



**The better the work environment
the more positive the safety climate:
a cross-sectional study**

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No conflicts of interest have been declared by the authors

Funding: Grant # 2013/05096-6. São Paulo Research Foundation (FAPESP)

INTRODUCTION

- The health care environment is complex, requires technological and human resources to meet the care demands of patients and families.
- Nurses, are the largest contingent of health workers, responsible for surveillance of patients in 24 hours.
- Changes in care delivery system in recent decades has affected the way in which nursing care provides and maintains patient safety.

INTRODUCTION

- In this context, several studies addressing the impact of the practice environment and patient outcomes and nursing, showing that in environments in which nurses have autonomy, control over the work environment and good relations with staff, result:
 - Lower levels of burnout
 - Greater job satisfaction
 - Intention to leave the job, and
 - Best results for the patient as regards the quality of care and patient safety.

PURPOSE

- To measure the nurses' perception of the practice environment and its relation to the safety climate, perception of quality of care and burnout level in critical care units.

METHODS

- Design: Cross-section survey
- Study setting: Three ICU of a teaching hospital in the State of São Paulo, Brazil.
- Convenience sample: Registered nurse and nursing technicians.
 - Inclusion criteria: nurses and nursing technicians involved in direct patient care and time experience \geq three months.
 - Exclusion criteria: Nurses with management activities or were absent from the unit, due to vacation or license.

Nursing Work Index – Revised (NWI-R)

- Objective: To evaluate the perception of nursing in relation to their work environment.
- It contains 15 items, divided into four subscales:
 - Autonomy (5 items)
 - Control over practice (7 items)
 - Nurse-physician relations (3 items)
 - Organizational support, 10 items derived from the first three subscales
- Likert type scale, with scores ranging from one to four points. The lower the score, the higher the presence of positive attributes, conducive to the practice of professionals
- Reliability: 0.70 for the subscale autonomy, 0.83 for the subscale nurse-physician relations and 0.73 for the subscale control over the environment (0.73).

Maslach Burnout Inventory (MBI)

Measures

- Objective: To measure the physical and emotional exhaustion of workers in relation to work. It contains 22 statements, divided into three dimensions:
 - Emotional exhaustion (9 items)
 - Personal accomplishment (8 items)
 - Depersonalization (5 items)
- Likert type scale with five points: 1 (never); 2 (rarely); 3 (sometimes); 4 (often) and 5(always).
 - Emotional exhaustion and depersonalization: the higher the score, the greater the feeling of emotional exhaustion and depersonalization.
 - Personal accomplishment: the higher the score, the higher the personal accomplishment.
- Reliability: 0.91 to emotional exhaustion, 0.79 for personal accomplishment and 0.73 for depersonalization.

Safety Attitudes Questionnaire Short Form 2006 - (SAQ)

- To evaluate the perception of health professionals about the safety attitudes in their work environment. It contains 41 items:
 - Teamwork climate
 - Safety climate
 - Job satisfaction
 - Stress recognition
 - Perceptions of management unit
 - Perceptions of management hospital
 - Working conditions
 - Safe behavior
- Five-point Likert scale ranging from 1 (disagree strongly) to 5 (agree strongly). The total score of the subscales could range from 0 to 100. Scores above 75 points indicates a positive perception of a safe environment for the patient.
- Reliability: In this study ranged from 0.64 to 0.81.

Methods

- Data collection

- Subjects were addressed individually in their jobs, received information about the purpose of the research and those who agreed, signed the consent form.

- Data analysis:

- *Microsoft® Office Excel 2007* program
- SAS 9.4 for Windows (*Statistical Analysis System* version 9.4)

- Descriptive statistics for categorical and continuous variables.

- Spearman correlation coefficient: The values vary from -1 to 1: lack of correlation (0.00), poor correlation (0.1-0.29), moderate correlation (0.30- 0.49) and strong correlation ≥ 0.50 .

- For the statistical tests was considered a 5% significance level, but it was applied the Bonferroni correction according to the number of performed correlations. Considering the total of 83 correlations it was assumed a significance level of 0.06%.

RESULTS

■ Sample

- 114 nursing professionals: 41 (36,0%) registered nurse e 73 (64,0%) nursing technicians
- Age: 35,4 years (Min=23; Max= 60, DP= 8,7 anos)
- 79,8% female
- 81,4% with one job
- Years of formation: 10,4 years (Min=2; Max= 32, DP 6,2 years)
- Working time in the unit: 5,2 years (Min=0,5 years; max= 26,3 dp=5,3 years)
- Working time in the institution: 7,7 years (Min= 0,25 years; Max=30,3, DP 7,4 years)

Tabela 1. Average, standard deviation, median, minimum and maximum values and quartiles for the subscales of the NWI-R, MBI and SAQ of nurses and nursing technicians.

Variáveis	Mean	DP	Min	Q1	Median	Q3	Max
NWI-R							
Autonomy	1.93	0.53	1.00	1.60	1.80	2.20	3.60
Organizational support	2.04	0.48	1.10	1.70	2.00	2.30	3.40
Control over practice	2.08	0.53	1.00	1.71	2.00	2.29	3.71
Nurse-physician relations	2.10	0.65	1.00	1.67	2.00	2.33	4.00
MBI							
Emotional exhaustion	20.74	6.36	9.00	16.00	19.00	25.00	43.00
Personal accomplishment	30.88	4.20	20.00	29.00	31.00	33.50	40.00
Depersonalization	9.15	3.39	5.00	6.00	9.00	11.00	21.00
SAQ							
Job satisfaction	76.19	20.72	0.00	60.00	80.00	90.00	100.00
Stress recognition	69.04	26.68	0.00	56.25	75.00	93.75	100.00
Teamwork climate	68.62	17.22	20.83	54.17	70.83	79.17	100.00
Safety climate	60.18	18.33	14.29	46.43	62.50	71.43	95.83
Safe behavior	64.53	22.75	0.00	50.00	66.67	83.33	100.00
Perceptions of management unity	56.53	22.51	0.00	50.00	58.33	70.83	100.00
Working conditions	56.49	26.27	0.00	37.50	58.33	75.00	100.00
Perceptions of management hospital	48.56	21.49	0.00	33.33	50.00	62.50	100.00

Table 2. Spearman's correlation coefficient among the subscales of the NWI-R, MBI, SAQ and perception of quality of care.

Variable	Autonomy	Nurse-physician relations	Control over practice	Organizational support	Emotional exhaustion	Personal accomplishment	Despersonalization	Teamwork climate	Safety climate	Job satisfaction	Stress recognition	Perceptions of management unit	Perceptions of management hospital	Working conditions	Safe behavior
Care quality	-0.44*	-0.37*	-0.30*	-0.40*	-0.29	0.33*	-0,22	0.39*	0.39*	0.34*	-0,04	0.27	0.19	0.20	0.31
Autonomy					0.41*	-0,25*	0,25	-0.46*	-0.43*	-0.39*	0,15	-0.47*	-0.39*	-0.49*	-0.46*
Nurse-physician relations					0.23	-0,12	0,21	-0.47*	-0.36*	-0.25	0,15	-0,29	-0.21	-0.35*	-0.38*
Control over practice					0.48*	-0,24	0,18	-0.48*	-0.42*	-0.38*	0,15	-0.43*	-0.39*	-0.44*	-0.43*
Organizational support					0.40*	-0,21	0,20	-0.53*	-0.46*	-0.36*	0,18	-0.40*	-0.38*	-0.46*	-0.43*
Emotional exhaustion								-0.47*	-0.41*	-0.37*	0,17	-0.37*	-0.37*	-0.41*	-0.38*
Personal accomplishment								0.33	0.31	0.36*	-0,04	0.25	0.27	0.17	0.19
Despersonalization								-0.29	-0.20	-0.30	-0,08	-0.27	-0.33	-0.36*	-0.23

*Bonferroni correction, $p < 0.0006$

Perception of quality of care – moderate magnitude correlation to all domains of the NWI-R and domains: teamwork climate, safety climate and job satisfaction (SAQ).

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Autonomy and Control over the practice - moderate magnitude correlation with emotional exhaustion and all domains of the SAQ, except for the recognition stress domain.

Organizational support - strong magnitude correlation with teamwork climate; moderate magnitude correlation with emotional exhaustion, safety climate, job satisfaction, perceptions of management in the unit and hospital, working conditions and safe behavior domains of the SAQ, except for the recognition stress domain.

Nurse-physician relations - moderate magnitude correlation with teamwork climate, safety climate, working conditions and safe behavior.

Table 2. Spearman's correlation coefficient among the subscales of the NWI-R, MBI, SAQ and perception of quality of care.

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*Bonferroni correction, $p < 0.0006$

Emotional exhaustion - moderate magnitude correlation with all domains of the SAQ, except for the stress recognition.

Personal accomplishment - moderate magnitude correlation with teamwork climate and job satisfaction.

Despersonalization - Moderate magnitude correlation with working conditions.

CONCLUSION

- Environments favorable to nursing professional practice may result in lower level of emotional exhaustion, better quality care and a positive perception about the safety climate.
- These findings may be used by managers to assess organizational situations and implement strategies to improve the working environment and promote a positive safety climate.

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Thank You!

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