**Nursing Practice Environment, Quality of Care and
Morale of Hospital Nurses in Japan**

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Abstract

The purpose of this study was to describe Japanese hospital nurses' perceptions of the nursing practice environment and examine its association with nurse-reported ability to provide quality nursing care, quality of patient care and ward morale. A cross-sectional survey design was used including 223 nurses working in 12 acute inpatient wards in a large Japanese teaching hospital. Nurses rated their work environment favorably overall using the Japanese version of the Practice Environment Scale of the Nursing Work Index. Subscale scores indicated high perceptions of physician relations and quality of nursing management, but lower scores for staffing and resources. Ward nurse managers generally rated the practice environment more positively than staff nurses except for staffing and resources. Regression analyses found the practice environment was a significant predictor of quality of patient care and ward morale, whereas perceived ability to provide quality nursing care was most strongly associated with years of clinical experience. These findings support interventions to improve the nursing practice environment, particularly staffing and resource adequacy, to enhance quality of care and ward morale in Japan.

Keywords: Japan, nursing practice environment, morale, PES-NWI, quality of care, work environment.

Nursing Practice Environment, Quality of Care and Morale of Hospital Nurses in Japan

Japan is facing a critical shortage of registered nurses over the coming decade, a situation exacerbated by a rapidly ageing population and growing demands on its universal healthcare system (Japanese Nursing Association, 2011). Nursing shortages compromise the safety and quality of patient care so it is crucial that organisational determinants of nurse and patient outcomes are addressed. One significant factor that has gained increasing attention over the past decade is the nursing practice environment, defined by Lake (2002) as “the organisational characteristics of a work setting that facilitate or constrain professional nursing practice” (p. 178). There is now a growing body of international research evidence that the quality of the nursing practice environment is strongly associated with nurse outcomes (e.g., job satisfaction, burnout), patient outcomes (e.g., quality of care, failure-to-rescue, mortality) and organisational variables (e.g., staff turnover, patient safety climate) (Lake, 2007; Warshawsky & Havens, 2011). Understanding the practice environment provides the opportunity to evaluate and target areas in which change may be required to retain or attract nurses and improve patient care. Unfortunately, few Japanese studies are available and findings from international studies cannot be directly applied to the Japanese context due to notable differences in the healthcare system, nursing education and culture.

One issue is measurement of the nursing practice environment. While validated measures are available, several Japanese studies have devised their own original questionnaires to assess aspects of the hospital environment, examining associations with nurses' intention to leave or stay (Nakamura et al., 2010; Tominaga & Miki, 2010; Watanabe, Arakida & Suzuki, 2010), job satisfaction (Ono et al., 2007), burnout

(Suzumura et al., 2007) and medication errors (Arakawa, Kanoya & Sato, 2011; Sakita, Yamazaki & Togasato, 2010). Overall, Japanese nurses seem to value similar aspects of the practice environment and confront issues consistent with nurses in other countries, including a lack of nurses' participation in hospital governance, insufficient positive feedback from ward nurse managers, and insufficient nurse staffing levels. However, failure to use a validated scale makes it difficult to compare and synthesize these studies due to differences in measurement. Internationally, the Practice Environment Scale of the Nursing Work Index (PES-NWI; Lake, 2002) is the most widely reported measure used to assess nursing practice environments (Warshawsky & Havens, 2011). It has 31 items and five subscales to measure both hospital and unit level environments: (1) Nurse Participation in Hospital Affairs, (2) Nursing Foundations for Quality of Care, (3) Nurse Manager Ability, Leadership, and Support of Nurses, (4) Staffing and Resource Adequacy, and (5) Collegial Nurse-Physician Relations. A Japanese version of the PES-NWI is also available (Ogata, Nagano & Akanuma, 2008; Ogata et al., 2010).

A comprehensive review of the literature published in Japanese and English revealed only five recent studies using the PES-NWI in Japanese acute care settings (Aiken, Sloane, et al., 2011; Nagano, Ogata, Akanuma & Hashimoto, 2007; Ogata, 2010; Ogata et al., 2010; Ogata et al., 2011). Three studies reported overall composite scores ranging between 2.46 and 2.50 (possible range = 1–4), which is slightly lower than other countries (Ogata, 2010; Ogata et al., 2010; Ogata et al., 2011). Subscale scores reported in Japanese studies are also compatible with the international literature, Staffing and Resource Adequacy being scored lowest, similar to other countries (Warshawsky & Havens, 2011). Four Japanese studies found significant associations between the PES-NWI and nurse outcomes including intention to stay, frequency of

thoughts about leaving and job satisfaction (Nagano et al., 2007; Ogata, 2010; Ogata et al., 2010; Ogata et al., 2011). In contrast, Aiken, Sloane, et al. (2011) found no association with burnout or job satisfaction. Quality of the practice environment was significantly associated with nurse-reported patient care errors in one study (Ogata, 2010) and quality of care in another (Aiken, Sloane, et al., 2011). Two studies also found a significant association with nurse turnover (Ogata, 2010; Ogata et al., 2011). Taken together, these findings point to the importance of the quality of the nurse practice environment in Japanese acute care settings.

Although promising, the available data on nursing practice environments in Japan is extremely limited and there are clear gaps in the literature. Further research is needed using validated instruments to characterize the practice environment and its relationship with patient, nurse and organisational variables. The purpose of this study was to describe acute care nurses' perceptions of the nursing practice environment using the Japanese version of the PES-NWI and examine its association with nurse-reported ability to provide quality nursing care, quality of patient care and ward morale.

Methods

Sample

A cross-sectional survey was sent to a convenience sample of all nurses ($N = 341$) working in 12 acute care (i.e., medical, surgical and mixed) inpatient wards in a large teaching hospital situated in the middle of Japan. Nurses working in pediatric, psychiatric, obstetric wards and outpatient care departments were excluded. The hospital provides advanced treatment to patients, has approximately 750 beds and employs 870 nurses. In 2011 the average length of stay was 12 days. The hospital has certification from the Japan Council for Quality Health Care and was in the process of

seeking Magnet Recognition Status from the American Nurse Credentialing Centre during the survey period.

Data collection

Self-administered questionnaires with study information sheets were delivered to all potential participants that explained the voluntary nature of participation, anonymity and confidentiality of survey responses. It emphasized that ward nurse managers and executives had no access to the completed questionnaires. Nurses were instructed to complete the questionnaire at their convenience and return in a sealed envelope to a designated survey collection box on each ward within two weeks from the date of distribution. It took approximately 20 minutes to complete the questionnaire. Implied consent was assumed on return of the completed questionnaire. The study protocol was approved by both the hospital and Queensland University of Technology human research ethics committees.

Measures

The questionnaire comprised three main sections: nurses' demographic and work-related characteristics, their perception of the nursing practice environment using the Japanese version of the PES-NWI, and nurse-rated ability to provide quality nursing care, quality of patient care and ward morale.

Demographics and work characteristics. Demographic items included age, gender, marital status, dependent family members and level of education. Work characteristics included nursing qualification and position, employment status, years of nursing experience, years worked in the hospital and current ward, ward specialty area (i.e., medical, surgical, mixed), usual nurse-patient ratio, hours of overtime worked in

the previous week, type of shift work (2 or 3 rotating shifts) and number of shifts rostered for that month (for day, evening, night shifts).

Practice Environment Scale of the Nursing Work Index (PES-NWI). The Japanese version of the PES-NWI (Ogata et al., 2008) includes 31 items requiring nurses to indicate the extent to which certain work environment attributes were present in their current job using a Likert-type scale ranging from 1 (*strongly disagree*) to 4 (*strongly agree*). From the PES-NWI, five subscales were calculated: Nurse Participation in Hospital Affairs; Nursing Foundations for Quality of Care; Nurse Manager Ability, Leadership and Support; Staffing and Resource Adequacy; and Collegial Nurse–Physician Relations. A composite score was calculated to represent an overall measure of the practice environment. The possible range of composite and subscale scores is from 1 to 4, with higher scores reflecting higher quality of the nursing practice environment. According to Lake and Friese (2006) the practice environment can be classified as *favorable* if scores exceeded 2.5 (the theoretical midpoint) on four or five subscales, *mixed* if scores exceeded 2.5 on two or three subscales, and *unfavorable* if none or only one of the five subscales exceeded a mean score of 2.5. Both the original and Japanese versions of the PES-NWI have demonstrated excellent reliability and validity in acute care settings (Bonnetterre et al., 2008; Lake, 2002; Ogata et al., 2008). In the current study, the PES-NWI demonstrated high internal reliability for the composite score ($\alpha = .92$) and five subscales ($\alpha = .77$ to $.84$).

Ability to provide quality nursing care, quality of care and ward morale.

This study used single-item measures of the three study outcomes. Nurses were asked to rate their ability to provide quality nursing care on a 4-point Likert scale from *strongly disagree* to *strongly agree*; an 11-point scale was used by nurses to rate both the quality

of patient care (0 = *poor*, 10 = *excellent*) and ward morale (0 = *very low*, 10 = *very high*) on their ward.

Data analysis

Survey data was entered into SPSS (version 18) and screened for accuracy and missing values. There was very little missing data with less than 5% for all variables, except for approximately 10% for number of shifts. One respondent with missing data for all items of the PES-NWI was omitted from the following analyses. Data collected about number of day, evening and night shifts were used to create two new variables that were more informative: the number of total shifts and the percentage of day shifts per total shifts.

Descriptive statistics were used to summarize sample characteristics and describe the nursing practice environment. The composite and five subscale scores of the PES-NWI were calculated according to Lake's (2002) original instructions. The scores for all items in each subscale were averaged for each respondent and the mean score of all subscale scores was calculated as the composite score of the PES-NWI.

Bivariate associations between sample characteristics and PES-NWI scores were examined using independent *t*-tests, ANOVAs and Pearson's correlations. Finally, the associations between PES-NWI scores and ability to provide quality nursing care, quality of patient care and ward morale were examined using Pearson's correlations, followed by hierarchical multiple regression analyses which controlled for nurses' demographic and work characteristics. In each regression, variables were entered in three blocks: demographics (gender, years working as a nurse, education), work characteristics (position, shift type, number of total shifts, percentage of day shifts,

hours of overtime work, number of patients in day shifts), and finally the five PES-NWI subscales. For all analyses, the level of statistical significance was $p < .05$.

Results

Sample characteristics

Of the 341 questionnaires distributed, 223 were completed yielding a 65.7% response rate. The sample was typical of the Japanese nursing workforce (see Table 1), the majority being female (96.0%), qualified as a registered nurse (98.7%), working full-time (96.4%) and employed as a staff nurse (80.3%). In addition, more than half of the sample were aged between 20 and 29 (58.3%), single (67.3%) and lived without dependent family members (71.3%). Approximately half of the sample had bachelor level nursing education (47.5%), while only 3 respondents had completed postgraduate education. The sample included nurses with a range of clinical experience and length of service in their hospital and current ward. Most nurses reported working overtime in the previous week, with a significant minority (28.2%) working more than 10 hours. The majority of the sample (88.3%) had a typical patient load of 7 or more during a normal day shift. Most worked a 3 rotating shift roster (70.9%), an average total of 18.2 (SD $\pm$ 2.9) shifts per month, most being day shifts (59.0%).

Nursing practice environment

Summary statistics for the PES-NWI and three study outcome variables are presented in Table 2. The mean composite score of the PES-NWI was 2.61 (SD $\pm$ 0.35) on a 4-point scale. Four of the five mean subscale scores were above the midpoint of 2.5 indicating a favorable work environment overall (Lake & Friese, 2006). The highest mean subscale scores were for Collegial Nurse-Physician Relations (2.84) and Nurse Manager Ability, Leadership, and Support of Nurses (2.82). The only subscale to fall

below the mid-point was Staffing and Resource Adequacy (1.94). Nurse-rated ability to provide quality nursing care was 2.4 ($SD \pm 0.6$) on a 4-point scale. The mean scores for quality of patient care and ward morale were 5.6 ($SD \pm 1.8$) and 5.0 ($SD \pm 1.9$) on an 11-point scale respectively.

Associations between nurse and work characteristics and PES-NWI

No significant bivariate associations were found between the PES-NWI composite or subscale scores and nurse demographics. When associations with work characteristics were examined, only nurse position and shift work schedules were found to be significant. Except for Staffing and Resource Adequacy, ward nurse managers rated the practice environment significantly higher compared to staff nurses (all p values $< .05$) for Nurse Participation in Hospital Affairs (means = 3.00 vs. 2.65), Nurse Foundations for Quality of Care (2.92 vs. 2.71), Nurse Manager Ability, Leadership and Support (3.08 vs. 2.76) and Collegial Nurse-Physician Relations (2.99 vs. 2.80). Nurses who worked 3 rotating shifts perceived greater Nurse Manager Ability, Leadership, and Support of Nurses ($p = .03$) compared to 2 rotating shifts. Working a greater percentage of day shifts was significantly, although weakly, positively correlated with Nurse Manager Ability, Leadership and Support of Nurses ($r = .14, p = .04$) and Collegial Nurse-Physician Relations ($r = .19, p = .005$).

Associations among PES-NWI, ability to provide quality nursing care, quality of patient care and ward morale

Zero-order correlations between nurses' perceptions of the nursing practice environment and ability to provide quality nursing care, quality of patient care and ward morale are presented in Table 3. The pattern of findings show that as the quality of the nursing practice environment increases, nurses report greater morale ($r = .44, p < .001$),

quality of patient care ($r = .36, p < .001$) and ability to provide quality nursing care ($r = .20, p = .003$). Regression analyses which controlled for nurses' demographic and work characteristics generally confirmed these findings and are presented in Table 4. The nurse practice environment explained the greatest amount of variance (13–14%) in both quality of patient care and ward morale. Inspection of regression coefficients revealed that Staffing and Resource Adequacy was significantly related with both quality of care ($\beta = .18, p = .02$) and ward morale ($\beta = .17, p = .03$). Having less than 5 years' nursing experience ($\beta = -.24, p = .03$) and Nursing Foundation for Quality of Care ($\beta = .26, p = .02$) were also significant predictors of quality of care. In contrast, the strongest predictor of nurses' ability to provide quality care was having less than 5 years' nursing experience ($\beta = -.47, p < .001$). Work characteristics and the practice environment scale made modest contributions to explained variance, although percentage of day shifts ($\beta = -.14, p = .04$) and Nurse Participation in Hospital Affairs ($\beta = -.24, p = 0.04$) were significantly related to lower nurse-rated ability to provide quality care. The latter appears to be acting as a suppressor variable in this model (Tabachnick & Fidell, 2007).

Discussion

This study examined Japanese hospital nurses' perceptions of the nursing practice environment and its associations with nurse-reported ability to provide quality nursing care, quality of patient care and ward morale. After controlling for nurses' demographic and work characteristics, we have shown that the quality of the practice environment is correlated with nurse-rated patient care and organisational outcomes in the Japanese acute care setting. Our findings support interventions to improve the nursing practice environment, particularly staffing and resource adequacy, to enhance quality of care and ward morale in Japan. They also point to the need for targeted

support and development of acute care nurses during their transition to practice and early career to improve their ability to provide quality nursing care.

Nurses in this study rated their work environment favorably overall according to Lake and Friese's (2006) scoring classification. The PES-NWI composite score of 2.61 reported here is higher than previous Japanese studies (Ogata, 2010; Ogata et al., 2010; Ogata et al., 2011) which may reflect the fact that the hospital has been in the process of seeking Magnet status since 2008. Intervention studies in other countries have demonstrated that the process of achieving Magnet status improved qualities of nursing practice environments (Aiken, Buchan, Ball & Rafferty, 2008; Aiken & Poghosyan, 2009). Hence, this finding highlights the importance of nurse executives and managers having active roles in fostering higher quality practice environments. Furthermore, the findings of this study suggest that the application of Magnet standards could be an effective strategy for other Japanese hospitals. The finding that Staffing and Resource Adequacy was scored the lowest of the subscales is consistent with existing Japanese studies (Aiken, Sloane et al., 2011; Ogata, 2010; Ogata et al., 2010; Ogata et al., 2011), as well as international data (Warshawsky & Havens, 2011). That Japanese nurses have consistently identified staffing and resources as inadequate should prompt serious efforts by hospital management and policy makers to improve nurse staffing and working conditions.

This study found that ward nurse managers were more likely to rate each aspect of the practice environment higher compared to staff nurses, with the exception of staffing and resources. This may be because ward nurse managers are more likely to be involved in managing and controlling the quality of the nursing practice environment. For example, one study found that nurses' perception of the practice environment

improved after participating in quality improvement activities (Hall, Doran & Pink, 2008). Other studies have also found that ward nurse managers and staff nurses perceive aspects of the work environment differently (Gormley, 2011; Tezuka & Sato, 2007; Tsukamoto, Yuki, Funaki, Tanaka & Yamaguchi, 2009), highlighting the need to involve all staff when evaluating the practice environment. Nurses' perceptions of ward nurse managers and physicians also tended to be more positive when they worked more day shifts, a finding that may reflect nurses' expectation for ward nurse managers to be visible and available for consultation and to provide positive feedback or rewards (Cummings et al., 2010; Eneh, Vehvilainen-Julkunen & Kvist, 2012). Indeed, Kleinman (2004) found that the less interaction staff nurses have with managers, the less favorable they perceived their leadership style.

Staffing and Resource Adequacy emerged as a significant predictor of both nurse-rated quality of patient care and ward morale in this study. This supports a previous work which demonstrated that in Japanese hospitals with lower scores of Staffing and Resource Adequacy, nurses were more likely to rate the quality of care as poor (Kanai-Pak, Aiken, Sloane & Poghosyan, 2008). Although we measured nurse-reported quality of care, there is a large and growing body of international evidence that nurse staffing levels are related to patient outcomes using objective measures such as patient mortality, failure-to-rescue rates and healthcare-associated infections (Aiken, Cimiotti et al., 2011; Blegen et al., 2011; Harless & Mark, 2010; Kane, Shamliyan, Mueller, Duval & Wilt, 2007; Needleman et al., 2011). To date, however, only three studies have examined associations between nurse staffing and patient outcomes in Japan (Oku, Ota, Koba, Yasui & Ibe, 2006; Ota, Oku, Koba, Yasui & Ibe, 2006; Yasukawa, 2008). Nurse staffing and patient care provision have been associated with

organisational morale and it has been suggested that since nurses value providing quality care to patients, being unable to do so because of insufficient staffing could lower ward morale (Day, Minichiello & Madison, 2006; Day, Minichiello & Madison, 2007a, 2007b). Low morale is also associated with negative nurse outcomes including burnout and nursing turnover (Cox, 2001; Tsukamoto & Nomura, 2007).

We also found that quality of patient care was higher when nurses perceived that the Nursing Foundations for Quality of Care were present in their current job. This subscale emphasizes the nursing foundations for a high standard of patient care such as a pervasive nursing philosophy, a nursing (rather than a medical) model of care, and nurses' clinical competence (Lake, 2002). Interestingly, findings relating to this subscale in the literature have been mixed. Ulrich et al. (2006) demonstrated that the availability of educational opportunities was associated with nurses' perceptions of the quality of care in the US. On the other hand, a Canadian study observed no significant association (McCusker, Dendukuri, Cardinal, Laplante & Bambonye, 2004) and another Canadian study revealed that Nursing Foundation for Quality of Care influenced quality of care through Staffing and Resource Adequacy (Spence Laschinger, 2008). However, the finding of the direct association between quality of care and the subscale score of Nursing Foundation for Quality of Care seems to be reasonable, considering the meaning of the subscale and included items. In turn, this finding indicates that these quality assurance systems were valued by Japanese nurses as promoting quality of care in that hospital.

An important finding in this study was that having less than 5 years' nursing experience was the strongest predictor of ability to provide quality nursing care. Moreover, it emerged as a significant predictor of nurse-rated quality of patient care.

The finding is similar to another Japanese study, which demonstrated that nurses in hospitals where 50% have less than four years' nursing experience were twice as likely to report lower quality of care as those with 20% (Kanai-Pak et al., 2008). It seems reasonable that less experienced nurses tend to score their ability lower than more experienced nurses. However, it should be noted that lower perceived ability to provide quality care has been associated with job dissatisfaction (Hayes, Bonner & Pryor, 2010) and intention to leave (Hayes et al., 2012), particularly among less experienced nurses. Thus, this finding has implications for nurse retention. Mentoring and positive feedback from more experienced clinical nurses and ward nurse managers may assist nurses early in their career to value their contribution to quality nursing care in the ward and recognize that they play an important role in a healthcare team. In Japan, it was legislated in 2009 that hospitals are responsible for providing postgraduate clinical training programs for newly graduated nurses. These guidelines based on legislation encourage support and mentoring of graduate nurses (Ministry of Health, Labour and Welfare, 2010). Nurse educators in the academy should also consider the importance of transition to practice components at the final stages of bachelor of nursing courses.

Limitations

While this study has identified some important associations between the nursing practice environment and outcome variables, the cross-sectional research design does not allow causal inferences to be made. Experimental research is needed to confirm the direction of these relationships and identify practical interventions to improve the nursing practice environment. A limitation of this study was convenience sampling from a single hospital which limits the generalisability of these findings. Another limitation was the reliance on self-report measures for both the nursing practice environment and

outcome variables which may introduce shared method variance. However, we decided to use a brief self-administered survey in order to improve the response rate and reduce respondent burden.

Conclusion

We found the nursing practice environment was a significant predictor of patient and organisational outcomes in a Japanese acute care setting. These findings support interventions to improve the nursing practice environment, particularly staffing and resource adequacy, to enhance quality of patient care and ward morale in Japan. Ward nurse managers and executives have a crucial role in fostering a quality nurse practice environment and the application of Magnet Hospital standards could be a practical intervention to improve staff and patient outcomes. Our findings also reinforce the need for Japanese policy makers and hospital administrators to improve nurse staffing and working conditions in acute care settings. Having enough staff to accomplish nursing work and provide quality care, enough time to discuss patient care problems with other nurses, or enough support for nurses to spend time with patients were important issues facing nurses in this study. While challenging, solutions to the growing problem of nursing shortages in Japan are needed. We support a greater focus on improving the quality of nursing practice environments as a key component of any strategy.

Contributions

Study Design: EA, AB, CD.

Data Collection and Analysis: EA, CD, AB.

Manuscript Writing: CD, EA, AB.

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Tables

Table 1: Sample demographic and work characteristics (N = 223)

Characteristics	<i>n</i>	%
Age		
20-29	130	58.3
30-39	64	28.7
40-49	25	11.2
50-59	4	1.8
Gender		
Male	8	3.6
Female	214	96.0
Marital status		
Married	72	32.3
Single	150	67.3
Dependent family members		
None	159	71.3
Children	53	23.8
Elderly or disabled	15	6.7
Highest level of nursing education		
3-year technical school or college	107	48.0
Bachelor	106	47.5
Postgraduate	3	1.3
Nursing qualification		
Registered nurse	220	98.7
Enrolled nurse	2	0.9
Certified nurse	1	0.4
Years of nursing experience		
≤ 4	88	39.5
5-9	58	26.0
≥ 10	70	31.4
Years worked in the hospital		
≤ 4	100	44.8

5-9	50	22.4
≥ 10	65	29.1
Years worked in the current ward		
≤ 4	160	71.7
5-9	40	17.9
≥ 10	16	7.2
Position		
Staff nurse	179	80.3
Ward Nurse Manager	36	16.1
Ward type		
Medical	47	21.1
Surgical	83	37.2
Mixed	85	38.1
Employment status		
Full-time	215	96.4
Part-time	0	0
Casual	1	0.4
Hours overtime during previous week		
< 5	64	28.7
5-9	95	42.6
10-14	38	17.0
≥ 15	25	11.2
Number of patients in usual day shift		
< 5	4	1.8
5	0	0
6	14	6.3
≥ 7	197	88.3
Shift type		
3-rotating shift	158	70.9
2-rotating shift	55	24.7

Note. Some percentages do not equal 100% due to missing data.

Table 2: Descriptive statistics for main study variables

Measure	Mean	SD	Possible range	Actual range	α
PES–NWI					
Nurse Participation in Hospital Affairs	2.71	0.43	1–4	1.22–4.00	.80
Nursing Foundations for Quality of Care	2.75	0.41	1–4	1.30–4.00	.83
Nurse Manager Ability, Leadership, and Support of Nurses	2.82	0.53	1–4	1.20–4.00	.84
Staffing and Resource Adequacy	1.94	0.48	1–4	1.00–3.00	.77
Collegial Nurse-Physician Relations	2.84	0.44	1–4	1.00–4.00	.78
Composite score	2.61	0.35	1–4	1.50–3.57	.92
Ability to Provide Quality Nursing Care	2.4	0.6	1–4	1–4	
Quality of Patient Care	5.6	1.8	0–10	1–9	
Ward Morale	5.0	1.9	0–10	1–9	

Table 3: Correlations between PES-NWI and ability to provide quality nursing care, quality of nursing care and ward morale

PES-NWI	Ability to Provide Quality Nursing Care	Quality of Patient Care	Ward Morale
Nurse Participation in Hospital Affairs	.16 [*]	.29 ^{**}	.36 ^{**}
Nursing Foundations for Quality of Care	.17 ^{**}	.36 ^{**}	.37 ^{**}
Nurse Manager Ability, Leadership, and Support of Nurses	.16 [*]	.21 ^{**}	.30 ^{**}
Staffing and Resource Adequacy	.08	.29 ^{**}	.33 ^{**}
Collegial Nurse-Physician Relations	.18 ^{**}	.25 ^{**}	.34 ^{**}
Composite score	.20 ^{**}	.36 ^{**}	.44 ^{**}

Note. * $p < .05$, ** $p < .01$

Table 4: Hierarchical multiple regression analyses predicting outcome variables

Step	Predictor	Ability to Provide Quality Nursing Care		Quality of Patient Care		Ward Morale	
		β	ΔR^2	β	ΔR^2	β	ΔR^2
1. Demographic characteristics	Gender	.06		.08		.06	
	< 5 y nursing experience	-.47**		-.24*		.12	
	5–9 y nursing experience	-.09		-.06		.09	
	Bachelor degree	.01	.21**	.12	.06*	.05	.00
2. Work characteristics	Nurse manager position	.09		.13		.17	
	Shift type	.09		.09		-.02	
	Number of total shifts	.10		.11		.02	
	Percentage of day shifts	-.14*		-.03		.03	
	< 5 h overtime	.01		.08		-.06	
	5–9 h overtime	-.09		.00		-.11	
	10–14 h overtime	-.08		.00		-.10	
	Number of patients on day shift	.02	.03	-.05	.06	-.07	.10*
3. PES-NWI subscales	Nurse Participation in Hospital Affairs	-.24*		-.11		.03	
	Nursing Foundations for Quality of Care	.19		.26*		.08	
	Nurse Manager Ability, Leadership, and Support of Nurses	.14		.04		.10	
	Staffing and Resource Adequacy	.04		.18*		.17*	
	Collegial Nurse-Physician Relations	.12	.05*	.08	.13**	.15	.14**
Total R^2			.30**		.26**		.25**

Note. * $p < .05$, ** $p < .01$