

# Nurses' stress and resilience before and after evaluation for hospital accreditation

*Estresse e resiliência de enfermeiros antes e depois da avaliação para acreditação hospitalar*  
*Estrés y resiliencia de enfermeros antes y después de la evaluación para acreditación de hospitales*

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## ABSTRACT

**Objectives:** to analyze and compare levels of stress and resilience in nurses before and after the assessment for maintenance of the Hospital Accreditation Certification. **Methods:** quantitative, observational, and longitudinal research, with 53 nurses from a philanthropic hospital, in the Rio Grande do Sul. Data collected in two stages, March, and July 2019, before the assessment visit and 60 days after, using the Bianchi Stress Scale and Resilience Scale. Descriptive and analytical statistics were employed. **Results:** the majority of participants showed an average stress level before and after the evaluation. The highest stress scores were related to Domains E (coordination of unit activities) and C (activities related to personnel administration). In both moments of the study, the participants had medium and high resilience. **Conclusions:** managing people, processes, and assistance are stressful activities in the Accreditation process and increase the nurses' stress levels.

**Descriptors:** Nurse Administrators; Professional Burnout; Psychological Resilience; Hospital Accreditation; Hospital Nursing Service.

## RESUMO

**Objetivos:** analisar e comparar níveis de estresse e resiliência de enfermeiros antes e depois da avaliação para manutenção da Certificação de Acreditação Hospitalar. **Métodos:** pesquisa quantitativa, observacional e longitudinal, com 53 enfermeiros de um hospital filantrópico, no estado do Rio Grande do Sul. Dados coletados em duas etapas, março e julho de 2019, antes da visita de avaliação e 60 dias depois. Utilizou-se Escala Bianchi de Stress e Escala de Resiliência. Empregouse estatística descritiva e analítica. **Resultados:** a maioria dos participantes apresentou nível médio de estresse antes e depois da avaliação. Maiores escores de estresse foram referentes aos Domínios E (coordenação das atividades da unidade) e C (atividades relacionadas à administração de pessoal). Nos dois momentos do estudo, os participantes encontravam-se com capacidade de resiliência média e alta. **Conclusões:** gerenciar pessoas, processos e assistência são atividades desgastantes no processo de Acreditação e elevam os níveis de estresse dos enfermeiros.

**Descritores:** Enfermeiras Administradoras; Esgotamento Profissional; Resiliência Psicológica; Acreditação Hospitalar; Serviço Hospitalar de Enfermagem.

## RESUMEN

**Objetivos:** analizar y comparar niveles de estrés y resiliencia de enfermeros antes y después de evaluación para mantención de Certificación de Acreditación de Hospitales. **Métodos:** investigación cuantitativa, observacional y longitudinal, con 53 enfermeros de hospital filantrópico, en Rio Grande del Sul. Datos recolectados en dos etapas, marzo y julio de 2019, antes de la invitación de evaluación y 60 días después. Utilizado Escala de Estrés Bianchi y Escala de Resiliencia. Empleado estadística descriptiva y analítica. **Resultados:** mayoría de los participantes presentaron nivel mediano de estrés antes y después de la evaluación. Mayores escores de estrés fueron referentes a Dominios E (coordinación de actividades de la unidad) y C (actividades relacionadas a administración de personal). En los dos momentos, los participantes encontraban con capacidad de resiliencia mediana y alta. **Conclusiones:** gerenciar personas, procesos y asistencia son actividades agotadoras en la Acreditación y elevan los niveles de estrés de los enfermeros.

**Descritores:** Enfermeras Administradoras; Agotamiento Profesional; Resiliencia Psicológica; Acreditación de Hospitales; Servicio de Enfermería en Hospital.

## INTRODUCTION

Healthcare institutions seek improvements in quality, safety, and sustainability. To this end, health care services explore management strategies to enable sustainability by improving and evaluating services provided<sup>(1)</sup>. In this context, Accreditation Certifications are gaining ground because they are processes focused on evaluating, monitoring, and certifying institutions that want to qualify<sup>(2)</sup>.

Accreditation consists of an external process that evaluates the reality of the contracting institution, with periodic visits and focuses on previously defined quality standards, according to the methodology of the chosen accreditor<sup>(1)</sup>. In Brazil, the *Organização Nacional de Acreditação* (ONA) is the entity that guides the *Instituições Acreditoras Credenciadas* (IACs) in the development of this evaluation process with health care services<sup>(3)</sup>.

These new institutional perspectives impact the activities of health care professionals, especially nurses, who assume strategic roles in the elaboration, conduction, and continuous evaluation of care improvement processes<sup>(4)</sup>, generating administrative demands that involve the Accreditation process, such as the elaboration of protocols, management of indicators, costs, and personnel, as well as care activities. It is noteworthy that the most important demands inherent to this process fall on nurses, who still experience more significant pressure with the goals, lack of appreciation, and live with little adherence from other members of the multi-professional team<sup>(5)</sup>. A study conducted in Denmark concluded that general attitudes towards accreditation were positive among nurses, although physicians were more skeptical<sup>(6)</sup>. In this context, despite the critical role of nurses in the managerial approach of the Accreditation process since the job demands tend to increase with this process, they directly affect the health of this professional<sup>(7)</sup>.

Nurses are responsible for managing patient care and assistance and conducting managerial activities to build a link between the organizational objectives and the team. To this end, they need to develop, among other things, leadership, technological, educational, conflict management, communication, and management skills and abilities, which are paramount in their daily job<sup>(8)</sup>.

"Stressful activities in nurses' daily lives" is the subject of studies in different countries. In a survey with 1,840 nurses from Swiss public hospitals in 2015 and 2016, 1 in 12 professionals presented signs of *burnout*; and 1 in 6 considered leaving the profession. Workloads, stress, and high demands were associated with symptoms of *burnout*<sup>(9)</sup>. Another study with 2,889 participants showed that 68.3% of nurses presented high levels of occupational stress and concluded that complaints were related to work overload, understaffing, and increased demands, which hinders quality assurance and patient safety<sup>(10)</sup>.

Occupational stress derives from the work environment and is attributed to organizational, management, interpersonal relations, and assistance aspects. The continuous exposure to stressors affects the workers' health and manifests itself in different ways: sleep disorders, hypertension, diabetes, psychosomatic diseases, *burnout* syndrome, and depression<sup>(11)</sup>. A study carried out in a public hospital in Hong Kong concluded that cultural changes resulting from accreditation processes might not be long-lasting, requiring extra efforts to maintain them in the long term, which generally falls on the nurses<sup>(12)</sup>. Thus, living with stressful situations and staying healthy

requires strategies from the professional to overcome adversity and succeed them. Resilience, therefore, refers to the individual's ability to confront and come out strengthened after adverse experiences<sup>(13)</sup>. Having resilience implies recognizing the stressor, tolerating it, and learning from it. In this context, studies on resilience in nursing are essential, considering the data presented above that demonstrate the occupational stress associated with the profession<sup>(13)</sup>.

Given the damage of stress to nurses' health, the gap in knowledge about stress in Accreditation processes, and the expansion of knowledge about resilience, the interest in conducting this study emerged, whose guiding question is: What is the level of stress and resilience of nurses before and after the assessment to keep the Hospital Accreditation Certification?

## OBJECTIVES

To analyze and compare nurses' stress and resilience before and after the assessment for maintenance of Hospital Accreditation Certification.

## METHODS

### Ethical aspects

This article is part of a master's degree thesis. The *Comitê de Ética em Pesquisa* (Research Ethics Committee) approved this research project. All participants were informed about the study's objectives and signed the *Termo de Consentimento Livre e Esclarecido* (Informed Consent Form), guaranteeing the ethical precepts of anonymity, right to information, and participation in the research.

The data from this manuscript are part of the first author's master's thesis entitled "Skeletal pain, stress and resilience in nurses before and after the assessment of maintenance of hospital accreditation certification" presented to the Graduate Program in Comprehensive Health Care at UNIJUI.

### Design, period, and place of study

This observational, longitudinal, quantitative study followed the STROBE *checklist* criteria for observational studies and was conducted in a large philanthropic hospital located in the north-western region of the state of Rio Grande do Sul, which has 156 inpatient beds and is a reference for 22 municipalities in its coverage area. The data collection took place in March and July 2019.

### Population; criteria of inclusion and exclusion

The study population was composed by all nurses (60) working at the institution.

After applying the inclusion and exclusion criteria, 53 nurses were eligible to participate in the study, which corresponds to 88% of the population. Among the seven professionals not eligible to participate, three were pregnant, one was on maternity leave, two were on vacation, and one was being treated with corticosteroids.

Inclusion criteria: being a nurse and working at the hospital. Exclusion criteria: nurses who, at the first data collection, were on vacation, maternity leave, on leave, or had a medical certificate for any other reason. The study excluded all participants who did not participate in the two data collection moments. Other exclusion

criteria were pregnant nurses; people under corticosteroid treatment because the use of this medication alters cortisol levels; and also nurses diagnosed with Addison's disease because this pathology affects the adrenal glands, which start to produce an inadequate amount of corticosteroids.

For data collection, it was used the Bianchi Stress Scale (BSS) and the Resilience Scale (RE).

### Study protocol

The collection took place in two stages: the first, in March 2019, before the assessment visit for the maintenance of Level 2 Accreditation Certification, and the second, in July 2019, 60 days after the assessment.

Before the data collection, the researcher participated in a nursing team meeting. She presented the objectives and purposes of the research and explained the collection procedure, inviting all nurses of the institution to participate. The researcher herself conducted the data collection. She remained at the institution in the periods previously agreed upon with the nursing manager, allowing the participation of professionals from the three shifts (morning, afternoon, and evening). Each professional participated during their work hours, and the institution's amphitheater was used as a collection site to provide more privacy for the participant.

The BSS<sup>(14)</sup> contemplates categorization data and 51 items that describe the nurse's daily activities, grouped into six domains: A - Relationship with other units and supervisors; B - Proper unit functioning; C - Personnel management; D - Nursing care provided to the patient; E - Coordination of activities; and F - Working conditions. The Scale analyzes the total stress score, the average score for each item (stressor), and each domain's score. The sum varies from 51 (when the nurse points out the activities as not very stressful) to 357 points (when very stressful)<sup>(15)</sup>. The stress level results from the 51 items' sum scored on a Likert scale from 1 to 7. The value 1 refers to a not very stressful activity, 4 as medium stressful, 7 as highly stressful, and 0 when the nurse does not perform the activity<sup>(16)</sup>.

In order to evaluate resilience, it was used the RE, developed based on the Resilience Scale, by Wagnild & Young, from 1993, translated and validated by Pesce et al.<sup>(16)</sup>. It verifies the individual's positive psychosocial adaptation when facing important life situations. It contemplates 25 items on a Likert scale: 1 (totally disagree); 2 (strongly disagree); 3 (slightly disagree); 4 (neither agree nor disagree); 5 (slightly agree); 6 (strongly agree); and 7 (totally agree). The sum of each item ranges from 25 points for low resilience to 175 points for high resilience<sup>(16)</sup>. They are classified as: low resilience, score lower than 121; medium resilience, score from 121 to 146; high resilience, score above 147. RE comprises three factors: Factor I - 14 items referring to action resolutions and values (described in items 2, 6, 8, 10, 12, 14, 16, 18, 19, 21, 23, 24 e 25); Factor II - 6 items characterized by independence and determination (described in items 5, 7, 9, 11, 13, and 22); Factor III - 5 items characterized by self-confidence and ability to adapt to situations (described in items 3, 4, 15, 17, and 20).

### Analysis of results and statistics

The results are presented in tables and descriptive measures. Wilcoxon's T-tests were also used to associate the score of the domains

of the Bianchi Stress Scale before and after Accreditation. Spearman's correlation coefficient was used to measure the correlation between the scores of the Bianchi Stress Scale and the Resilience Scale. It was considered a *p* value less than 0.05 significant. It was used Statistical Package for Social Science (SPSS), version 17.0.

## RESULTS

Fifty-three nurses (88% of the population) participated in the study. About the characterization of the participants, most (75.5%) are female, aged 40 years or less, with a partner and children. The highest percentage (52.8%) works in the daytime, morning, and afternoon, followed by a mixed period (26.4%) and evening (20.8%). More than half (54.7%) work 36 hours a week, followed by those who work more than 36 hours a week, representing 39.6%. It was observed that 60% of the nurses assume the function of supervisor, and the others, coordination, and assistance. The time they have worked in the institution varies from 1 year and five months to 34 years and six months, and the time they have worked in the same unit was from 8 months to 20 years. When asked if they had another job, most (67.9%) answered no, and almost half of them (47.2%) work in open units, followed by closed ones (35.8%). As for training, 81.1% are specialists.

Table 1 describes the participants' stress levels, according to BSS domains, before and after the assessment for maintenance of Accreditation. As for the items that make up Domain A, most nurses had low levels of stress: 75.5% before the assessment and 69.8% after the assessment. However, there was a 3.8% increase in the average stress levels in this same domain, and 1.9% presented high-stress levels after the evaluation. The same variation occurred in Domain B.

Regarding the "activities related to personnel administration" (Domain C), described in Table 1, the highest percentage was of workers in medium stress level before the evaluation, followed by low and high. That was the BSS domain in which more nurses were at a high-stress level. After the evaluation, the percentage of workers in high-stress level and low level increased, while the percentage of medium level decreased.

Before the visit, the items integrating Domain E were identified with a medium stress level by most nurses (73.6%). After the visit, that domain presented an average stress level of 71.7%. Such results were similar to those of Domains C and E.

Table 2 presents results of descriptive statistics on stress scores reported by nurses. In Domain A, the Wilcoxon's t-test, with the scores before and after the evaluation, showed a statistically significant relation ( $p < 0.05$ ), evidencing that the mean scores differed from each other.

In Table 2, the mean BSS scores for Domains C and E varied similarly before and after the assessment, with higher levels of stress. In the other domains, the opposite occurred: the mean stress scores were higher after the assessment.

Results of Spearman's correlation coefficient between BSS domains and participants' resilience before and after the assessment are described in Table 3 and denote correlation in each BSS domain at the two moments of assessment. There was no correlation between resilience and the value of stress scores in each BSS domain. It is observed that not all participants who have high resilience are those who are at low levels of stress.

Table 4 shows the nurses' stress levels according to the BSS domains. In relation to Domain A, nurses who were in a low level of stress before the assessment, the highest percentages refer to those who had medium and high resilience, respectively. In the second evaluation, there was a reduction in the percentage of nurses with an average level of resilience with high level of stress and medium resilience.

Table 4 shows that Domain E demonstrated the highest percentage of medium resilience and was followed by high before the assessment; however, after the assessment, there was an increase in the percentage of nurses with high and low resilience and, consequently, a reduction of those with medium resilience. In the two moments evaluated, nurses who presented medium and high-stress levels also showed medium and high resilience, respectively.

**Table 1** – Stress level according to the domains of the Bianchi Stress Scale in nurses before and after the assessment for Accreditation

Bianchi Stress Scale Domains	Period of collection	Level of stress		
		Low n (%)	Medium n (%)	High n (%)
A – Relationship with other units and supervisors	BA	40 (75.5)	13 (24.5)	-
	AA	37 (69.8)	15 (28.3)	1 (1.9)
B – Activities related to the proper functioning of the unit	BA	34 (64.2)	18 (34.0)	1 (1.9)
	AA	28 (52.8)	23 (43.4)	2 (3.8)
C – Activities related to personnel administration	BA	15 (28.3)	34 (64.2)	4 (7.5)
	AA	18 (34.0)	29 (54.7)	6 (11.3)
D – Nursing care provided to the patient	BA	21 (39.6)	32 (60.4)	-
	AA*	22 (41.5)	26 (49.1)	3 (5.7)
E – Coordination of the unit's activities	BA	12 (22.6)	39 (73.6)	2 (3.8)
	AA	12 (22.6)	38 (71.7)	3 (5.7)
F – Working conditions for the performance of nurses' activities	BA	22 (41.5)	31 (58.5)	-
	AA	25 (47.2)	25 (47.2)	3 (5.7)

\*For two (3.8%) nurses, all domain scores were 0 (not applicable); BA – before assessment for Accreditation; AA – after Accreditation assessment. Domain scores: value 1 when you find the activity "not very stressful"; 4 for "medium"; 7 for "very stressful"; and 0 when you "don't do the activity".

**Table 2** – Descriptive statistics of the stress scores according to the domains of the Bianchi Stress Scale in nurses before and after the assessment for Accreditation

Bianchi Stress Scale Domains		Descriptive Statistics							Wilcoxon's t-test p value
		LL	UL	Medium	SD	Q1 (25%)	Md (50%)	Q3 (75%)	
A	AA	1.00	5.22	2.32	1.05	1.50	2.13	3.06	0.021
	DA	1.00	6.33	2.62	1.17	1.88	2.33	3.28	
B	AA	1.00	6.00	2.90	1.34	1.75	2.67	4.00	0.152
	DA	1.00	6.33	3.13	1.47	1.83	3.00	4.08	
C	AA	1.40	7.00	3.92	1.35	2.82	4.00	4.82	0.591
	DA	1.00	6.50	3.81	1.39	2.73	3.60	5.00	
D	AA	1.14	5.67	3.30	1.28	2.13	3.47	4.33	0.853
	DA	1.20	6.20	3.37	1.22	2.53	3.33	4.07	
E	AA	1.43	6.75	3.82	1.12	3.25	3.88	4.46	0.806
	DA	1.14	7.00	3.75	1.17	3.13	3.88	4.38	
F	AA	1.14	5.75	3.31	1.08	2.69	3.17	4.07	0.862
	DA	1.50	6.14	3.37	1.27	2.23	3.14	4.15	

BA – before assessment for Accreditation; AA – after Accreditation assessment; A – relationship with other units and supervisors; B – activities related to the operation of the unit; C – activities related to personnel administration; D – nursing care provided to the patient; E – coordination of the unit's activities; F – working conditions for the performance of nurses' activities; LL – lower limit; UL – upper limit; SD – standard deviation; Q1 – quartile 1; Md – median; Q3 – quartile 3. Domain scores: value 1 when activity is "not very stressful"; 4 for "medium"; 7 for "very stressful"; and 0 when "don't do the activity".

**Table 3** – Spearman correlation coefficient between the domains of the Bianchi Stress Scale and resilience in nurses before and after the assessment for Accreditation

Bianchi Stress Scale Domains	BSS Domains BA with AA domains		Resiliency BA with BSS BA		Resilience AA with BSS BA	
	R	p	R	p	R	p
A – Relationship with other units and supervisors	0.564	0.000*	-0.052	0.712	-0.096	0.494
B – Activities related to the adequate functioning of the unit	0.656	0.000*	0.031	0.824	0.037	0.791
C – Activities related to personnel administration	0.584	0.000*	0.144	0.303	-0.011	0.935
D – Nursing care provided to the patient	0.616	0.000*	-0.035	0.804	-0.072	0.613
E – Coordination of the unit's activities	0.414	0.002*	-0.037	0.791	-0.147	0.294
F – Working conditions for the performance of nurses' activities	0.479	0.000*	-0.144	0.304	-0.263	0.057

\*Correlation significant for  $p < 0.01$ ; BA – before assessment for Accreditation; AA – after Accreditation assessment; BSS – Bianchi Stress Scale.

**Table 4** – Stress level according to the domains of the Bianchi Stress Scale and resilience in nurses before and after the assessment for Accreditation

Bianchi Stress Scale Domains	Period of collection		Resilience		
			Low n (%)	Medium n (%)	High n (%)
A – Relationship with other units and supervisors	BA	Low	6 (11.2)	23 (43.4)	11 (20.8)
		Medium	2 (3.8)	8 (15.1)	3 (5.7)
		High	-	-	-
	AA	Low	7 (13.2)	18 (34.0)	12 (22.6)
		Medium	3 (5.7)	5 (9.4)	7 (13.2)
		High	-	1 (1.9)	-
B – Activities related to the adequate functioning of the unit	BA	Low	5 (9.4)	20 (37.7)	9 (17.0)
		Medium	3 (5.7)	10 (18.9)	5 (9.4)
		High	-	1 (1.9)	-
	AA	Low	5 (9.4)	11 (20.8)	12 (22.6)
		Medium	5 (9.4)	11 (20.8)	7 (13.2)
		High	-	2 (3.8)	-
C – Activities related to personnel administration	BA	Low	4 (7.5)	8 (15.1)	3 (5.7)
		Medium	4 (7.5)	20 (37.7)	10 (18.9)
		High	-	3 (5.7)	1 (1.9)
	AA	Low	5 (9.4)	4 (7.5)	9 (17.0)
		Medium	4 (7.5)	17 (32.1)	8 (15.1)
		High	1 (1.9)	3 (5.7)	2 (3.8)
D – Nursing care provided to the patient	BA	Low	5 (9.4)	9 (17.0)	7 (13.2)
		Medium	3 (5.7)	22 (41.5)	7 (13.2)
		High	-	-	-
	AA	Low	3 (5.9)	9 (17.6)	10 (19.6)
		Medium	7 (13.7)	12 (23.5)	7 (13.7)
		High	-	2 (3.9)	1 (2.0)
E – Coordination of the unit's activities	BA	Low	4 (7.5)	4 (7.5)	4 (7.5)
		Medium	4 (7.5)	25 (47.2)	10 (18.9)
		High	-	2 (3.8)	-
	AA	Low	3 (5.7)	5 (9.4)	4 (7.5)
		Medium	6 (11.3)	17 (32.1)	15 (28.3)
		High	1 (1.9)	2 (3.8)	-
F – Working conditions for the performance of nurses' activities	BA	Low	5 (9.4)	11 (20.8)	6 (11.3)
		Medium	3 (5.7)	20 (37.7)	8 (15.1)
		High	-	-	-
	AA	Low	4 (7.5)	10 (18.9)	11 (20.8)
		Medium	5 (9.4)	12 (22.6)	8 (15.1)
		High	1 (1.9)	2 (3.8)	-

\*For two nurses, all domain scores were 0 (not applicable); BA – before assessment for Accreditation; AA – after assessment for Accreditation.

## DISCUSSION

The participants' sociodemographic characteristics are similar to those of other studies, demonstrating the profile of this workforce<sup>(1,11)</sup>. The female gender predominated, and most participants lived with a partner and children. The result evidences the informal double workday, which includes household duties, present in the participants' daily lives, which probably contributes to trigger stress<sup>(17)</sup>. Even if the participants did not inform, when answering the questionnaire about another working relationship, it is understood that domestic activities are inherent to the individual's life and are added to professional activities, generating physical strain.

As for training, most of them are specialists, which shows the qualified insertion of women in the labor market and confirms a study with Chinese nurses<sup>(10)</sup>. In this study, the participants had high levels of stress associated with spending energy and extra time on specialization, updating, and conducting research, conditions that contribute to increased occupational stress<sup>(10)</sup>.

In terms of the BSS domains, nurses assessed the relationship with other units and their supervisors as not very stressful, which is a positive point and confers good relationships between colleagues

and supervisors. That may be associated with the authority gradient perceived by professionals, which refers to the psychological distance between worker and supervisor: when this gradient is low, representing good relationships, it positively impacts care and patient safety<sup>(1)</sup>.

The data demonstrate that the participants perceived administrative activities as highly stressful, corroborating data in the literature<sup>(15)</sup>. The nurse's leading role is to manage the 24 hours of assistance and care to patients. Linked to this task are personnel management, scheduling, conflict management, training, equipment estimate, and provision and the structure for assistance itself, distribution of tasks, in addition to more specific activities such as specific procedures and health education; and all these factors directly involve the quality of care and patient safety<sup>(18)</sup>. Intrinsic factors to the nurse's work as a team leader, such as optimizing the work, managing the team, preparing training sessions, and adequately conducting conflict resolution, contribute to the manifestation of stress and its effects<sup>(15)</sup>.

It is noteworthy that the connection of leadership with the team and the positive behavior of leaders improve the performance of the team and the institution<sup>(19)</sup>, and difficulties in relationships

among the team and in maintaining effective communication hinder the nurses' leadership pursuit<sup>(20)</sup>.

The search for positive results in an Accreditation process depends on everyone's effort; however, over the years, nurses have demonstrated improvement in their technical and practical capacities due to the search for quality care, raising the nursing care standards, especially in the Hospital Accreditation process<sup>(21)</sup>. A study performed in the Southern Region of the country concluded that 75.7% of the interviewees considered that the nursing team is overloaded during the Hospital Accreditation process in relation to other healthcare professionals. In the same study, the authors show that nurses' stress and work overload result from the demands in the search for and maintenance of the Hospital Accreditation certification. They state that the work overload results from the need to pay attention to bureaucracy, besides the practices inherent to care while keeping track, and stress occur due to the need for quality and perfection<sup>(22)</sup>.

As for the nurses' levels of stress before and after the evaluation, referring to the activities of Domains C and E, some issues emerge that involve interpersonal relationships and work organization. In this sense, the nurse is a reference as the team coordinator; therefore, one of their objectives must be to promote a favorable environment for care, which is complex, because they need to organize the work as the leader of the nursing team and articulate with the other professionals that are part of the multidisciplinary team. Their focus remains on quality, the safety of care, and institutional objectives<sup>(23)</sup>, requiring nurses to improve interpersonal relationship skills<sup>(4)</sup>.

About the activities that integrate the BSS domain "nursing care provided to the patient," a study points out the nurse as someone indicated to manage issues of care improvement during the Accreditation process, due to the proximity to the patient and their leadership role amid the nursing team and facilitator among the members of the multidisciplinary team<sup>(4)</sup>. However, it is essential to highlight that the success of the institutions cannot depend only on nurses, but on the entire multi-professional team; the process before and after the Accreditation implies a continuous effort of culture change in which everyone's collaboration is necessary for the execution of the interrelation of work processes that will result in quality and safety to patients<sup>(4,12)</sup>. The necessary demands for the nurse to act as a leader in the Accreditation process are associated with care activities, which result in a physical and psychological overload of the respective professional - overload evidenced by high levels of stress, with physical and psychological manifestations<sup>(7)</sup>.

Results of this research, allied to the evidence in the literature, show that nurses, during the evaluation of maintenance of the Hospital Accreditation Certification, experienced stress in different ways, which may be related to the subjectivity present in issues involving stress and perception of the individual.

Suffering at the nurse's work is a widely debated topic and shows that occupational stress arises from organizational, care, and interpersonal relations factors, in addition to subjective and individual issues<sup>(9-10,17)</sup>, so that nurses use protective factors to better cope with these stressors<sup>(17)</sup>. As for maintenance of the Accreditation certification, which is the scenario of this study, the resilience capacity of the participants varied between high and medium at different times of assessment, which denotes professionals' ability to adapt to the stress involved in the auditing. When experiencing

suffering, the person builds unique defense mechanisms to reduce the negative impacts<sup>(17)</sup>. Resilience is a constant challenge experienced in nurses' daily lives, constituting a daily process of construction and deconstruction in the face of adversity<sup>(24)</sup>.

The data regarding the majority of participants have medium and high resilience because they have low and medium levels of stress, indicating that the more resilient the professional, the better they will face stressful situations of their daily routine. As evidence of this, we mention the study conducted with American nurses who are members of the American Association of Critical-Care Nurses, which concluded that nurses with high levels of resilience were less likely to have symptoms of stress, anxiety, depression, and *burnout* syndrome due to their work activities<sup>(25)</sup>. In this sense, resilience constitutes a defense mechanism marked by personal growth and the development of skills that nurses can use when facing stressful situations inherent to Hospital Accreditation<sup>(26)</sup>.

Research on worker resilience and health has shown that resilient individuals build defense mechanisms as protective factors to reduce adverse effects on their health<sup>(13)</sup>. Thus, resilience is related to the perception of risk and protective factors, allowing the professional to develop or improve responses to stressors<sup>(13)</sup>, being an important response mechanism to those present in daily life, making it possible to mitigate them and enhance protection<sup>(17)</sup>. On that subject, resilience is something built at each obstacle uniquely by each individual, which leads to overcoming adversity and sustaining a favorable position in the face of stress.

### Study limitations

Although the study is representative because it involved 88% of nurses from one institution, there may be variability in other hospital institutions considering the complexity of the service and the activities performed, which is considered a study limitation. Another limitation is that the survey was conducted only with nurses, which is why other studies are needed to encompass the perceptions of other professionals, such as nursing technicians and assistants, or even physicians, physical therapists, pharmacists, who are also involved in Hospital Accreditation processes. This way, by including other categories, it would be possible to have a complete view of the subject by identifying the perceptions of all these professionals regarding the issues of stress and resilience.

### Contributions to the field of Nursing

The data obtained in this study contributes with knowledge about issues that are still not much explored in the nursing field, such as the nurses' stress and resilience in the Accreditation process. The levels of stress and resilience observed bring subsidies for health actions to protect the health of nurses who go through the Accreditation process. Although this process aims to improve hospital service quality, the health of the nursing workers involved in the accreditation process must be considered.

### CONCLUSIONS

The results of the perception of the stress of nurses in the Accreditation process show that in the two moments evaluated,

before and after the evaluation, the stress levels remained average, specifically regarding people management, coordination, and nursing care. Managers can use these results to develop more appropriate strategies to reduce stress and thus keep these professionals healthy and more productive.

Another aspect that deserves attention is that most participants have a good relationship with other sectors and managers, a relevant fact that should be maintained. This result may be related to the medium and high resilience of the participants, which contributes to actions and reflections to qualify the work and health relationships further.

The construction of this research helps to reduce the knowledge gap about nurses' stress during assessments for Hospital Accreditation, aware that the results are instigating and do not exhaust the subject.

## SUPPLEMENTARY MATERIAL

Deise Juliana Rhoden. Musculoskeletal pain, stress and resilience in nurses before and after hospital accreditation certification maintenance assessment. Graduate Program in Atenção Integral à Saúde at UNIJUI. Link: [www.unijui.edu.br/ppgais](http://www.unijui.edu.br/ppgais) >> Theses and Dissertations >> 2019.

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