Pediatric nursing practice environment, job outcomes and safety climate: structural equation modeling approach

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Background

The environment of healthcare organizations has been identified as a determinant for the well-being of health professionals and for the achievement of patient safety (Bates et al.2009).

In pediatric units, specially, the nursing practice is embased in concept family-centred care and involves shared responsibility and decision-making with parents (Mikkelsen & Frederiksen 2011; Tallon et al. 2015). This context of pediatric hospitals, the nursing work environment can intensify the emotional exhaustion levels and interfere with the job satisfaction of nurses (Sekol & Kim 2014).

Studies have been conducted to understand the influence of the nursing practice environment in adult care units, but there is a scarcity of publications on this subject in pediatric facilities. The available findings indicate that the nursing practice environment and staff job satisfaction are predictors of the quality of care that is offered at pediatric hospitals (Wilson et al. 2012) and that patient safety is strongly related to levels of burnout among nursing staff (Jacobs et al. 2012). These studies do not assess the influence of the organizational environment in these relationships (Jacobs et al. 2012; Wilson et al. 2012) or solely evaluate the adequacy of human and material resources (Holden et al. 2011). Some studies assess the influence of the care environment on professional wellbeing and patient safety in neonatal intensive care units (Sexton et al. 2014; Rochefort & Clarke 2010), but it is difficult to integrate this information into pediatric units, considering the specificity of each one of them.
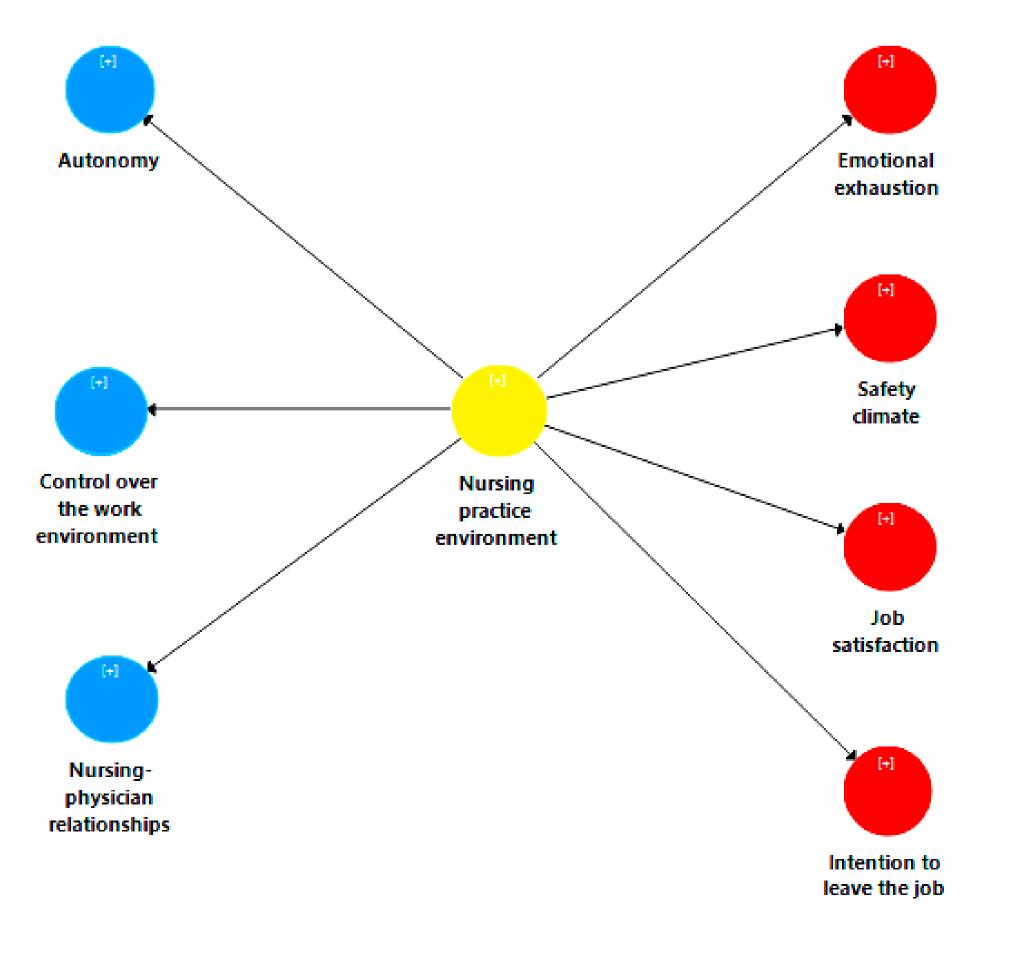
METHODS

Purpose

This study aims to assess the correlations between the nursing work environment and emotional exhaustion levels, safety climate, job satisfaction and intention to leave the profession; and to test a theoretical model of the relationships between these variables (Figure 1).

Study design and setting: a cross-sectional study in fifteen inpatient units and three intensive care units of two pediatric hospitals in Brazil. and the two hospitals together provide a total of 168 inpatient beds and 41 intensive care beds.

Population and sample: 267 professional nurses (nurses, nursing technicians, and nursing assistants directly involved in patient care. The signature on the informed consentiment was obtained. Participants were asked to complete the forms in a place that ensured their privacy, and to return them completed to the researchers within 14 days.

Data coleta, measures and statistical analysis: the sample was obtained by convenience, and data collection was performed from December 2013 to February 2014. The response rate mean rate reached 82.7%. For data collection, we used the Nursing Work Index - Revised, the Safety Attitudes Questionnaire - Short Form 2006, and the Maslach Burnout Inventory. The analysis was performed using Spearman's correlation coefficient and Structural Equation Modeling (Hair et al. 2014).

Figure 1 Theoretical model

RESULTS

Table 1 Spearman's correlation coefficient between the domains of the Nursing Work Index – Revised and emotional exhaustion, job satisfaction and safety climate variables

NWI-R	Emotional exhaustion	Job satisfaction	Safety climate
Autonomy	0.50*	-0.40*	-0.36*
Control over the work environment	0.51*	-0.28*	-0.29*
Nursing-physician relationships	0.31*	-0.25*	-0.24*
Organizational support	0.53*	-0.33*	-0.34*

* p<0,001

Table 2 Measurement model: convergent validity and internal consistency reliability

Domains	AVE*	Factor loadings	CR†	α Cronbach
Autonomy	0.52	0.41-0.83	0.84	0.76
Control over the work environment	0.52	0.55-0.80	0.87	0.81
Nursing-physician relationships	0.78	0.84-0.90	0.91	0.86
Emotional exhaustion	0.50	0.38-0.86	0.90	0.87
Safety climate	0.53	0.60-0.75	0.77	0.56
Job satisfaction	0.51	0.53-0.84	0.84	0.77

* Average Varianca Extracted

† Composite Reliability

Table 3 Measurement model: square roots of Average Variance Extracted (in the principal diagonal) and correlation between domains

Domains	Autonomy	Control over the work environment	Nursing-physician relati-	Emotional e-xhaustion	Safety climate	Job satisfaction
Autonomy	0.721					
Control over the work environment	0.712	0.723				
Nursing-physician relationships	0.649	0.515	0.882			
Emotional exhaustion	0.480	0.536	0.332	0710		
Safety climate	0.438	0.346	0.323	0.335	0.727	
Job satisfaction	0.395	0.301	0.245	0.457	0.557	0.717

Table 4 Structural model: predictive relevance (Q²), effect size (f²) and Pearson´s Coefficient of Determination (R²)

Domains	Q²	f²	R²
Autonomy	0.42	0.29	-
Control over the work environment	0.40	0.33	-
Nursing-physician relationships	0.48	0.53	-
Emotional exhaustion	0.14	0.38	0.28
Safety climate	0.09	0.08	0.18
Job satisfaction	0.06	0.28	0.13
Intention to leave the job	0.04	1.00	0.05

CONCLUSION

Autonomy, control over the work environment and relationship between nursing and medical staff are factors associated with emotional exhaustion, job satisfaction, safety climate, and intention to leave the job. Organizational investments - such as initiatives for reduction or relief of burnout, professional involvement in decision-making related to patient care, professional recognition, support of the nursing manager, and a learning through failures approach - contribute positively to the development of a favorable work environment and have significant impact on job satisfaction and safety climate.

REFERENCES

Bates, D.W. et al. (2009). Global priorities for patient safety research. BMJ (Clinical researched.), 338(may):b1775.

Hair Jr, J. et al. (2014). A primer on partial least squares structural equation modeling (PLSSEM), California: SAGE Publications.

Holden, R.J. et al. (2011). A human factors framework and study of the effect of nursing workload on patient safety and employee quality of working life. BMJ quality & safety, 20 (1):15–24.

Jacobs, L.M. et al. (2012). Burnout Among Workers in a Pediatric Health Care System. Workplace Health & Safety, 60(8):335–44.

Mikkelsen, G. & Frederiksen, K. (2011). Family-centred care of children in hospital - a concept analysis. Journal of Advanced Nursing, 67(5):1152-62.

Rochefort, C.M. & Clarke, S.P. (20100. Nurses' work environments, care rationing, job outcomes, and quality of care on neonatal units. Journal of Advanced Nursing, 66(10): 2213–24.

Sekol, M.A. & Kim, S.C. (2014). Job satisfaction, burnout, and stress among pediatric nurses in various specialty units at an acute care hospital. Journal of Nursing Education and Practice, 4(12). Available at: http://www.sciedu.ca/journal/index.php/jnep/article/view/5314

Sexton, J.B. et al. (2014). Exposure to Leadership WalkRounds in neonatal intensive care units is associated with a better patient safety culture and less caregiver burnout. BMJ Quality & Safety, 23(10):814-22.

Tallon, M.M., Kendall, G.E. & Snider, P.D. (2015). Rethinking family-centred care for the child and family in hospital. Journal of Clinical Nursing, 24(9-10):1426-35.