrees ($n=338$, 81.3%) and informed to be single ($n=185$, 44.5%). Demographic characteristics of the participants are presented in Table 1.

Table 1 - Demographic characteristics of the participants. ($n=416$)

	<i>n</i>	%
Gender		
Female	343	82.5
Male	73	17.5
Age		
25 or less	42	10.1
26-35	216	51.9
36-45	117	28.1
46 or more	41	9.9
Highest educational level		
Bachelors' degree	39	9.4
Post-graduate (Specialization)	338	81.3
Master's degree	33	7.9
Doctorate	6	1.4
Marital status		
Single	185	44.5
Married	142	34.1
Stable union	63	15.1
Separated	6	1.4
Divorced	17	4.1
Widowed	3	0.7

In terms of professional characteristics, the majority of participants had only one job (n=299, 71.9%), worked in private healthcare institutions (n=194, 46.6%) primarily situated in the Southeastern region of the country (n=172, 41.3%). A considerable number of participants worked in nursing wards (n = 95, 22.8%),

had a work experience ranging from one to five years (n=231, 55.5%), and most of them worked on day shifts (n=321, 55.5%). The weekly work hours for most participants fell within the range of 40-48 hours (n=242, 58.2%). The professional characteristics of the participants are presented in Table 2.

Table 2 - Professional characteristics of the participants. (n=416)

	<i>n</i>	%
Having more than one job		
No	299	71.9
Yes	117	28.1
Type of organization		
Private	194	46.6
Public	171	41.1
Public and Private*	51	12.3
Work region		
Southeastern	172	41.3
Northeastern	102	24.5
Southern	78	18.8
Central-Western	35	8.4
Northern	29	7.0
Work department		
Administration	67	16.1
Emergency service	65	15.6
Primary health	65	15.6
Intensive care unit	67	16.1
Operation room	25	6.0
Outpatient clinic	32	7.7
Nursing ward	95	22.8
Work experience as a nurse		
1-5 years	231	55.5
6-10 years	88	21.2
11-15 years	59	14.2
16 or more years	38	9.1
Type of shift		
Day	321	55.5
Night	63	15.1
Mixed	122	29.3
Working hours per week		
20-24	10	2.4
30-36	91	21.9
40-48	242	58.2
50-54	18	4.3
60-64	29	7.0
70 or more	26	6.3

Occupational stress results

Among the participants, 61.5% (n=256) exhibited a high level of occupational stress. In the “autonomy and control” sub-dimension of the WSS, 63.7% (n=265) of participants experienced high levels of stress. Regarding the “roles and work environment” sub-dimension, 58.4% (n=243) reported high levels of stress. In

terms of the “relationship with the supervisor”, 57.5% (n=239) had high levels of stress. In the “interpersonal relationships” sub-dimension, 52.6% (n=219) showed low levels of stress. In the “growth and recognition” sub-dimension, 54.1% (n=225) of participants exhibited high levels of stress. The occupational stress levels of the Participants are summarized in Table 3.

Table 3 - Occupational stress levels of the participants. (n=416)

Sub-dimensions	Min	Max	Mean	SD	Skewness	Kurtosis	Cronbach's alpha
Autonomy and control	1.00	5.00	2.92	0.95	-0.01	-0.63	0.80
Roles and work environment	1.00	5.00	2.77	1.01	0.14	-0.79	0.77
Relationship with the supervisor	1.00	5.00	2.75	1.12	0.17	-0.94	0.84
Interpersonal relationships	1.00	5.00	2.61	1.04	0.39	-0.65	0.68
Growth and recognition	1.00	5.00	2.76	1.11	0.19	-0.87	0.78
WSS	1.00	4.83	2.78	0.91	0.04	-0.81	0.94

Reliability of the scale and descriptive statistics of the scores obtained by participants

The scale showed a high level of reliability. The Cronbach’s alpha of the WSS was 0.94. The mean occupational stress score among participants was 2.78 ± 0.91, considered high. The sub-dimensions with the highest scores were

“autonomy and control” (2.92 ± 0.95), “roles and work environment” (2.77 ± 1.01), and “growth and recognition” (2.76 ± 1.11). However, it is noteworthy that in the other two sub-dimensions, the mean occupational stress levels of the sample were also significantly high. Details are shown in Table 4.

There were no statistically significant differences in occupational

stress scores between groups of nurses according to their sociodemographic characteristics ($p < 0.05$). The mean occupational stress scores were

consistently high across all groups within the various sociodemographic categories analysed.

Table 4 - Descriptive statistics of the scores obtained by participants and reliability coefficient.

Stress levels	<i>n</i>	%
Autonomy and control		
Low	129	31.0
Moderate	22	5.3
High	265	63.7
Roles and work environment		
Low	173	41.6
Moderate	-	-
High	243	58.4
Relationship with the supervisor		
Low	177	42.5
Moderate	-	-
High	239	57.5
Interpersonal relationships		
Low	219	52.6
Moderate	-	-
High	197	47.4
Growth and recognition		
Low	168	40.4
Moderate	23	5.5
High	225	54.1
WSS		
Low	160	38.5
Moderate	-	-
High	256	61.5

DISCUSSION

This study is one of the first to investigate the occupational stress levels among nurses working in different healthcare services across the Brazilian territory in the post-COVID-19 pandemic period. Stress, a physiological response to challenging or threatening situations, is a complex reaction involving physical, emotional, and behavioral aspects⁵.

When these reactions are manifested as a result of work-related experiences, the phenomenon is commonly referred to as occupational stress^{6,7}. The majority of nurses participating in this study exhibited high levels of occupational stress. These findings contrast with previous studies conducted in Brazil.

For example, in a study assessing the stress levels of nursing professionals working in the Mobile Emergency Care

Service of a Brazilian city, the majority of the participants did not experience stress²⁷. Another study conducted in Brazil found that members of the nursing team in intensive care units of a public hospital presented moderate levels of stress²⁸.

The high rate of occupational stress among the participants in the present study may be one of the consequences of the recent COVID-19 pandemic, since Brazil was one of the countries most severely affected by the disease²⁹. Many Brazilian nursing professionals were infected and lost their lives due to COVID-19³⁰.

Furthermore, the post-pandemic period has been marked by economic crises and a high unemployment rate³¹, which may have negatively impacted nurses, leading to an increase in their stress levels. These assertions are supported by the results of a study conducted with 2986 Brazilian nursing professionals during the COVID-19 pandemic, where approximately 90% of participants reported occupational stress¹².

Studies conducted in different countries have also found that a significant percentage of nurses reported occupational stress due to the COVID-19 pandemic³². A study conducted in the

United States identified that the increased stress levels triggered by the advent of COVID-19 resulted in higher nurse turnover rate over the past two years³³.

The COVID-19 pandemic posed an unprecedented global threat, impacting all sectors of society. Nurses were particularly affected by the urgency and scale of the crisis, leading to an increased workload and role demands³⁴. However, the pandemic also brought about a greater recognition of the essential role of nurses in healthcare. It had an impact on the autonomy and challenges to decision-making, with nurses often making critical decisions independently but facing limitations due to rapidly changing circumstances³⁵. Naturally, all these factors may have contributed to a significant rise in the level of occupational stress among these healthcare workers.

In a previous study conducted in Brazil, the female nursing staff exhibited higher levels of occupational stress than their male colleagues²⁷. On the other hand, in Lima *et al*¹² study, it was identified that higher levels of education, income, and complexity of the care provided were associated with a higher prevalence of occupational stress

among nursing team members in Brazil. Generally, healthcare institutions are surrounded by stress-triggering factors, but certain sectors, such as emergency services and intensive care units, may be even more stressful due to workload, patients' characteristics and their illnesses^{10,36}.

In the study conducted by Llapa-Rodriguez *et al*² in a Brazilian university hospital, shifts and work units showed significant associations with the presence of stress among nurses. All these findings from previous studies carried out in Brazil differ from those of the current study, where there was no significant relationship between the sociodemographic variables of the nurses and their stress scores.

High stress levels were observed in all groups across different sociodemographic groups. The observed uniformity highlights the widespread prevalence of occupational stress among the participating nurses. These results have significant implications for the health and well-being of the nursing workforce, suggesting the need for global interventions and comprehensive approaches to manage stress in the workplace.

Occupational stress can be linked to various factors. In a previous study

conducted in Brazil in which stress among nurses was analysed, career stressor factors such as a lack of autonomy and role ambiguity presented the most significant items². Factors related to the lack of autonomy are consistently identified in different studies as crucial triggers of stress in nurses^{2,37}.

Aspects related to unclear definitions of the role of the nurses and a lack of autonomy to address care or managerial issues negatively impact the mental health of these healthcare workers, leading to occupational stress³⁷. It is understood that both lack of autonomy^{2,37} and increase in autonomy without adequate support and resources can trigger occupational stress among nurses³⁸.

A study conducted in Indonesia identified that the workload, work environment, and dual role conflict were associated with occupational stress among nurses³. It is observed that stress in nurses can be exacerbated due to role overload^{10,22} and the lack of clear role boundaries and role incompatibility^{22,37}.

The results of a study conducted in Canada suggest that promoting work environments where the efforts and achievements of nurses are recognized, both formally and informally, is crucial

for mitigating occupational stress³⁹. A similar result was observed in a study with Iranian nurses, indicating that the lack of organizational support and recognition, along with societal devaluation, leads to job stress⁴⁰. All these findings align with those of the present study, where all sub-dimensions of the WSS showed high mean scores. However, the sub-dimensions “autonomy and control,” “roles and work environment,” and “growth and recognition” had the highest mean scores (2.92 ± 0.95 , 2.77 ± 1.01 , and 2.76 ± 1.11 , respectively).

It is important to highlight that the sub-dimension “relationship with the supervisor” also showed a high mean score, indicating that the majority of participants experiencing high levels of stress. It is known that interpersonal relationships with supervisors directly impact the stress level among nurses. A study with Filipino nurses emphasized that the presence of toxic nursing leaders significantly increases nurses’ stress levels⁴¹. Conversely, a study in Iran indicated that when leaders adopt transformational or transactional leadership styles, nursing team members exhibit lower levels of stress⁴².

These results are in line with those of the present study,

demonstrating that the leadership style adopted by nurse managers interferes with the stress levels of other nursing team members. However, it is noticeable that the factors that stood out as triggers of high stress levels in nurses in this study are related to historical aspects of the profession.

Despite the evolution and achievements of the nursing profession, there are persistent challenges such as role definition, autonomy, and recognition. Historical influences, including gender and social class barriers, economic demands, and resistance to expanding nursing roles, have resulted in limited autonomy, lack of recognition, and shortage of nurses. The relationship between nurses and physicians is marked by ongoing discussions about professional autonomy and collaborative practice, influenced in part by the predominant femininity of the nursing profession. These historical factors continue to shape the education, training, and overall atmosphere of the nursing profession in modern times⁴³.

Stress among nurses is intrinsically linked to various dimensions that directly impact the healthcare system. The health and well-being of nurses are negatively affected by constant stress, what is manifested in

both physical and mental symptoms¹³. Chronic stress significantly influences job satisfaction, leading to lower levels of professional contentment and increasing the likelihood of burnout, contributing to high turnover rates^{20,33}.

Results from a study conducted in Nigeria show that role conflict, workload, insufficient social support, and a poor work environment, besides being stress triggers, have a significant negative relationship with nurses' job satisfaction²¹. These challenges faced by nurses have direct repercussions on the quality of patient care¹³.

Stress can catalyse errors during the work routine, directly impacting patient safety. Therefore, addressing the nurses' stress should be seen not only as an individual issue but as a critical component of the healthcare system. Another noteworthy factor is the need to better prepare nurses for crises and the moments that follow such critical situations^{20,32}. Support programs addressing the physical, mental, and social needs of nurses can assist them to manage stress.

To the best of my knowledge, this is the first study conducted to investigate the level of stress among Brazilian nurses after the COVID-19 pandemic. The study presents significant

findings as it reveals a high rate of occupational stress among nurses from various sociodemographic groups. The elevated level of stress is particularly linked to issues related to autonomy, control, roles, work environment, growth and recognition. Despite reporting important results, the study has limitations.

Establishing causal relationships remains unfeasible, and the generalizability of the results is limited. Moreover, nurses who were not on social media may not have been recruited, and the inability to gauge non-response poses a challenge. Finally, the use of self-report items increases the risk of recall or response bias.

CONCLUSION

The majority of nurses presented high levels of occupational stress. In all sub-dimensions of the WSS, the mean stress scores for the majority of nurses were high. However, the sub-dimensions "autonomy and control", "roles and work environment" and "growth and recognition" exhibited the highest values. There was no significant relationship between the sociodemographic variables of the nurses and their stress scores, as high stress

levels were observed in all groups across different sociodemographic groups.

By highlighting issues related to autonomy, role demands, and recognition as contributing factors to stress among nurses, the results point to the need for a revision of management practices and organizational structures in healthcare institutions. Factors associated with high levels of occupational stress in nurses have historical roots. Structural and cultural changes, such as promoting workplace autonomy, providing clear role definitions, and ensuring adequate recognition, are crucial for reducing occupational stress among nurses.

Additionally, since negative relationships with supervisors also emerged as a significant factor in triggering occupational stress in nurses, leadership styles aimed at fostering a healthy work environment need to be addressed. Concurrently, the implementation of effective stress management strategies is also essential for improving the emotional well-being of nurses.

Considering that stress among nurses can have a direct impact on the quality of care, implementing interventions and policies aimed at improving nurses' working conditions is

very important. Therefore, healthcare administrators and nurse managers have a crucial role in promoting management practices and leadership styles that value the creation of more collaborative work environments.

This includes the development of programs for psychological support and stress management for nurses. By addressing these issues, the present study contributes to the conception of healthier environments, enhancing not only the nurses' experience but also the safety and quality of care provided to patients and the community.

Further studies using different methodologies such as qualitative approaches should be carried out to delve more specifically into the reasons behind stress among nurses. Exploratory studies addressing innovative methods for stress management could also provide valuable contributions to the scientific literature.

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