

Nurses' practice environment before and during the COVID-19 pandemic

Ambiente de prática dos enfermeiros antes e durante a pandemia de COVID-19

Ambiente de práctica de enfermeros antes y durante la pandemia de COVID-19

Camila Hidemi Danno¹  <https://orcid.org/0000-0002-9627-9629>Elena Bohomol¹  <https://orcid.org/0000-0002-7196-0266>Renata Cristina Gasparino²  <https://orcid.org/0000-0001-8729-4707>

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Corresponding author

Camila Hidemi Danno
E-mail: milahidemi@hotmail.com

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Alexandre Pазetto Balsanelli
(<https://orcid.org/0000-0003-3757-1061>)
Escola Paulista de Enfermagem, Universidade Federal de São Paulo, SP, Brazil

Abstract

Objective: To compare nurses' perception of the professional practice environment before and during the COVID-19 pandemic.

Methods: Descriptive, survey-type study conducted in an accredited hospital located in the city of São Paulo – SP. Nurses were invited to answer the Brazilian version of the Practice Environment Scale instrument in two moments: ten months before the pandemic (Group 1) and six months after the start of care for patients with COVID-19 (Group 2). A significance level of $p \leq 0.05$ was adopted and the Mann-Whitney non-parametric hypothesis test was used to compare two unpaired groups.

Results: Group 1 consisted of 55 nurses and Group 2 of 53. All subscales had means above 2.5, ranging from 2.8 to 3.3 in Group 1 and 3.0 to 3.4 in Group 2. The subscales Nurse manager ability, leadership and support to nurses; Staffing and resource adequacy; and Collegial nurse-physician relations were better evaluated in the pandemic period, with statistically significant differences ($p = 0.05$; 0.04 and 0.04, respectively).

Conclusion: Although nurse's professional practice environment was classified as favorable at both times, results were better during the pandemic.

Resumo

Objetivo: Comparar a percepção do ambiente de prática profissional dos enfermeiros antes e durante a pandemia da COVID-19.

Métodos: Estudo descritivo, tipo *survey* realizado em um hospital acreditado, situado no município de São Paulo – SP. Os enfermeiros foram convidados a responderem o instrumento *Practice Environment Scale* versão brasileira, em dois momentos: 10 meses antes da pandemia (Grupo 1) e seis meses após o início do atendimento de pacientes com a COVID-19 (Grupo 2). Foi adotado o nível de significância de $p \leq 0,05$ e empregado o teste de hipótese não-paramétrico *Mann-Whitney* para comparação entre dois grupos não pareados.

Resultados: O Grupo 1 foi composto por 55 enfermeiros e o Grupo 2 por 53. Todas as subescalas apresentaram médias superiores a 2,5, variando entre 2,8 a 3,3 no Grupo 1 e 3,0 a 3,4 no Grupo 2. As subescalas Habilidade, liderança e suporte dos coordenadores/ supervisores de enfermagem aos enfermeiros/equipe de enfermagem; Adequação da equipe e de recursos e Relações de trabalho positivas entre médicos e enfermeiros foram melhor avaliadas no período pandêmico, com diferenças estatisticamente significantes ($p = 0,05$; 0,04 e 0,04, respectivamente).

Conclusão: O ambiente de prática profissional do enfermeiro foi classificado como favorável nos dois momentos, mas apresentou melhores resultados durante a pandemia.

¹Escola Paulista de Enfermagem, Universidade Federal de São Paulo, São Paulo, SP, Brazil.

²Faculdade de Enfermagem, Universidade Estadual de Campinas, Campinas, SP, Brazil.

Conflicts of interest: none to declare.

Resumen

Objetivo: Comparar la percepción del ambiente de práctica profesional de los enfermeros antes y durante la pandemia de COVID-19.

Métodos: Estudio descriptivo, tipo *survey* realizado en un hospital acreditado, ubicado en el municipio de São Paulo, estado de São Paulo. Los enfermeros fueron invitados a responder el instrumento *Practice Environment Scale* versión brasileña, en dos momentos: 10 meses antes de la pandemia (Grupo 1) y seis meses después del inicio de la atención de pacientes con COVID-19 (Grupo 2). Se adoptó el nivel de significancia de $p \leq 0,05$ y se utilizó la prueba de hipótesis no paramétrica *Mann-Whitney* para comparación entre dos grupos no pareados.

Resultados: El Grupo 1 estuvo compuesto por 55 enfermeros y el Grupo 2 por 53. Todas las subescalas presentaron promedios superiores a 2,5, que variaron entre 2,8 y 3,3 en el Grupo 1, y entre 3,0 y 3,4 en el Grupo 2. Las subescalas Habilidad, liderazgo y apoyo de los coordinadores/supervisores de enfermería a los enfermeros/equipo de enfermería; Adaptación del equipo y de los recursos, y Relaciones laborales positivas entre médicos y enfermeros fueron mejor evaluadas en el período pandémico, con diferencias estadísticamente significantes ($p = 0,05$; 0,04 y 0,04, respectivamente).

Conclusión: El ambiente de práctica profesional de enfermeros fue clasificado como favorable en los dos momentos, pero presentó mejores resultados durante la pandemia.

Introduction

The professional nursing practice environment is defined by the presence of a set of organizational characteristics that facilitate or not the development of nursing practice.⁽¹⁾

Studies indicate that maintaining a favorable work environment provides better satisfaction, autonomy, professional growth, application of a safe practice, leadership performance and consequently, positively influences the quality of care provided.^(1,2)

Thus, the periodic evaluation of the professional practice environment is a tool that can bring subsidies to managers for implementation of strategies to improve the practice and quality of care in different settings.⁽³⁾ Several instruments can be used to perform this evaluation, and the Practice Environment Scale (PES)^(4,5) is currently the most used.

However, some situations can compromise and challenge the performance of health professionals, the quality of care, and affect the physical and organizational structure of institutions, such as the pandemic caused by the new coronavirus, decreed in March 2020.⁽⁶⁾ Faced with the global health crisis and the rapid spread of the virus, health sectors began restructuring and adaptation movements to serve the population. Given the high demand, there was a greater workload in health services, greater exposure of professionals to the risk of contamination and higher levels of physical and mental exhaustion, especially among the nursing staff.⁽⁷⁾

Considering the scarcity of studies evaluating the nursing practice setting during the pandemic and the dimension of impacts and changes that

occurred in the work environment of institutions, the present study was developed with the aim to compare nurses' practice environment before and during the COVID-19 pandemic.

Methods

This is a survey-type study, in which the characteristics, actions and opinions of a given group can be obtained through a cross-sectional, comparative and quantitative research instrument⁽⁸⁾.

It was held in a medium-sized hospital accredited by the National Accreditation Organization that serves the public of the National Health Service (Brazilian SUS) and supplementary health, located in the city of São Paulo – SP.

During the pandemic, the institution made structural and processual changes considering the wellbeing of employees and the quality of patient care. To this end, the following were structured: a crisis committee with members of the multidisciplinary team; the employee's health center; service flows; the symptom screening process for patients and staff; the centralization of hospitalizations for confirmed and suspected cases in closed sectors; the resizing of the team; and trainings of updating and qualification for professionals.

The general population consisted of 84 nurses in the first stage of the study (before the pandemic) and 98 in the second stage (during the pandemic). Inclusion criteria were nurses with more than three months in the institution. Exclusion criteria were nurses on vacation, various leaves and those in man-

agement positions. Since all nurses at the institution were invited to participate, this was a convenience sampling process.

The Brazilian version of the Practice Environment Scale (PES) was the instrument used. This scale is considered robust and capable of capturing information about the nursing professional practice environment. It was developed in 2002 from the Nursing Work Index, and adapted and validated for the Brazilian culture in 2015.⁽⁵⁾

It consists of 24 items divided into five subscales: 1. Nurse participation in hospital affairs, with five items; 2. Nursing foundations for quality of care, with seven items; 3. Nurse manager ability, leadership and support to nurses, with five items; 4. Staffing and resource adequacy, with four items; and 5. Collegial nurse-physician relations, with three items.⁽⁵⁾

A Likert-type scale is used to assess the items, with a score ranging from 1 to 4 points (strongly disagree = 1, disagree = 2, agree = 3 and strongly agree = 4). The average of scores is calculated for each subscale; the value of 2.5 is considered as a neutral point, and values above 2.5 in four or five subscales indicate a favorable environment.⁽⁵⁾

Data collection of the first stage took place in May 2019, in person, when the researcher visited the work units. Those who agreed to participate received the collection instrument and two copies of the Informed Consent form. This stage represented Group 1.

Given the pandemic scenario, the possibility of new data collection using the same protocol was considered and approved. Data collection was performed remotely in September 2020. The invitation was sent by e-mail containing a brief explanation of the proposal, as well as instructions of access to complete the instrument and the Informed Consent form via Google Forms® platform. This stage represented Group 2.

Data were analyzed using R studio® software version 1.2 5001 and the significance level adopted was $p \leq 0.05$. The non-parametric Mann-Whitney hypothesis test was used to compare two unpaired groups.

The internal consistency was calculated from Cronbach's Alpha for assessment of instrument reliability, with values from 0.70 onwards considered as reliable.⁽⁹⁾

The study was developed after approval by the Research Ethics Committee of the institution under CAAE n° 05820818.2.0000.5483 and opinion n° 4.451.212. The second stage was performed after evaluation of the Research Ethics Committee regarding the amendment for new data collection.

Results

Group 1 consisted of 55 professionals, representing 65.5% of the institution's nurses. Of these, 83.6% were female, 47.3% were aged between 30 and 39 years and 58.2% were married. Group 2 consisted of 53 professionals, representing 54.1% of the population, 83% were female, 50.9% were in the age group of 30-39 years and 54.7% were married.

The instrument showed acceptable reliability in both groups, with an overall index of 0.93 and 0.92 in Groups 1 and 2, respectively.

Regarding the mean PES score, both groups presented favorable environments, with mean values in the subscales between 2.8 and 3.3 and 3.0 to 3.4, respectively. Subscale 1 "Nurse participation in hospital affairs", subscale 4 "Staffing and resource adequacy" and subscale 5 "Collegial nurse-physician relations" showed statistically significant differences ($p=0.05$; 0.04 and 0.04) between participating groups (Table 1).

Because of organizational changes taking place at the institution, there was a change in the staff to hire people, either due to staff turnover or a higher number of positions. However, we identified information regarding 29 nurses who participated in the two collection moments, which are presented in table 2. The findings confirm the general data, corroborating the favorable environment at both moments (general average between 3.3 and 3, 4; $p = 0.06$). Subscale 4 "Staffing and resource adequacy" was better evaluated in the second moment ($p=0.01$).

Table 1. Comparison of the mean score of the Practice Environment Scale – Brazilian version between Group 1 and Group 2 by subscales and overall

Subscales	Group 1			Group 2			p-value
	AM [†]	SD [‡]	Median	AM [†]	SD [‡]	Median	
1. Nurse participation in hospital affairs	3.2	0.5	3.2	3.4	0.5	3.4	0.05 [§]
2. Nursing foundations for quality of care	3.3	0.4	3.3	3.4	0.4	3.4	0.27 [§]
3. Nurse manager ability, leadership and support of nurses	3.3	0.6	3.4	3.4	0.5	3.6	0.07 [§]
4. Staffing and resource adequacy	2.8	0.6	3	3.0	0.6	3	0.04 [§]
5. Collegial nurse-physician relations	3.1	0.5	3	3.3	0.4	3.3	0.04 [§]
Overall	3.1	0.4	3.3	3.3	0.4	3.3	0.04 [§]
Classification of the environment	Favorable			Favorable			

[†]AM – Arithmetic Mean; [‡]SD – Standard Deviation; [§]Mann Whitney

Table 2. Comparison of the mean score of the Practice Environment Scale - Brazilian version between the same people who participated in the two groups by subscales and overall

Subscales	Group 1			Group 2			p-value
	AM [†]	SD [‡]	Median	AM [†]	SD [‡]	Median	
1. Nurse participation in hospital affairs	3.2	0.5	3.3	3.3	0.4	3.4	0.09 [§]
2. Nursing foundations for quality of care	3.4	0.4	3.6	3.5	0.3	3.6	0.39 [§]
3. Nurse manager ability, leadership and support of nurses	3.4	0.5	3.6	3.4	0.5	3.4	0.28 [§]
4. Staffing and resource adequacy	2.9	0.6	3	3.1	0.6	3.2	0.01 [§]
5. Collegial nurse-physician relations	3.4	0.5	3.7	3.4	0.4	3.3	0.93 [§]
Overall	3.3	0.4	3.4	3.4	0.4	3.3	0.06 [§]
Classification of the environment	Favorable			Favorable			

[†]AM – Arithmetic Mean; [‡]SD – Standard Deviation; [§]Mann Whitney

Discussion

Nurse's professional practice environment was classified as favorable, which was close to the classification in a study in an accredited hospital in China, an overall mean of 2.99.⁽¹⁰⁾ Evidence on the Covid-19 pandemic context available in the literature is still scarce, and only one study conducted in the United States of America showed that unfavorable environments are related to high levels of decision fatigue.⁽¹¹⁾

The present study showed a statistically significant difference in subscale 1, "Nurse participation in hospital affairs", which represents the opportunity for nurses to participate in committees and decision-making bodies. It appears that both groups identify opportunities for professional development and improvement in the institution, unlike the finding of a national study conducted in five hospitals that showed unfavorable results.⁽⁴⁾

The results of this subscale indicate that nurses perceive the appreciation, even though the perception is better during the pandemic, a moment that requires more and more efforts from health institutions and professionals working on the front line.⁽¹²⁾

Paradoxically, the literature exposes the difficulties experienced by professionals when facing the new coronavirus, such as burnout, anxiety, changes in sleep patterns, physical and mental exhaustion, and skin injuries resulting from the use of protective equipment for long periods.⁽¹³⁾

Institutions have sought strategies to help health professionals to maintain an emotional balance that help them to better deal with the stress experienced. Actions aimed at encouraging professionals, joint leadership and sharing of successful experiences have shown positive results.⁽¹²⁾

There is a favorable perception regarding the development of the team and the presence of quality and continuing education programs, which is in line with findings in other national^(4,5) and international studies.⁽¹⁴⁾

During the pandemic, institutions have shown concern to keep professionals trained to care for patients affected by the virus and also for self-protection and spread control. The joint action of continuing education, the Hospital Infection Control Service and leaders became essential, ensuring that information was shared in a clear and concise manner to the care team.⁽¹⁵⁾

Statistical difference was also identified in subscale 4, “Staffing and resource adequacy”, which had the lowest mean between the two groups, although remaining favorable and better evaluated during the pandemic.

Maintaining the adequate number of nursing professionals favors the quality of care and reflects positively on care indicators and the patient’s experience.⁽¹⁶⁾ To this end, considering the current pandemic context, the Federal Nursing Council issued Normative Opinion No. 002/2020 /COFEN containing the minimum parameters for the work of professionals in COVID-19 care units.⁽¹⁷⁾

Team adequacy has been a challenge in the nursing work environment over time and exacerbated during the pandemic. In April 2020, the World Health Organization issued a report showing a deficit of approximately 18 million professionals.⁽¹⁸⁾

Regarding subscale 5, “Collegiate nurse-physician relations”, there was also a statistically significant difference. The perception was favorable for both groups, showing similarity with findings of an Australian study.⁽¹⁹⁾ There is a good relationship between the medical and nursing teams with mutual collaboration and teamwork.

It is known that the positive nurse-physician relationship enables better assertiveness in the therapeutic plan, improves patient safety and can also influence the satisfaction and dedication of professionals.⁽²⁰⁾

This aspect is extremely relevant in the care provided to patients with COVID-19. Studies reaffirm that the development of teamwork contributes to the communication and collaboration of professionals, promoting improved care and assertiveness of outcomes in patients with the virus.^(12,18)

The study allowed the evaluation of the environment of nurses’ professional practice but it has as limitations, such as the number of participants, especially in the second stage, perhaps, given the work overload resulting from the pandemic and the selection of the non-probabilistic type for convenience, facts that do not allow the generalization of findings with statistical precision. In addition, the fact of not including mid-level professionals, the majority category in patient care, which may be the subject of further studies.

Conclusion

Nurses’ practice environment was classified as favorable before and during the pandemic, although subscales “Nurse participation in hospital affairs”, “Staffing and resource adequacy” and “Collegial nurse-physician relations” were better evaluated during the pandemic. The importance of maintaining a proactive environment is highlighted, with attentive listening and adequate resources for the safe care of patients who may be unstable and with worsening of their clinical condition, in addition to looking at the safety of professionals.

Collaborations

Danno CH, Bohomol E and Gasparino RC contributed to the project design, analysis and interpretation of data, article writing, relevant critical review of the intellectual content and approval of the final version to be published.

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