THE NURSING PRACTICE ENVIRONMENT IN A UNIVERSITY HOSPITAL DURING THE COVID-19 PANDEMIC

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ABSTRACT

Objective: to assess the environment of nursing professional practice during the COVID-19 pandemic.
Method: cross-sectional study addressing a sample comprising nursing workers from a university hospital. The Brazilian version of the Practice Environment Scale was used, with 24 items distributed into five subscales. The analyses were performed in Statistical Package for the Social Sciences, version 25; the statistical significance was set at 5% ($p \leq 0.05$), and the internal consistency was assessed with Cronbach's alpha.
Results: 243 workers participated in the study: 62.1% of nursing technicians and aides and 37.9% of nurses. The mean score on the Practice Environment Scale was 2.58 (standard deviation=0.69). Three of the five subscales were poorly assessed: "Nursing foundations for quality of care" (mean 2.58 and SD ± 0.73), "Nursing manager, ability, leadership, and support of nurses" (mean 2.74 and SD ± 0.82), and "Collegial nurse-physician relations" (mean 2.78 and SD ± 0.76). The perception of the professionals who received training to care for Covid-19 patients was more favorable than those who did not receive any training.
Conclusion: The nursing work environment during the pandemic was considered mixed; therefore, improvements are required to make nursing working conditions as adequate as possible.

DESCRIPTORS: Health facility environment. Workplace. Professional practice. Hospitals, university. Nursing. Coronavirus infections.

AMBIENTE DA PRÁTICA PROFISSIONAL DA ENFERMAGEM EM HOSPITAL UNIVERSITÁRIO FRENTE À COVID-19

RESUMO

Objetivo: avaliar o ambiente da prática profissional da enfermagem durante a pandemia da Covid-19.
Método: estudo transversal, conduzido em uma amostra constituída pela equipe de enfermagem que atuava em um hospital universitário. Utilizou-se a escala *Practice Environment Scale* (versão brasileira) com 24 itens distribuídos em cinco subescalas. As análises foram realizadas no *Statistical Package for the Social Sciences*, versão 25, e aplicou-se significância estatística de 5% (p≤0,05). A consistência interna do instrumento foi avaliada pelo alfa de Cronbach.
Resultados: participaram da pesquisa 243 profissionais, sendo 62,1% técnicos e auxiliares de enfermagem e 37,9% enfermeiros. A média do escore para a *Practice Environment Scale* foi de 2,58 (desvio-padrão = 0,69) e os participantes consideraram três das cinco subescalas favoráveis: "Fundamentos de enfermagem voltados para a qualidade do cuidado" (média 2,58 e dp ± 0,73); "Habilidade, liderança e suporte dos coordenadores/supervisores de enfermagem aos enfermeiros/equipe de enfermagem" (média 2,74 e dp ± 0,82) e "Relações colegiais entre enfermeiros e médicos" (média 2,78 e dp ± 0,76). Os profissionais capacitados para o cuidado dos pacientes com COVID-19 tiveram percepção mais favorável em relação àqueles que não o foram.
Conclusão: o ambiente de trabalho da enfermagem foi considerado misto, na pandemia, portanto, necessita de melhorias para que as condições de trabalho da enfermagem sejam as mais adequadas possíveis.

DESCRITORES: Ambiente de instituições de saúde. Local de trabalho. Prática profissional. Hospitais Universitários. Enfermagem. COVID-19.

AMBIENTE DE LA PRÁCTICA PROFESIONAL DE LA ENFERMERÍA EN UN HOSPITAL UNIVERSITARIO FRENTE AL COVID-19

RESUMEN

Objetivo: evaluar el ambiente de la práctica profesional de la enfermería durante la pandemia del COVID-19.
Método: estudio transversal, realizado en una muestra constituida por el equipo de enfermería que actuaba en un hospital universitario. Se utilizó la escala *Practice Environment Scale* (versión brasileña) con 24 ítems distribuidos en cinco subescalas. Los análisis fueron realizados en el *Statistical Package for the Social Sciences*, versión 25, y se aplicó una significancia estadística de 5% (p≤0,05). La consistencia interna del instrumento fue evaluada con el Alfa de Cronbach.
Resultados: participaron de la investigación 243 profesionales, siendo 62,1% técnicos y auxiliares de enfermería y 37,9% enfermeros. La media del puntaje para la *Practice Environment Scale* fue de 2,58 (Desviación Estándar = 0,69). Los participantes consideraron tres de las cinco subescalas favorables: "Fundamentos de enfermería orientados para la calidad del cuidado" (media 2,58 e DE ± 0,73); "Habilidad, liderazgo y soporte de los coordinadores/supervisores de enfermería a los enfermeros/equipo de enfermería" (media 2,74 y DE ± 0,82) y "Relaciones de compañerismo entre enfermeros y médicos" (media 2,78 y DE ± 0,76). Los profesionales capacitados para el cuidado de los pacientes con Covid-19 tuvieron una percepción más favorable en relación a aquellos que no lo fueron.
Conclusión: el ambiente de trabajo de la enfermería fue considerado mixto, en la pandemia, por tanto, necesita de mejorías para que las condiciones de trabajo de la enfermería sean las más adecuadas posibles.

DESCRIPTORES: Ambiente de instituciones de salud. Lugar de trabajo. Práctica profesional. Hospitales Universitarios. Enfermería. Infecciones por Coronavirus.

INTRODUCTION

The World Health Organization (WHO) announced the outbreak of the new coronavirus, the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), which causes Covid-19, and declared a global pandemic on February March 11th, 2020[1]. The first case in Brazil and Latin America was confirmed on February 26th, 2020; hence, the leaders of Brazilian states and the Ministry of Health sought strategies to mitigate the number of victims and provide adequate assistance to the population affected[2].

Frontline health professionals fighting Covid-19, especially those from the nursing, physical therapy, and medical teams, experienced working conditions different from those usually faced during ordinary times. Due to the rapid spread of the virus, healthcare facilities endured adverse impacts due to a lack of personal protective equipment (PPE), materials, and equipment, and an increased workload that led professionals to experience physical and mental illnesses[3].

Health facilities had to become better structured to care for suspected and confirmed cases during the pandemic, imposing necessary changes and demanding new and different patient care strategies, especially from nursing workers[4–5]. Such changes included the implementation of new patient flow in emergency units, changes in elective surgery appointments, hiring professionals, and developing admission training strategies, among others[5]. Changing a facility's organizational structure may affect the work capacity of (and among) health professionals and, consequently, the practice and the quality of care provided to patients[6].

Therefore, a practice environment is seen as a set of organizational attributes that either facilitate or hinder work practice. A favorable environment promotes greater job satisfaction and engagement, a lower incidence of burnout, and improved patient safety. From an institutional perspective, there are lower turnover rates and a positive impact on absenteeism and presenteeism rates[7].

There are several instruments to assess the nursing practice environment, and the Practice Environment Scale (PES) is one of them. It has been validated for the Brazilian context and can be applied to nursing professionals, nurses, nursing aides (NA), and nursing technicians (NT)[7–8].

One study adopted PES to assess the nursing practice environment in a private and accredited hospital, comparing the period before and six months after the pandemic. The scale proved easy to apply, and its reliability was confirmed through internal consistency[9]. The managers of health services need to learn about the working conditions nursing professionals experienced during the Covid-19 pandemic and their perceptions regarding the environment's characteristics during that time because these aspects remain unknown and constitute a knowledge gap.

For this reason, this study aimed to answer the question: How do nursing professionals working in a university hospital assess the nursing practice environment during the pandemic? The objective was to assess the nursing practice environment during the Covid-19 pandemic.

METHOD

This cross-sectional and descriptive study adopted a quantitative approach. It was performed in a university hospital in the city of São Paulo, SP, Brazil, i.e., a large-sized tertiary care hospital with various specialties and mainly providing care under the Unified Health System.

The number of nursing professionals in March 2021 was 2,011:1,461 mid-level professionals (NA/NT) and 550 nurses. The sample size calculated for this study was 205 nursing professionals, with at least 82 nurses and 123 NA/NT; a ratio of 1:1.5 was used. This calculation enabled detecting a significant difference of 0.4 standard deviations unit between the mean. Additionally, a power of 80%

and a significance level of 5% were considered. The sample size was calculated using the Winpepi® program, version 11.65.

The inclusion criteria were: being over 18; fluent in Brazilian Portuguese; a member of the nursing team; having a formal job contract (public employee, CLT, or temporary) for at least three months; and having provided (direct or indirect) care to patients with COVID-19 in the facility under study. The exclusion criteria were being on leave during the data collection and not providing (direct or indirect) care to patients with Covid-19.

Data were collected from March to December 2021, and two instruments were applied; the first collected personal and working conditions information, and the second was the PES[7–8]. A total of 243 nursing professionals participated in the study; 151 were NA/NT, and 92 (37.9%) were nurses.

The Brazilian version of the PES has 24 items distributed into five subscales: 1. "Nurse participation in hospital affairs"; 2. "Nursing foundations for quality of care"; 3. "Nurse manager, ability, leadership and support of nurses"; 4. "Staffing and resource adequacy"; and 5. "Collegial nurse-physician relations"[7–8].

The total score is the average of the scores obtained in the subscales, ranging from one to four points. Scores below 2.5 indicate that the respondents do not believe the items in the subscale are present in the current practice environment. A score of 2.5 is neutral, and above 2.5 indicates that the environment is favorable to professional practice, i.e., the respondent agrees that the subscale items are present in the current practice environment[7–8].

Facilities with no scores above 2.5 or with only one subscale scored higher than 2.5 are considered unfavorable environments for nursing practice. Those with scores above 2.5 in two or three subscales are considered to have mixed environments, while those with scores above 2.5 in four or five subscales are considered favorable to nursing practice environments[7–8].

Data were tabulated in spreadsheets and analyzed using SPSS® software, version 25. Descriptive statistics were performed using central tendency measures, such as the arithmetic mean, dispersion, such as standard deviation (SD), and relative and absolute frequencies. The results are presented in tables. Shapiro-Wilks test was used to test the normality of the variables. Parametric and non-parametric tests were applied to verify the relationships between the variables: Student's t-test, analysis of variance (ANOVA), Mann-Whitney test (for data with the normal distribution of two groups), and Kruskal-Wallis test (for data with the normal distribution of more than two groups). The significance level was set at 0.05[10].

Cronbach's alpha, ranging from zero to one, was calculated to check for the internal consistency of the instrument and its domains; an alpha above 0.9 indicates very good consistency; between 0.8 and 0.9 indicates good consistency; between 0.7 and 0.8 reasonable consistency; between 0.6 and 0.7, weak; and below 0.6, indicate insufficient consistency[10].

This study was submitted to and approved by the Research Ethics Committee through *Plataforma Brasil*, according to the recommendations of Resolution 466 from December 12th, 2012, National Health Council (CNS). According to CNS Resolution 510/2016, the participants had to provide their consent via an electronic free and informed consent form by checking the alternative "I accept to participate in this study." The questionnaire was available through the Google tool Forms.

RESULTS

A total of 243 nursing professionals participated in this study: 151 (62.1%) NA/NT and 92 (37.9%) nurses.

The sample was characterized by 201 (82.7%) female workers; 119 (48.9%) were Caucasian; 93 (38.3%) worked in the Intensive Care Unit (ICU); and 161 (66.3%) had more than a year of experience in directly providing care to patients with a suspected or confirmed diagnosis of COVID-19 (p=0.548). Regarding their employment contract, 138 (56.8%) were public servants. Sixty-two (41%) mid-level professionals (NA/NT) reported having higher education or graduate/ specialization studies. On average, the participants were 40 (SD=9.2), with an experience of 13.3 years (SD=8.4); had worked for 9.3 years (SD=7.7) at the facility; and a weekly workload of 33.3 hours (SD=8.5).

The participants were also asked: 1. If the facility had provided COVID-19-related training: 163 (67.1%) answered yes; 2. Whether they felt protected against COVID-19 in the workplace: 139 (57.2%) answered yes; 3. Whether the number of nursing professionals was adequate for the care provided: 139 (57.2%) answered no; 4. Whether material and technological resources were quantitatively and qualitatively adequate: 175 (72%) answered no; 5. How they felt about their current job: 163 (67.1%) were satisfied; 6. If they had any intention of leaving their current job on a scale from zero to ten, 124 (51%) workers reported no intention of quitting, and 7. How would they rate, on a scale from zero to ten, the work environment in terms of patient safety? A mean score of 6.8 (SD=2.2) was obtained.

The reliability of the PES was assessed using the Cronbach's alpha test. The overall index was 0.954, which represents very good reliability. The index ranged from 0.841 to 0.876 among the subscales (from 0.809 to 0.870 among NA/NT and from 0.855 to 0.889 among nurses), showing good internal consistency.

Table 1 presents the results of the total PES and each subscale between NA/NT and nurses. Note that the total mean score was 2.58 (SD=0.69), and no significant differences were found between the professionals in any of the subscales. Hence, a mixed environment was identified, as three subscales obtained a mean score > 2.5.

Table 1 – Means obtained by NA/NT and Nurses in the PES*, São Paulo, SP, Brazil, 2022. (n=243).

Subscale PES	243 (100%)	151 (62.14%)	92 (37.86%)	P-value
Nurse participation in hospital affairs:				
mean (SD)‡	2.45 (0.80)	2.41 (0.80)	2.50 (0.81)	0.403
P50 [P25; P75]§	2 [2; 3]	2 [2; 3]	2 [2; 3]	
min-max‖	1 – 4	1 – 4	1 – 4	
Nursing foundations for quality of care:				
mean (SD)‡	2.58 (0.73)	2.58 (0.73)	2.57 (0.73)	0.881
P50 [P25; P75]§	3 [2; 3]	3 [2; 3]	2 [2; 3]	
min-max‖	1 – 4	1 – 4	1 – 4	
Nurse manager, ability, leadership, and support of nurses:				
mean (SD)‡	2.74 (0.82)	2.67 (0.84)	2.86 (0.78)	0.077
P50 [P25; P75]§	3 [2; 3]	3 [2; 3]	3 [2; 4]	
min-max‖	1 – 4	1 – 4	1 – 4	

Table 1 – Cont.

Subscale PES	243 (100%)	151 (62.14%)	92 (37.86%)	P-value
Staffing and resource adequacy:				
mean (SD)‡	2.39 (0.83)	2.40 (0.85)	2.38 (0.80)	0.823
P50 [P25; P75]§	2 [2; 3]	2 [2; 3]	2 [2; 3]	
min-max‖	1 – 4	1 – 4	1 – 4	
Collegial nurse-physician relations:				
mean (SD)‡	2.78 (0.76)	2.75 (0.73)	2.84 (0.80)	0.346
P50 [P25; P75]§	3 [2; 3]	3 [2; 3]	3 [2; 3]	
min-max‖	1 – 4	1 – 4	1 – 4	
PES* Total				
mean (SD)‡	2.58 (0.69)	2.56 (0.70)	2.62 (0.68)	0.498
P50 [P25; P75]§	3 [2; 3]	3 [2; 3]	3 [2; 3]	
min-max‖	1 – 4	1 – 4	1 – 4	

Nota: Independent samples t-test; *PES: Practice Environment Scale; †NA/NT: Nursing Aides/ Nursing Technicians; ‡SD: standard-deviation; §P: percentile; ‖minimum-maximum: minimum-maximum.

Table 2 shows the means obtained by NA/NT in the PES domains and the sociodemographic variables that showed significant differences, the "type of job contract" and whether "training on COVID-19 was provided", answered by the NA/NT.

Table 2 – Sociodemeographic variables of nursing aides and nursing technicians with significant differences in the PES* domains, São Paulo, SP, Brazil, 2022. (n=151).

NA/NT†	Scores ≤ 2.5	Scores > 2.5	P-value
	n(%)	n(%)	
1. Nurse participation in hospital affairs: Job contract in this UH‡			
Temporary (n=2)	0 (0)	2 (100)	<0.001
Employee (CLT§, public organization /foundation) (n=47)	15 (31.9)	32 (68.1)	
Public servant (RJU‖) (n=102)	69 (67.6)	33 (32.4)	
Have you received Covid-19-related training?			
No (n=56)	38 (67.9)	18 (32.1)	0.031
Yes (n=95)	46 (48.4)	49 (51.6)	
2. Nursing foundations for quality of care: Job contract in this UH‡			
Temporary job contract (n=2)	0 (0)	2 (100)	<0.001
Employee (CLT§, public organization/foundation) (n=47)	12 (25.5)	35 (74.5)	
Public servant (RJU‖) (n=102)	60 (58.8)	42 (41.2)	
Have you received Covid-19-related training?			
No (n=56)	37 (66.1)	19 (33.9)	0.031
Yes (n=95)	35 (36.8)	60 (63.2)	

Table 2 – Cont.

NA/NT[†]	Scores ≤ 2.5	Scores > 2.5	P-value
	n(%)	n(%)	
3. Nurse manager, ability, leadership, and support of nurses: Job contract in this UH[‡]			
Temporary job contract (n=2)	0 (0)	2 (100)	0.002
Employee (CLT[§]. Public organization/foundation) (n=47)	9 (19.1)	38 (80.9)	
Public servant (RJU[ǁ] (n=102)	47 (46.1)	55 (53.9)	
Have you received Covid-19-related training?			
No (n=56)	28 (50)	28 (50)	0.019
Yes (n=95)	28 (29.5)	67 (70.5)	
4. Staffing and resource adequacy: Have you received Covid-19-related training?			
Temporary job contract (n=2)	1 (50)	1 (50)	<0.001
Employee (CLT[§], public organization/foundation) (n=47)	15 (31.9)	32 (68.1)	
Public servant (RJU[ǁ]) (n=102)	79 (77.5)	23 (22.5)	

Note: Chi-square test; *PES: Practice Environment Scale; [†]NA/NT: Nursing Aides/Nursing Technicians: [‡]UH: University Hospital; [§]CLT in Portuguese: Consolidation of Labor Laws; [ǁ]RJU in Portuguese: Single Legal Scheme.

Table 3 shows the means obtained by the nurses in the PES domains and the variables with significant differences, including "unit/sector", "job contract," and "whether COVID-19-related training was provided".

Table 3 – Sociodemographic variables of the nurses presenting significant differences in the PES* domains, São Paulo, SP, Brazil, 2022. (n=92).

Nurses	Scores ≤ 2.5	Scores > 2.5	P
	n(%)	n(%)	
1. Nurse participation in hospital affairs: Have you received Covid-19-related training?			
No (n=24)	21 (87,5)	3 (12,5)	<0,001
Yes (n=68)	27 (39,7)	41 (60,3)	
2. Nursing foundations for quality of care: Have you received Covid-19-related training?			
No (n=24)	21 (87,5)	3 (12,5)	<0,001
Yes (n=68)	27 (39,7)	41 (60,3)	
3. Nurse manager, ability, leadership, and support of nurses: Ward/sector			
Others (n=25)	3 (12)	22 (88)	0,01
Nursing (n=31)	6 (19,4)	25 (80,6)	
ICU[†] (n=36)	16 (44,4)	20 (55,6)	
Have you received Covid-19-related training?			
No (n=24)	15 (62,5)	9 (37,5)	<0,001
Yes (n=68)	10 (14,7)	58 (85,3)	

<div align="center">**Table 3 –** Cont.</div>

Nurses	Scores ≤ 2.5	Scores > 2.5	P
	n(%)	n(%)	
4. Staffing and resource adequacy: Have you received Covid-19-related training?			
No (n=24)	21 (87,5)	3 (12,5)	0,002
Yes (n=68)	33 (48,5)	35 (51,5)	
5. Collegial nurse-physician relations: Type of job contract in this UH‡			
Temporary job contract (n=5)	2 (40)	3 (60)	0,001
Employee (CLT§, public organization/foundation) (n=51)	10 (19,6)	41 (80,4)	
Public servant (RJU‖) (n=36)	21 (58,3)	15 (41,7)	
Have you received Covid-19-related training?			
No (n=24)	16 (66,7)	8 (33,3)	<0,001
Yes (n=68)	17 (25)	51 (75)	

Note: Chi-square test;*PES: Practice Environment Scale; †ICU: Intensive Care Unit: ‡HU: University Hospital; §CLT in Portuguese: Consolidation of Labor Laws; ‖RJU in Portuguese: Single Legal Scheme.

DISCUSSION

The profile of this study's sample, which comprised nurses and NA/NT from a university hospital, is similar (profession, sex, race, and age) to that reported by a study addressing nursing workers allocated to municipal services fighting the Covid-19 pandemic in the South of Brazil[11].

Most of the participants worked in the ICU, precisely the ward occupied by patients diagnosed with Covid-19 who were in the most severe and complex conditions, requiring intensive therapeutic support and a trained team of professionals. A study reports that ICU critical patients with a confirmed diagnosis of Covid-19 require numerous interventions involving the use of advanced technologies, invasive equipment, such as mechanical ventilation, renal hemodiafiltration, and the administration of high-alert medications, among others, which demand nursing workers to have a high level of knowledge, attention, and specific skills[12].

Most participants had provided direct patient care for more than a year, an aspect that shows that the workers were adapted to changes implemented to the care of patients in terms of how the wards' physical spaces were used, care protocols, and the continuous use of PPE. Additionally, this adaptation makes us wonder about the professionals' ability to coexist, the need to overcome the fear of contamination, the instability and severity of patients, and the professionals becoming ill[9,12].

Although most workers were hired under a statutory relationship (public servants), many nurses were hired under the Consolidation of Labor Laws (CLT in Portuguese). These workers were hired on an emergency basis to provide care to patients and meet the needs imposed by the pandemic. Emergency hiring became common practice due to the need to face the new context; studies have shown a growth in the hiring of professionals under other job contracts such as temporary contracts, CLT, and self-employed professionals as the government did not promote many public competitions to hire new workers, considering that public servants who retired at the time were not replaced[5,13].

Many professionals worked as NAs/NTs despite having higher education training. A study addressing the profile of Brazilian nursing workers corroborates this information, reporting that 11.5%

of these professionals had a bachelor's degree[14]. This finding is possibly explained by the fact that most NAs/NTs were hired under the Single Legal Scheme, which makes it harder to change careers, especially among workers who have been in the position for the longest time.

Most participants reported that the institution provided training on Covid-19, which may have favored the workers feeling safe in the work environment, though a significant percentage (32.9%) of respondents reported no training. This study reveals that, at the beginning of the pandemic, everyone in health services faced challenging situations due to a lack of knowledge of the new disease and its therapeutic possibilities. Both practitioners and researchers sought information about the pathology and treatments, the prone positioning, donning and doffing of PPE, and decompression maneuvers to relieve stress, among countless other demands. Therefore, hospitals and services provided several online training courses to health professionals. Digital technologies were crucial for making these courses available when social distancing was extremely necessary[15].

The PES showed very good general and per subscale internal consistency. An overall reliability index of 0.92, very good internal consistency, was also found in a study conducted in São Paulo analyzing nursing practice environments[9].

The general assessment of the nursing professional practice environment was considered mixed, as three subscales obtained means >2.5. These findings differ from those reported by a study performed in a private and accredited hospital in the city of São Paulo, where a favorable practice environment was found in all subscales; a mean of 3.4 was obtained during the pandemic[9].

A nursing practice environment considered mixed is one that the nursing team perceives as positive but still requires improvements to promote a healthy environment for the nursing team, who, as a consequence, will provide safe and efficient patient care[16].

There is a lack of comparative studies addressing the context studied here, i.e., under the same structural conditions and level of resources. Hence, the PES elements and its indicators may challenge the managers of any facility and influence services to promote "the participation of nurses in hospital affairs," develop the "skills, leadership and support nurse managers" and monitor the "nursing foundations aimed at quality of care," as a reflection of the care model adopted and by appreciating nursing professionals[4].

Subscale 1, "Nurse participation in hospital affairs," obtained a poor score. Such findings differ from those in the literature, as studies have shown that, during the pandemic, nurses more actively participated in structuring services to provide care to patients with COVID-19, while numerous studies were performed. Nursing workers became more evident during the pandemic, showing their relevance not only in providing direct care to patients but also in occupying leadership positions. The active participation of nurses in institutions' affairs empowered these professionals[5,17–19].

Subscale 2, "Nursing foundations for quality of care," obtained a favorable score, corroborated by a study conducted in the interior of São Paulo, which addressed five public and private hospitals and found a mean of 2,7[17]. Nursing leaders must promote continuing education, supervise newly hired professionals, and continuously seek to improve the quality of care, dynamically and tirelessly identifying risk factors imposed on patients and professionals and promoting safer processes through analyzing specific indicators[19].

Subscale 3, "Nurse manager, ability, leadership, and support of nurses," was considered favorable. A Brazilian study found a mean of 3.4 for this subscale, considering it is a private and accredited hospital focused on leadership development[9]. Participative leadership within the frontline team ensures workers feel safer and free to discuss situations that can be improved, especially in times of uncertainty, such as a pandemic[18].

Subscale 4, "Staffing and resource adequacy," was poorly scored, with information similar to that found by a study performed in the interior of São Paulo, which reported a mean of 2.4. The lack of resources, such as PPE, medicines, and equipment to assist people during the pandemic, was widely publicized through social media, showing the fragility of the Brazilian health system[17,20–21]. Even though the Federal Nursing Council regulated personnel sizing during the pandemic, workers faced work overload, excessive working hours, and team undersizing; such was the extent and severity of the disease among those seeking the health system[13,22].

Subscale 5, "Collegial nurse-physician relations," was favorably assessed. Such a result is comparable to that reported by a study conducted in China, which addressed the changes in the nursing practice environment after Covid-19, with a mean of 3.44, i.e., there were very positive interprofessional relationships. It is known that adequate relations within the medical team, especially when a patient suffers clinical instability and worsening health condition, decreases stressful situations and enables safe care to be provided to patients[23].

The results of a study carried out with Chinese nurses are similar to those found here, as the best-scored subscales were also "Nursing foundations for quality of care,"; "Nurse manager, ability, leadership, and support of nurses," and "Collegial nurse-physician relations." Although the Chinese study found a favorable environment, the subscales "Nurse participation in the hospital affairs" and "Staffing and resource adequacy" remain challenging for managers[23].

The assessment of the relationship between the PES subscales and the answers provided by NA/NT regarding whether they had received training to provide care to patients with Covid-19, was unfavorable for subscales 1, "Nurse participation in hospital affairs" and 2, "Nursing foundations for quality of care." Furthermore, the same assessment conducted among the nurses indicated that subscale 4, "Staffing and resource adequacy," was also unfavorable, which, together with subscales 1 and 2, configure an unfavorable environment. These elements concerning care management require prepared leaders to support the implementation of standards based on the best practices, with adequate resources and training, encouraging the active participation of professionals in institutional affairs to promote a better prepared and integrated team to face adverse contexts[4,24].

This study identified how nursing professionals assessed the nursing practice environment of a university hospital during the pandemic and rejected the initial hypothesis, which assumed that participants would consider the environment to be mixed with favorable and unfavorable subscales.

The implications for care practice are that a mixed environment requires improved working conditions. Nonetheless, further research is needed on the nursing practice environment experienced during and after the pandemic. Additionally, addressing institutions that adopt other management models might expand managers' perspectives to promote conducive workplaces to meet the requirements of any situation, not only the most alarming. Favorable working conditions contribute to the workers' health, preventing occupational diseases and psychological illnesses. Furthermore, the direct involvement of managers with the care team promotes harmonious relationships between teams.

There are some limitations, such as the fact that the results cannot be generalized, as this study addressed a single facility. Additionally, data were collected during the pandemic at different points in time, implying potential biases in the team members' perception regarding institutional dynamics; finally, the PES analysis was based on the arithmetic mean of the subscale items, with a high standard deviation, indicating a heterogeneous sample. Thus, assessing the professional practice environment in the facility addressed here may vary depending on the professionals assessed.

CONCLUSION

The nursing practice environment during the pandemic was considered mixed, as two of the five subscales obtained unfavorable scores. Subscale 4, "Staffing and resource adequacy," presented the most unfavorable scores, while Subscale 5, "Collegial nurse-physician relations," obtained the highest score.

The results of this study suggest leaders must pay attention to the nursing team since there is a fine line between good and poor working conditions in a mixed work environment, a situation that became more apparent during the pandemic. Hence, there is a need to search for solutions to improve working conditions, staffing, and the availability of resources, allowing nursing workers to participate in hospital affairs and decision-making. The importance of training and preparing professionals to care for patients with Covid-19 is also highlighted.

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NOTES

APPROVAL OF ETHICS COMMITTEE IN RESEARCH

Approved by the Ethics Committee in Research of the Universidade Federal de Santa Catarina, parecer 4.347.463, CAAE: 38912820.3.1001.0121 e no Comitê de Ética em Pesquisa da Universidade Federal de São Paulo sob o parecer 4.381.848, CAAE 38912820.3.2003.5505.

CONFLICT OF INTEREST

There is no conflict of interest.

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