

Nursing practice environment, satisfaction and safety climate: the nurses' perception

Ambiente da prática, satisfação e clima de segurança: percepção dos enfermeiros

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Keywords

Health facility environment; Patient safety; Job satisfaction; Health resources

Descritores

Ambiente de instituições de saúde; Segurança do paciente; Satisfação no trabalho; Recursos em saúde

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Abstract

Objective: To assess the nurses' perception on the practice, job satisfaction, safety climate and to verify correlations among these variables and the adequacy of material and human resources, as well as the intention to stay at the institution and in the profession.

Methods: A descriptive study with a quantitative approach was undertaken. To calculate the sample, a p-coefficient of 0.50 was considered, assuming a 3% sampling error and a 5% significance level, which resulted in 1057 subjects. For the data collection, a characterization form was used, which contained the variables sex, monthly income, length of experience at the institution, existence of another employment bond and weekly hour load. A Likert-type response scale was used. The Nursing Work Index - Revised (NWI-R) was used to assess the nurse's perception on the practice.

Results: The nurses' perception of the practice environment is positive, except in the control over the work environment domain. They assessed the safety climate as negative and are dissatisfied at work. A strong negative correlation was identified between control over the work environment and the adequacy of the number of professionals, as well as a strong positive correlation between job satisfaction and the intention to stay at the institution.

Conclusion: The nursing work environment was assessed as favorable, except for control over the work environment, mainly influenced by the insufficient number of nursing professionals. The safety climate was perceived as unfavorable at the different health care institutions in the State of São Paulo and the nurses did not report job satisfaction.

Resumo

Objetivo: Avaliar a percepção dos enfermeiros sobre o ambiente da prática, satisfação no trabalho, clima de segurança e verificar correlações entre essas variáveis e adequação de recursos materiais e humanos, e intenção de permanecer na instituição e na profissão.

Métodos: Trata-se de um estudo de abordagem quantitativa, do tipo descritivo. Para o cálculo da amostra foi considerada uma proporção p igual a 0,50, assumindo-se um erro amostral de 3% e nível de significância de 5%, que resultou em 1057 sujeitos. Utilizou-se para a coleta de dados a ficha de caracterização contendo as variáveis sexo, renda mensal, tempo de trabalho na instituição, existência de outro vínculo empregatício e carga horária semanal. A escala de resposta foi do tipo Likert. O Nursing Work Index - Revised (NWI-R) foi utilizado com a finalidade de avaliar a percepção do enfermeiro quanto ao ambiente da prática.

Resultados: Os enfermeiros possuem percepção positiva do ambiente, exceto para o controle, avaliaram o clima de segurança como desfavorável e estão insatisfeitos no trabalho. Identificou-se forte correlação negativa entre controle sobre o ambiente e adequação do número de profissionais e forte correlação positiva entre satisfação no trabalho e intenção de permanecer na instituição.

Conclusão: O ambiente da prática foi avaliado pelos enfermeiros como favorável, exceto para o controle sobre o ambiente, influenciado principalmente pelo número insuficiente de profissionais de enfermagem. O clima de segurança foi percebido como desfavorável nas diferentes instituições de assistência à saúde no Estado de São Paulo e os enfermeiros não relataram satisfação no trabalho.

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Introduction

As a strategic profession, nursing is present at the different health care services, considering the global scenario of increasing demands and complexity at the different health care levels, in addition to the financial constraints and unbalanced distribution of the workforce. In this scenario, staff management is fundamental to guarantee the access to and universal coverage of the health systems.^(1,2)

The nursing practice environment, defined as the organizational characteristics in the work environment that make the professional practice easier or more difficult, is considered favorable when the nurses have autonomy, control over the work environment and good relationships with the health team.⁽³⁾ For more than a decade, studies on this theme have been valued, as environments favorable to the practice entail better outcomes for the professionals, health institutions and patients.⁽⁴⁻⁷⁾

Positive practice environments are also associated with the positive assessment of the quality of nursing care,⁽⁷⁻⁹⁾ a higher level of job satisfaction,^(7-8,10) a lower level of burnout and lesser intention to leave the job or the profession.^(8,10,11)

Other studies highlight that the increased proportion of nurses and improvements in the environment of professional practice can also be associated with the positive assessment of patient safety,^(12,13) with the patients' increased satisfaction level^(7,14) and decreased mortality at the institutions.^(4,5)

In Latin America, however, studies to assess the nursing practice environment are still incipient and, in Brazil, the studies are concentrated in the Southeast.⁽¹⁵⁻¹⁸⁾ It is highlighted that one of the contributions of this research is the collection of information that can support the knowledge and planning of actions for adequate human resource management in nursing, a theme that is one of the research priorities in Latin America, in line with the strategic human resource management guidelines, whose main goal is to guarantee the universal coverage and, consequently, the quality and safety of health care.^(2,19)

The objectives in this study were to assess the nurses' perception on the work environment, job satisfaction, safety climate and to verify correlations between these variables and the adequacy of material and human resources, as well as the intention to stay at the institution and on the job.

Methods

A descriptive study with a quantitative approach was undertaken. In the sample, the nurses were considered who reported working in direct patient care and/or in supervisory functions at health institutions in the State of São Paulo and who had worked at the institution for six months or more. Nurses were excluded who indicated that they exclusively work in teaching, management or supervision at the institution and who informed absence from work due to medical leave for any reason, or any other type of leave.

The probabilistic sample was calculated based on the number of nurses who were registered as professionally active at the Regional Nursing Council in the State of São Paulo (COREN-SP).⁽²⁰⁾ To calculate the sample, a p-coefficient of 0.50 was considered, assuming a 3% sampling error and a 5% significance level, which resulted in 1057 subjects. To guarantee the number of participants in the sample, the number of electronic invitations forwarded to nurses in a randomized manner was three times the sample size calculated in this study and, in total, six waves of 4000 electronic invitations were forwarded.⁽²¹⁾

To collect the data, the characterization form was used, which contained the variables sex, monthly income, length of experience at the institution, existence of other job contract and weekly hour load. In the same instrument, the assessment variables of the perceived organizational performance were addressed, as follows: adequacy of material and human resources, intention to stay in the current job during the next year and in nursing. A Likert response scale was used, varying from zero (0) to ten (10) points and, the closer to ten, the more positive the nurses' assessment.

The Nursing Work Index - Revised (NWI-R) was used to assess the nurse's perception on the work environment. This tool consists of the following subscales: autonomy (five items), control over the work environment (seven items), relationship between nurses and physicians (three items) and organizational support (ten items deriving from previous subscales).⁽¹⁶⁾

A Likert-type response scale was used with the options I completely agree (one point) until I completely disagree (four points) and, the lower the score, the more favorable the environment. Despite the lack of an established cut-off point to assess the score, scorers inferior to 2.5 points are considered as environments favorable to practice.⁽³⁾ For this study, the Cronbach's alpha coefficients corresponded to 0.80 for the autonomy and control over the work environment subscales and 0.88 for the subscale relationship between nurses and physicians.

The variables job satisfaction and safety climate were extracted from the Safety Attitudes Questionnaire (SAQ) - Short form 2006. The five-point response scale varies from I completely disagree (0 points) to I completely agree (100 points) and also contains the response category "does not apply", which is not scored. Scores equal or superior to 75 points are considered as positive assessments of the safety climate and job satisfaction.⁽²²⁾ A Cronbach's alpha coefficient of 0.85 was found for the job satisfaction subscale and 0.77 for the safety climate subscale.

The data were collected online between December 2014 and June 2015. The participants were recruited by COREN-SP, through an e-mail sent to the nurses registered as active professionals. COREN-SP exclusively held the personal information and e-mails, which the primary researcher did not have access to. The study was disseminated on the institutional homepage of the council and in social networks.

Before the data collection, the instruments were submitted to a pretest to assess the clarity and understanding of the items, as well as to verify the time needed to complete the instruments and to detect inconsistencies. This step involved 20 participants,

who completed the instruments online and faced no difficulty to complete them. As highlighted, the instruments used have been adapted and validated for the Brazilian culture.^(16,22)

The data were organized in an electronic worksheet and the statistical software SAS® version 9.2. was used for the descriptive analysis of the sample. The absolute and percentage frequencies were assessed for the categorical variables and the position (mean, median, minimum and maximum) and dispersion measures (standard deviation) for the categorical variables.

First, the Kolmogorov-Smirnov test was applied to test whether the distribution of the data was normal. For the correlation analysis, Spearman's correlation coefficient was used, considering coefficients between 0.10 and 0.29 as weak correlation, between 0.30 and 0.49 as moderate, and 0.50 or higher as strong.⁽²³⁾ For analyses involving comparisons, the Mann-Whitney or Kruskal-Wallis test was used, and Dunn's test was applied to locate statistically significant differences between comparison groups. For all statistical tests, a 5% significance level was considered, that is, $\alpha = 0.05$.

The ethical recommendations were followed and approval for the project was obtained from the Research Ethics Committee, registered under Ethical Assessment Certificate (CAAE) 30822314.9.0000.5404.

Results

In total, 1516 answers to the research were received. Nevertheless, for the sample, 465 nurses were considered who complied with the inclusion criteria, 59.6% of whom ($n = 277$) reported working in care and 40.4% ($n = 188$) in care and management.

Among the participants who did not comply with the inclusion criteria, 144 reported being exclusively active in management activities (supervisor, manager, director or technical responsible), 106 exclusively taught, 262 reported less than six months of experience at the institution and 51

were on medical leave or any other type of absence during the data collection period. In addition, 488 were excluded from the database during the analysis due to incomplete items.

The characteristics of the sample profile are presented in table 1.

Concerning the perceived organizational performance, on a scale from zero (0) to ten (10) points, the mean perceived adequacy score of the material resources was 5.43 (SD = 2.68) and, for the perceived adequacy of the number of professionals, it was 5.10 (SD = 2.91). The nurses reported a mean score of 6.66 (SD = 3.39) for the intention to stay on the job and 7.53 (SD = 3.11) for the intention to stay in the profession.

Table 1. Characteristics of nurses in the sample

Variable	n(%)	Mean	Standard deviation	Median	Variation (min. - max.)
Age		35.7	8.8	34	22 - 67
Sex					
Male	74(15.9)				
Female	391(84.1)				
Monthly income*					
Up to 2 wages	9(1.9)				
2 to 4 wages	163(35.0)				
4 to 10 wages	259(55.7)				
10 to 20 wages	27(5.8)				
More than 20 wages	7(1.5)				
Work area					
Inpatient care	247(53.1)				
Outpatient care or psychiatric service	87(18.7)				
Primary care	107(23.0)				
Others (e.g.: private clinics, prison units)	24(5.2)				
Length of experience at the unit					
6 to 11 months	115(24.7)				
1 to 2 years	97(20.9)				
More than 2 until 4 years	114(24.5)				
More than 4 years	139(29.9)				
Length of experience at the institution					
6 to 11 months	82(17.6)				
1 to 2 years	69(14.8)				
More than 2 until 4 years	98(21.1)				
More than 4 years	216(46.5)				
Other job contract					
Yes	101(21.7)				
No	364(78.3)				
Weekly hour load (in hours)	465(-)	42.8	13.2	40	4 - 80

* Minimum wage in Brazil: one (1) corresponding to R\$724.00 until December 2014; one (1) corresponding to R\$ 788.00 as from January 1st 2015

The perception variables of the nursing practice environment, safety climate and job satisfaction are presented in table 2.

Table 2. Descriptive analysis of perception of the professional practice environment, satisfaction at work and safety climate of the nurses

Construct	Variable	Mean	Standard deviation	Median
Nursing practice environment	Autonomy	2.29	0.70	2.20
	Control over the work environment	2.52	0.68	2.43
	Relationship between nurses and physicians	2.22	0.79	2.00
Safety climate	Safety climate	63.42	19.50	64.29
Job satisfaction	Job satisfaction	68.83	23.69	75.00

The assessment results of the correlation between the independent variables (intention to stay in the current job and in the profession, adequacy of material resources and human resources) and the dependent variables (perceived nursing practice environment, job satisfaction and safety climate) are presented in table 3.

Table 3. Description of correlations between the variables intention to stay in the current job and in the profession, assessed adequacy of material resources and human resources

Dependent variables	Independent variables			
	Intention to stay on the job in the next year	Intention to stay in nursing	Adequacy of human resources	Adequacy of material resources
Autonomy	-0.44 [†]	-0.38 [†]	-0.37 [†]	-0.36 [†]
Control over the work environment	-0.43 [†]	-0.36 [†]	-0.54 [†]	-0.43 [†]
Relationship between nurses and physicians	-0.31 [†]	-0.28 [†]	-0.29 [†]	-0.26 [†]
Safety climate	0.40 [†]	0.31 [†]	0.36 [†]	0.42 [†]
Job satisfaction	0.50 [†]	0.48 [†]	0.34 [†]	0.34 [†]

[†]p < 0.0001; Spearman correlation test

When comparing the nurses' perception of the work environment, job satisfaction and safety climate in the different activity areas (inpatient, outpatient and primary care), a statistically significant difference was verified for the subscale relationship between nurses and physicians (p = 0.003) and, in Dunn's post-test, a difference was identified between the inpatient and outpatient nurses' assessment of this subscale of the NWI-R.

Discussion

The sample was young and, although mostly female (84.1%), an increasing male participation in the workforce is observed (15.9%). These nurses had more than four years of experience at the service and at the institution (29.9% and 46.4%, respectively). Although most nurses reported having only one job contract (78.7%), the average weekly hour load was more than 40 hours (42.8; SD = 13.2) and 75% of the nurses reported working up to 44 hours per week.

Most professionals worked in inpatient care (53.1%), followed by primary care (23.0%), outpatient services (18.7%) and a small part (5.2%) at private clinics or prison units, showing that the institutions, whether public, private or non-profit, are important employers for the nursing professionals.⁽²⁴⁾

As for the adequacy of the material resources and the number of nursing professionals for care, slightly above-average scores are observed (5.4 and 5.1, respectively), which could indicate that the nurses' assessment of these aspects is median, without positive or negative highlights.

The nurses reported the intention to stay at the institution and in the profession, and the percentage of nurses intending to stay in their current job was similar to the findings in Norway, Spain and Switzerland.⁽⁶⁾ It is interesting to emphasize that, although the general picture in the State of São Paulo is similar to these countries, Brazil is known as a heterogeneous country of continental proportions. Therefore, studies are recommended in which the data from different regions of the country can be analyzed, addressing their particularities, for which this study appoints a possible methodological trajectory.

Despite the nurses' favorable perception, as demonstrated by the mean score on the subscales autonomy and relationship between nurses and physicians, they assessed that they have little control over the environment, which a score bordering on what is considered favorable for this subscale. In that sense, background studies exist in which the nurses reported little control over

the environment, at the hospital institutions and in primary care.^(15,18) In a study involving intensive care nurses, however, a favorable assessment of all dimensions of the nursing practice environment was observed.⁽¹⁷⁾

One study that involved the assessment of the nursing work environment and the quality of care in 12 countries of Europe highlighted the concern with the adequacy of human resources as an urgent issue.⁽⁶⁾ In that sense, evidence exists in the literature that associates the sufficient number of nursing professionals with positive reports on the quality of care and patient safety,^(4,13) and also with the drop in the institutional mortality rates and increase in the patient satisfaction levels.^(5,14)

A correlation was verified between the perceived organizational performance variables and the assessment of the nursing practice environment, job satisfaction and safety climate. Although all correlations among these variables were statistically significant, the adequacy of human resources demonstrated a strong negative correlation with the control over the work environment. In other words, the worse the nurses' assessment of the number of nursing professionals for care, the worse they perceive their control over the work environment. Authors from a study developed in Canada involving nurses who worked at urban and rural hospitals, as well as nurses from critical services, highlighted that the adequacy of material and human resources was strongly related with the control over the environment.⁽²⁵⁾

The intention to stay in the current job during the next year was strongly correlated with the job satisfaction, demonstrating that, the stronger the intention to stay, the more positive the nurse's job satisfaction. Previous studies have highlighted the strong correlation between the satisfaction and the intention to stay in the current job.^(26,27)

The relationship between nurses and physicians a negatively influenced the nurses' perception on the practice environment. When comparing nurses from different activity areas, it was verified that the nurses working in inpatient services hold negative

perceptions when compared the nurses working at outpatient services or in primary care. It is interesting that this finding strengthens the empirical inference that nurses perceive that the nursing team and medical team professionals at the outpatient and primary care services work together more naturally within the work processes.

What the study limitations were concerned, the interpretation range of the results can be considered restricted, due to the cross-sectional design. In the recruitment phase of the participants by COREN-SP, the e-mail addresses could not be verified, representing a problem for the calculation of the response rate.

In addition, the possibility should be considered that many of the addresses are outdated or even that the nurses did not see the messages. The use of the online data collection procedure should also be highlighted which, in addition to the professionals' research participation culture, culminated in a large number of incomplete data (n = 488), which were excluded from the analysis. Nevertheless, the participants were strictly selected, delimited by the questions asked to assess the inclusion criteria, when 563 nurses were disqualified.

Although this study presents information on the assessment of the nursing practice environment, job satisfaction and assessment of the safety climate from the perspective of nurses in one Brazilian state, these professionals' voice should be heard in the implementation of policies and strategies that allow us to approach the health access and coverage, as well as the sustainable development targets.⁽²⁾

To plan strategic actions in health services, one of the main factors to be considered should be the adequate number of nursing professionals for care, as the relation between this factor and the nurses' perception of the work environment has been demonstrated. Furthermore, research is recommended that presents evidence on what factors can predict the nurses' intention to stay in the job and in the profession, as this can also influence the job satisfaction and the assessment of the safety climate at the institution.

Conclusion

The nurses assessed the work environment as favorable, except for the control over the work environment, mainly influenced by the insufficient number of nursing professionals. The safety climate was perceived as unfavorable at the different health care institutions in the State of São Paulo and the nurses did not report job satisfaction. The job satisfaction was strongly influenced by the intention to stay at the institution during the next year.

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Collaborations

Dorigan GH and Guirardello EB collaborated with the conception of the study, including the analysis and interpretation of the data, writing of the article, relevant critical review of the intellectual content and final approval of the version for publication.

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