Evaluation of the professional practice environment of nursing in health institutions

Avaliação do ambiente da prática profissional da enfermagem em instituições de saúde

Evaluación del ambiente de la práctica profesional de enfermería en instituciones de salud

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Abstract
Objective: To evaluate the hospital environment where nursing performs its practice comparing public and private hospitals and describing the characteristics that received unfavorable evaluation (≤ 2.5 points) in the professionals' perception.
Methods: A comparative and cross-sectional study was conducted in five hospitals (two public hospitals - A and B; and three private ones - C, D and E) from a city in the countryside of the state of São Paulo, with a total of 1773 nursing professionals. The instruments used were: data sheet for characterization of the sample and the Brazilian version of the Practice Environment Scale. In the data analysis, we used descriptive and inferential statistics. To compare the hospitals, we used the Kruskall Wallis test, followed by the Dunn post-test and the multinomial regression.
Results: In the comparison of hospitals, D and E hospitals reached mean above the others and significant differences ($p<0.0001$) were obtained in relation to the five subscales of the instrument used. In the multinomial regression, hospital D obtained 5.8; hospital E 5.2; hospital C 3.0 and hospital A 2.7 chances of having a more favorable environment when compared to hospital B. Items with a score lower than 2.5 were associated, especially, lack of opportunity for development, recognition, participatory management and proper sizing.
Conclusion: Private hospitals showed better performance when compared to the public ones, and the characteristics that received the worst evaluation were related to the participation of nurses in hospital affairs based on quality, support of the managers to the team and adequacy of resources.

Resumo
Objetivo: Avaliar o ambiente hospitalar onde a enfermagem exerce sua prática comparando hospitais públicos e privados e descrever as características que receberam avaliação desfavorável (≤ 2,5 pontos) na percepção dos profissionais.
Métodos: Estudo comparativo e transversal realizado em cinco hospitais (dois públicos - A e B e três privados - C, D e E) de um município do interior do estado de São Paulo, com 1773 profissionais de enfermagem. Os instrumentos utilizados foram: ficha para caracterização da amostra e a versão brasileira da *Practice Environment Scale*. Na análise dos dados, foram utilizadas estatísticas descritivas e inferenciais. Para comparar os hospitais foi utilizado o teste Kruskall Wallis, seguido pelo pós-teste de Dunn e a regressão multinomial.
Resultados: Na comparação dos hospitais, os hospitais D e E alcançaram médias superiores aos demais e diferenças significantes ($p<0,0001$) foram obtidas com relação às cinco subescalas do instrumento utilizado. Na regressão multinomial, o hospital D obteve 5,8; o E 5,2; o C 3,0 e o A 2,7 chances de possuir um ambiente mais favorável, quando comparados ao hospital B. Os itens com nota inferior a 2,5 foram associados, especialmente, a falta de oportunidade de desenvolvimento, reconhecimento, gestão participativa e dimensionamento adequado.
Conclusão: Os hospitais privados apresentaram melhor desempenho quando comparados aos públicos e as características que receberam pior avaliação estavam relacionadas à participação dos enfermeiros nos assuntos hospitalares, fundamentos voltados para a qualidade, suporte dos gestores à equipe e adequação de recursos.

Resumen
Objetivo: evaluar el ambiente hospitalario donde la enfermería ejerce su práctica comparando hospitales públicos y privados y describir las características que recibieron evaluación desfavorable (≤ 2,5 puntos) según la percepción de los profesionales.
Métodos: estudio comparativo y transversal realizado en cinco hospitales (dos públicos: A y B; tres privados: C, D y E) de un municipio del interior del estado de São Paulo, con 1.773 profesionales de enfermería. Los instrumentos utilizados fueron: ficha para caracterización de la muestra y la versión brasileña de la *Practice Environment Scale*. En el análisis de los datos, se utilizaron estadísticas descriptivas e inferenciales. Para comparar los hospitales, se utilizó la prueba Kruskall Wallis, seguida de la prueba posterior de Dunn y la regresión multinomial.
Resultados: en la comparación de los hospitales, los hospitales D y E alcanzaron promedios superiores a los demás y se obtuvieron diferencias significativas ($p<0,0001$) con relación a las cinco subescalas del instrumento utilizado. En la regresión multinomial, el hospital D obtuvo 5,8; el E 5,2; el C 3,0 y el A 2,7 chances de poseer un ambiente más favorable, al compararlos con el hospital B. Los ítems con nota inferior a 2,5 fueron asociados, especialmente, a la falta de oportunidad de crecimiento, reconocimiento, gestión participativa y dimensionamiento adecuado.
Conclusión: los hospitales privados presentaron mejor desempeño al compararlos con los públicos y las características que recibieron peor evaluación estaban relacionadas con la participación de los enfermeros en los asuntos hospitalarios, fundamentos orientados a la calidad, apoyo de los gestores al equipo y adecuación de recursos.

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Introduction

In the 1980s, in the United States of America, there was a great concern with the lack of nursing professionals in health institutions, evidenced by the presence of almost 100,000 open positions and more than 80% of hospitals with inadequate sizing, due to the inability of the institutions to attract and retain qualified professionals.[1]

Considering that the nursing team is fundamental for the care of patients, since they are responsible for 95% of the assistance patients receive during their hospital stay, the American Academy of Nursing began, in 1981, a task force to analyze the characteristics that facilitated the development of nursing practices.[2]

Researches began in hospitals that were recognized by the ability to attract and retain nursing professionals and offer a qualified care and identified attributes related to three categories: 1) management with a participatory management model, qualified leadership, decentralized structure, team participation in commissions and benefit policies; 2) professional practice focused on quality and 3) professional development through training and career plan. Among the hospitals evaluated, 41 were selected and received the designation of Magnetic Hospital (MH), due to their capacity to attract and retain nursing professionals.[2]

In the 1990s, the American Nurses Credentialing Center (ANCC) developed a voluntary recognition program for formal accreditation of the MHs, and since then, researches have been conducted with the intention of developing and improving instruments to evaluate the presence of characteristics that favor professional practice of nursing, as well as to evaluate the relationship between these characteristics and the results with patients, professionals and institutions.[3-8]

According to the International Council of Nurses, it is critically important to recognize the determinant factors for favorable environments, because they contribute for the promotion of an excellence care, maximizing the health and well-being of the professionals and improving the results for patients and organizational performance.[9]

Based on this assumption, among the tools developed for this purpose, the Practice Environment Scale (PES) stands out because, besides having satisfactory measurement properties,[10] this scale allows the classification of the environments in the institutions as miscellaneous, favorable and unfavorable[11] and therefore, can be used to compare scenarios, predict results and guide the evaluation of interventions.[12]

Considering that the PES has recently been validated for Brazilian culture[13], and therefore, there are still few national studies available using this instrument and the necessity to know and compare the institutions' environment so that strategies can be implemented in the pursuit of improved results, the following questions guided this research: are there differences between the characteristics of the environment of public and private hospitals? Which characteristics are considered more unfavorable concerning the professionals' perception?

Thus, this study aimed to evaluate the hospital environment in which nursing staff perform their practice comparing public and private hospitals and describing the characteristics that received an unfavorable evaluation (≤ 2.5 points) in the professionals' perception.

Methods

This is a comparative and cross-sectional study carried out in a city in the countryside of the state of São Paulo. All hospitals in the city with more than 100 hospital beds were invited to participate and among the ten eligible institutions, only five of them accepted to participate in the research. A and B hospitals are public ones and cover 100% of the patients from the Unified Health System - *Sistema Único de Saúde* (SUS). C and D hospitals also cover patients from SUS, private and from supplementary health sectors and have accreditation level two by the National Accreditation Organization (NAO) and the E hospital attend private patients and from supplementary health and it has ONA level three certification.

The sample was composed by the nurses' availability and acceptance, technicians and nursing assistants in participating in the research. All nursing professionals who met the following inclusion crite-

ria were invited: belong to the nursing staff, provide direct care to the patient and have been an employee in the unit for at least three months, were invited to participate in the research.

Those who agreed received the following instruments: a personal and professional characterization card of the sample and the Brazilian version of the PES [13] that aims to evaluate the professional nursing practice environment through 24 items distributed in five subscales.[10,13]

The Nurses' participation in the discussion of hospital subjects subscale (five items) demonstrates the nurse's role and value in the broad hospital context; ability, leadership and support of coordinators/nursing supervisors to nurses/nursing team (five items) focuses on the nursing manager's role in the institution, encompassing key competencies that a professional in this position needs to develop.[10,13]

Nursing fundamentals subscale (seven items), focused on the quality of care, emphasizes a philosophy of nursing focused on high quality standards of care; Staff and resource adequacy (four items) , describes the necessity of a staff and adequate resource support to provide a quality care; and Mutual relationships between nurses and physicians (three items) characterizes the positive working relationships between physicians and the nursing staff.[10,13]

The scale of measurement used is of the Likert type with four points, in which participants respond if they agree that a certain characteristic is present in their daily work, through the choice of one out of four options: from I totally disagree (one point) to fully agree (four points), that is, the higher the score, the better the professional's perception about the environment where they work. The neutral score is represented by the score 2.5 and the scores for each subscales must be done by the mean scores of the participants' responses.[10]

Institutions with scores above 2.5 on any or only one subscale are classified with unfavorable environments; those that reach scores above 2.5 in two or three subscales are considered with miscellaneous environments and hospitals with values above 2.5 in four or five subscales are classified with favorable environments to professional nursing practices.[11]

The data collection was carried out between the months of November 2017 to July 2018. Professionals were individually approached and for those who met the inclusion criteria we explained the research objectives. After the signature of the Free and Informed Consent Form, participants received the collection instruments and the researchers waited for them to be filled.

The data were tabulated in Microsoft Excel for Windows® and analyzed by the Statistical Analysis System® (SAS) version 9.4 and Statistical Package for Social Sciences® (SPSS) version 22. Absolute and relative frequencies, position and dispersion measurements were calculated. To compare the hospitals, the Kruskall Wallis test was used, followed by the Dunn post-test and the multinomial regression.

Prior to conducting the research, we obtained authorization from the responsible of each one of the institutions and favorable report from Research Ethics Committee, protocol 2,331,210 and 2,378,525.

Results

A total of 1773 professionals participated in the study (61% response rate), with an average age of 38.2 years old (SD=9.5), time working in the job of 11.5 years old (SD=8.3), time in the unit of 6.6 years old (SD=6.3) and the mean number of patients under the professional's responsibility was 6.8 (SD=6.7), that is, 4.3 (SD=6.7) for nursing technicians/ nursing assistants and 15.8 patients (SD=6.7) for nurses. The majority of the sample was female (81.3%), had a complete high school education (60.0%) and performed the role of nursing technician (69.2%). concerning the work sector, 43.2% were in non-critical patient hospitalization units. The description of the characteristics that favors the nursing professional practice, as well as the classification of the environment in favorable, miscellaneous or unfavorable and the comparison of the institutions are presented in table 1.

Table 1. Description of the characteristics that favor the professional practice of nursing, classification and comparison of the environment between the institutions

PES Subscales	A				B				C				D				E				*p-value*§
	n	$\bar{x}$*	SD†	Md‡	n	$\bar{x}$*	SD†	Md‡	n	$\bar{x}$*	SD†	Md‡	n	$\bar{x}$*	SD†	Md‡	n	$\bar{x}$*	SD†	Md‡	
Participation††	510	2.3	0.7	2.2	314	1.9	0.7	1.6	242	2.4	0.7	2.4	267	2.6	0.8	2.6	390	2.7	0.7	2.6	< 0.0001
Fundamentals‡‡	497	2.6	0.6	2.6	311	2.2	0.7	2.0	247	2.8	0.6	2.8	264	2.9	0.6	2.9	384	3.0	0.6	3.0	< 0.0001
Leadership§§	511	2.6	0.7	2.6	309	2.4	0.8	2.4	244	2.5	0.8	2.6	266	2.9	0.7	3.0	396	2.7	0.7	2.8	< 0.0001
Resources‖	510	2.3	0.7	2.3	310	1.9	0.7	1.8	245	2.4	0.7	2.5	268	2.7	0.7	2.8	394	2.7	0.7	2.8	< 0.0001
Relations¶	523	2.8	0.6	2.3	319	2.6	0.8	2.7	251	2.6	0.7	2.7	267	3.0	0.7	3.0	401	2.8	0.6	3.0	< 0.0001
Classification	Miscellaneous				Unfavorable				Miscellaneous				Favorable				Favorable				

$\bar{x}$ *Mean; †SD – Standard deviation; ‡Median; §p-value obtained through the Kruskal-Wallis test; †† Dunn Post-test - A≠B, D, E; B≠C, D, E; C≠E; ‡‡ A≠B, C, D, E; B≠C, D, E; C≠E; §§ A≠B, D; B≠D, E; C≠D, E; ‖ A≠B, D, E; B≠C, D, E; C≠D, E; ¶ A≠B, D; B≠D; C≠D; D≠E

Considering the total sample, the mean and medians found for the subscales were, respectively: 2.4 and 2.4 for Participation in hospital subjects; 2.7 and 2.7 for Nursing Fundamentals focused on the quality of care; 2.6 and 2.6 for Leadership Skills; 2.4 and 2.5 for Adequacy of resources and 2.8 and 3.0 for Relationships between physicians and nurses. Also, with regard to the comparison of hospitals, a multinomial regression was performed to estimate the probability of a hospital presenting more favorable characteristics concerning the environment where nursing staff develop their activities and these results are presented in table 2.

Table 2. Probability of a hospital to present more favorable results regarding the characteristics of the environment when compared to hospital B

Dependent variable	Independent variables	Odds Ratio	95% Confidence interval		*p-value*
			Lower limit	Upper limit	
Environment	A	2.7	2.1	3.6	< 0.0001
	C	3.0	2.2	4.2	< 0.0001
	D	5.8	4.2	8.1	< 0.0001
	E	5.2	3.9	7.1	< 0.0001

The items that reached score equal to or less than 2.5 in each subscale are presented in chart 1.

It is noted that none of the items received lower scores than the cutoff score in the Relationship between physicians and nurse's subscale.

Discussion

In the conception of this research, it was intended to map the environment of professional nursing practice in the ten hospitals eligible for the study, however, only five accepted our invitation, which may limit the generalization of the results. Furthermore, the differences found between public and private hospitals were analyzed through the financing and accreditation process, however, it is known that other variables that were not controlled may have influenced the results.

The results of this study are important so that managers can know the characteristics of the environment of the institutions where they operate and can benchmarking, comparing their reality with the other institutions. In addition, this research provides subsidies for the implementation of strategies that best qualify the environments, because the literature demonstrates that in environments that favor nursing practices, the results are better for patients[14-16], professionals[17,18] and institutions[17,19].

In the description of the professionals' perception concerning the environment where they work, it was possible to notice that public hospitals of

Chart 1. Items that received scores equal to or less than 2.5 on the Practice Environment Scale subscales

Subscale	Items
Participation in the discussion of hospitals subjects	Opportunity for career development.
	Opportunities for improvement.
	The institution management listens and responds to workers' concerns.
	The nursing manager/coordinator/supervisor, of the unit, consults the staff about the daily procedures and problems.
Fundamentals focused on the quality of care	Active quality assurance program.
	Program of monitoring/mentoring of newly hired nursing professionals.
Ability, leadership and managers' support	The nursing manager/coordinator/supervisor, of the unit, use errors as learning opportunities and not as criticisms.
	Recognition and praise for a well-done job.
Adequacy of the staff and resources	Sufficient time and opportunity to discuss problems with patient care with other nurses.
	A sufficient number of nursing staff to provide quality care to the patients.
	A sufficient nursing staff to accomplish the job.

this research (A and B) and the environment were classified, respectively, as miscellaneous and unfavorable. In a national research using PES in four intensive care units of teaching hospitals, although the authors did not perform the classification of the environment, it was possible to infer from the expressed means that the environment of these units was unfavorable. Because they are teaching hospitals, probably public ones, the results are similar to those found in hospital B of this study.[20]

Concerning the private hospitals (C, D and E), no studies were found using PES in Brazilian culture. However, when using another instrument that evaluates the characteristics of the environment of the professional practice, authors also found more favorable results in private hospitals, when compared to the public ones.[21]

With regard to subscales, the Participation of nurses in hospital obtained the most unfavorable evaluation in the perception of the participants and in the evaluation of countries such as the United States of America, China, Thailand, Japan, New Zealand, Germany [22] and Turkey [23] it was possible to perceive that the hospitals surveyed have much to invest in the inclusion of members of the nursing staff in political decisions, commissions and committees, as well as in offering opportunities for professional growth and in a more accessible communication with the managers.[10]

In resource adequacy, the second subscale with the most unfavorable evaluation, it was noted that only China and Thailand achieved more favorable results,[22,23] which shows that the feeling of work overload is not present only in the participating professionals of this research.

The items that compose this subscale, especially characterize the staff sizing and when analyzing the number of patients under the responsibility of the professional of average level, it was noticed that the mean found was very similar to that of a study carried out in a Brazilian pediatric hospital.[7] Concerning the nurses, the mean found in this research (15.8 patients) was higher than the previously mentioned study (12.4 patients),[7] as well as in another national study in adult intensive care (9.1 patients).[24]

These results may explain why this subscale did not reach scores considered favorable, since the workload, especially of nurses, was higher in this study. In addition to the inadequate dimensioning of the nursing staff, the lack of adequate support services, an item also contemplated in this subscale, contributes to the professionals' overload who often end up developing activities that are not part of their functions, for the benefit of patients.

In the Ability and management leadership subscale, the results demonstrated that countries such as China, Thailand, New Zealand, the United Kingdom and Turkey achieved more favorable results,[22,23] revealing the necessity of a review of the managers' performance with the staff.[10]

Although the Nursing Fundamentals for quality of care subscale was considered the second more favorable, when comparing the results found with the data from nine other countries, it was noticed that the hospitals of this research demonstrated more favorable results only when compared to South Korea[22] and Turkey.[23] The development of the staff, programs that guarantee the quality of the care and care plans described and updated for the patients[10] are critically important to achieve better results.

Concerning the Relationship between physicians and nurses subscale, the best evaluated by the professionals that participated in this research, it was possible to perceive a better performance of the hospitals studied when compared only to China, Thailand and New Zealand.[22] The communication among professionals is essential to ensure the safety of the care provided to the patients.[25]

The classification of the hospitals environment in this study cannot be compared to the classification of the institutions investigated in the research involving nine countries,[22] since the sample of hospitals ranged from 19, in Japan, to 762, in the United States of America, totaling 1406 institutions.[22] It is worth mentioning that this study was carried out in only five hospitals and considering the extension and cultural diversity existing in Brazil, new investigations, in different regions of the country, are extremely important so that the Brazilian reality may be compared to the international one.

In the comparison between the hospitals, it was possible to perceive significant differences concerning all the subscales. In general, the private hospital and those which attend both patients from SUS and private ones and from supplementary health, demonstrated a better performance concerning the presence of characteristics that are favorable to the professional practice of nursing when compared to the public ones, which attend 100% of the patients from SUS.

These data were also confirmed in the regression, since hospitals D, E and C (private) demonstrated greater chances of having a favorable environment for the development of nursing activities when compared to hospital B (public). Although hospital A (public) also had a greater chance of having a more favorable environment than B, it was possible to notice that the public ones, in general, presented a more unsatisfactory performance.

These analyses allow the reflection that, perhaps, the hospital financing system and the accreditation process may, in some way, influence the nursing work environment.

In general, hospital B, followed by the A, were the ones that obtained the worst performance concerning the professionals' perception about the environment where nursing staff work. These hospitals, by attending 100% of the patients from SUS, face numerous problems and fragilities of political, economic, managerial and economic order.[26]

SUS underfunding[26] may contribute to some characteristics, such as opportunities for improvement, career development, active quality assurance program, mentoring program for new hires and staff sizing, to be negatively evaluated.

Hospital C, in addition to SUS, complements its financing by attending private patients and those from supplementary health (approximately 40%). This hospital is fully accredited by ANO, a fact that may contribute to the standardization and mapping of care processes, physical structure development, work organization, leadership and cost management[27]

D and E hospitals, that achieved the best evaluation, have, respectively and approximately, 70% and 100% of the funding from private consultations and supplementary health care insurances, as well as having all the benefits already described from the accreditation process, since they have ANO certification level two and three, respectively. A more adequate financing to the necessities linked to the accreditation process, may have contributed so that these hospitals were better evaluated by their collaborators, however, other variables that were not included in this research, influence the characteristics of the environment in which nursing performs its activities, because hospital D was the one that presented the highest chances of being a hospital with favorable characteristics and still does not have ANO level three and also, it has part of the financing coming from SUS.

It is worth noting that although some items that were evaluated with lower scores than the cut-off score be directly or indirectly linked to financial investments, most of them refer to changes in managers' behavior and in the construction of respectful relationships among professionals. Authors emphasize that these attitudes do not add any operational cost and contribute to the construction of a more favorable environment for nursing practice.[28]

Finally, considering that Brazil is a very wide country, with different realities, new studies related to the mapping of the characteristics of the environment of nursing practice, using the same instrument and controlling other variables, must be performed so that the national reality can be better when compared to the international one and so that managers can have data that will help them to implement new strategies in order to obtain better results.

Conclusion

Hospitals that received financing from supplementary and private health sectors presented better performance when compared to the public ones, and the characteristics that received the worst evaluation in the professionals' perception were related to the participation of nurses in hospital subjects, fundamentals focused on the quality of care, leadership and support of the coordinators to the nursing staff and adequacy of resources.

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Collaborations

Gasparino RC, Ferreira TDM, Carvalho KMA, Rodrigues ESA, Tondo JCA and Silva VA declare that they contributed to the design of the study, analysis and interpretation of the data, article writing, relevant critical review of intellectual content and approval of the final version to be published.

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