



HEALTH POLICY AND SYSTEMS

Jordanian Nursing Work Environments, Intent to Stay, and Job Satisfaction

Zaid Al-Hamdan, RN, PhD¹, Milisa Manojlovich, PhD, RN, CCRN², & Banerjee Tanima, MS³

¹ Xi Alpha, Associate Professor, Faculty of Nursing, Jordan University of Science and Technology, Irbid, Jordan

² Rho, Associate professor, School of Nursing, University of Michigan, Ann Arbor, MI, USA

³ Statistician, School of Nursing, University of Michigan, Ann Arbor, MI, USA

Key words

Intent to stay, Jordan, nurse job satisfaction, nursing work environment

Correspondence

Dr. Zaid Al-Hamdan, Faculty of Nursing, Jordan University of Science and Technology, P.O. Box 3030, Irbid 22110, Jordan.

E-mail: zmhamdan@just.edu.jo

Accepted October 3, 2016

doi: 10.1111/jnu.12265

Author Zaid Al-Hamdan's email was originally listed as zaid_hamdan@hotmail.com. It has been updated to zmhamdan@just.edu.jo.

Abstract

Purpose: The purpose of this study was to examine associations among the nursing work environment, nurse job satisfaction, and intent to stay for nurses who practice in hospitals in Jordan.

Design: A quantitative descriptive cross-sectional survey design was used.

Methods: Data were collected through survey questionnaires distributed to 650 registered nurses (RNs) who worked in three hospitals in Jordan. The self-report questionnaire consisted of three instruments and demographic questions. The instruments were the Practice Environment Scale of the Nursing Work Index (PES-NWI), the McCain Intent to Stay scale, and Quinn and Shepard's (1974) Global Job Satisfaction survey. Descriptive statistics were calculated for discrete measures of demographic characteristics of the study participants. Multivariate linear regression models were used to explore relationships among the nursing work environment, job satisfaction, and intent to stay, adjusting for unit type.

Findings: There was a positive association between nurses' job satisfaction and the nursing work environment ($t = 6.42, p < .001$). For each one-unit increase in the total score of the PES-NWI, nurses' average job satisfaction increased by 1.3 points, controlling for other factors. Overall, nurses employed in public hospitals were more satisfied than those working in teaching hospitals. The nursing work environment was positively associated with nurses' intent to stay ($t = 4.83, p < .001$). The Intent to Stay score increased by 3.6 points for every one-unit increase in the total PES-NWI score on average. The highest Intent to Stay scores were reported by nurses from public hospitals.

Conclusions: The work environment was positively associated with nurses' intent to stay and job satisfaction. More attention should be paid to create positive work environments to increase job satisfaction for nurses and increase their intent to stay.

Clinical Relevance: Hospital and nurse managers and healthcare policymakers urgently need to create satisfactory work environments supporting nursing practice in order to increase nurses' job satisfaction and intent to stay.

An increasing body of research has linked poor nursing work environments to poor nurse outcomes in general (Institute of Medicine, 2004). Nursing job satisfaction and intent to stay are two specific nurse outcomes associated

with the nursing work environment (Manojlovich & Laschinger, 2002; Nedd, 2006). An ongoing focus on these two nursing outcomes is needed because of the current nursing shortage, which has now spread

internationally. Jordan, like other countries, has an inadequate supply of nurses in part because of a high nurse migration rate to countries with more favorable conditions such as the Gulf Cooperation Council countries (Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and United Arab Emirates) as well as other developed countries. In Jordan the nurse turnover rate may be as high as 36.6%, and this percentage is expected to increase (Hayajneh, AbuAlRub, Athamneh, & Almakhzoomy, 2009). The majority of Jordanian nurses work for 2 years in Jordan to gain experience before moving on to work in Gulf countries (especially Saudi Arabia, United Arab Emirates, Kuwait, and Qatar), where the pay is much higher; those countries require at least 2 years of experience (Hayajneh et al., 2009). Moreover, Jordan now faces new challenges far different from any other nearby country. Jordan is experiencing a big jump in its population census because of the "Arab Spring" movement followed by an influx of refugees, putting heavy pressure on the healthcare system and posing a question regarding the nature of healthcare services provided.

Jordan is a small, limited- and middle-income country. It is a kingdom situated in the Middle East with an estimated total population of 6.5 million people. The health system in Jordan consists of a complicated amalgam of private and public sectors. There are 31 public hospitals, 12 military hospitals, 2 teaching hospitals (university affiliated), and 61 private hospitals. The public sector is composed of Ministry of Health (MOH) hospitals, Royal Medical Services, and university-affiliated hospitals; this sector has scarce resources to optimize health care, but it serves the biggest portion of the population (MOH, 2013). The private sector, which is held by for-profit companies and stakeholders, is well resourced and covers the population who pay in cash or by medical insurance. Total health expenditures for 2012 represented 9.12% of the gross domestic product. The private sector is the largest source of health funding (47%), followed by the public sector (45%) and donors (8%; MOH, 2013).

The nursing profession in Jordan has made impressive improvements towards developing role adequacy over the past 50 years. Presently, there is quite a good national system of educational preparation of nurses, with the bachelor of science in nursing (BSN) degree providing the only point of entry to the profession (Shuriquie, While, & Fitzpatrick, 2008). The language of education for professional nursing programs is English, the educators are generally Western-educated Arab nurses, and the textbooks are in English. The total population of Jordanian registered nurses (RNs) is about 30,000, with around 14,500 nurses working in Jordan and others either unemployed or emigrants to other countries. About half (51%) of Jordanian nurses are male, and annually the total

number of nurses increases by around 1,500 nurses. There are 27.6 nurses for every 10,000 people (MOH, 2015). The nurse:patient ratio varies from public to private hospitals and also from critical care to general wards. In critical care wards, the ratio is 1:1 in private hospitals and 1:2 in public hospitals, but in medical surgical wards the nurse:patient ratio varies from 1:6 in private to 1:12 in public hospitals.

Thus, the context of the Jordanian healthcare system may pose unique challenges for nurses depending on the type of hospital in which they work. While relationships between hospital work environments and nurse outcomes have been well described in North American, Asian, and European contexts, we know little about these relationships in Jordan. The ongoing nursing shortage and increasing demands for health care in Jordan makes it important to understand the effect of the work environment on nurses' job satisfaction and intent to stay.

Review of the Literature

Few studies have examined relationships between the nursing work environment and nurse outcomes in Jordan, but even studies conducted in other countries with different cultures have all concluded that there is an effect of the nursing work environment on nurse outcomes. Aiken and colleagues conducted a large study in the United States (10,184 nurses and 232,342 surgical patients recruited from 168 hospitals) and concluded that there was a positive relationship between healthy work environments and nurse outcomes that included job satisfaction, intention to leave, and burnout (Aiken, Clarke, Sloane, Lake, & Cheney, 2008).

Rocheftort and Clarke (2010) examined the nursing work environment and its association with nurse outcomes such as emotional exhaustion, job satisfaction, and nurse perceptions of the quality of care provided. This study reported that the nursing work environment had a strong effect on nurse outcomes and recommended that to improve these outcomes, more frequent assessment and systematic evaluation of the nursing work environment should be conducted. These findings suggest that conditions in the work environment may change over time and are amenable to intervention for improvement (Rocheftort & Clarke, 2010). Another American study assessed relationships among the nursing work environment, nurse turnover, and intention to leave (Friese, 2005). Nurses who perceived their work environment as negative had higher intention to leave their jobs. In addition, significant correlations were found between the nursing work environment, intention to leave, and nurse turnover (Friese, 2005).

In European countries, many studies have investigated the relationship between the nursing work environment and nurse-reported outcomes of job satisfaction and retention. For example, favorable evaluations of resource adequacy and management support, components of a healthy work environment, have had a positive association with nurse outcomes in several studies (Tervo-Heikkinen, Partanen, Aalto, & Vehviläinen-Julkunen, 2008; Van Bogaert, Kowalski, Weeks, & Clarke, 2013). In China, Liu et al. (2012) examined the relationship of the nursing work environment and nurse outcomes in a cross-sectional survey of 1,104 registered nurses in 21 hospitals. The results highlighted the inverse association between the nursing work environment and nurses' satisfaction and job-related burnout (Liu et al., 2012).

In the Eastern Mediterranean Region (EMR), two papers have focused on the nursing work environment. First in Lebanon, a study conducted by El-Jardali et al. (2011) indicated an undeniably negative and significant correlation between the nursing work environment and intention to leave among nurses in 69 Lebanese hospitals. This study provides additional evidence for the important role of the nursing work environment on nurses' intention to leave their positions. According to these Lebanese nurses, their nursing professional development and career control were the most important challenges that threatened the nursing work environment, suggesting possible intervention targets (El-Jardali et al., 2011). In the second study, conducted in Jordan, AbuAlRub, El-Jardali, Jamal, and Al-Rub (2016) examined relationships between the nursing work environment and job satisfaction and intent to stay, specifically in underserved areas in Jordan. The results showed positive significant relationships between healthy work environments and nurse outcomes of job satisfaction and intent to stay (AbuAlRub et al., 2016).

Although the nursing work environment has been conceptualized and studied in many ways, we decided to use Lake's definition: organizational characteristics of a work setting that facilitate or constrain professional nursing practice (Lake, 2002, p. 178). The nursing work environment is a multifactorial construct consisting of five characteristics: nurse participation in hospital affairs; nursing foundations for quality of care; nurse manager ability, leadership, and support; staffing and resource adequacy; and collegial relationships between physicians and nurses. We were drawn to this conceptualization because each of the five characteristics can be amenable to intervention for improvement, and the scale used to measure the work environment, the Practice Environment Scale of the Nursing Work Index (PES-NWI), has been used globally (Warshawsky & Havens, 2011).

Aims

In summary, while in North American, Asian, and European countries there is a robust body of literature demonstrating associations among nurses' work environments, job satisfaction, and intent to stay, we know less about these relationships in countries in the Middle East, specifically Jordan. The work environment has been shown to be amenable to intervention for improvement in other countries, which may be transferrable to the Jordanian context. We asked the following research question: What are the associations among the nursing work environment, nurse job satisfaction, and intent to stay for nurses who practice in hospitals in Jordan?

Methods

Design

This study used a descriptive, cross-sectional survey design.

Participants

The population included all RNs working on inpatient units in three hospitals: one public and one private hospital in Amman, and one teaching hospital in Irbid, Jordan. To be included in the study, nurses had to be RNs who had at least 1 year of experience and who worked in a clinical unit. We conducted a power analysis according to Cohen's Statistical Power Primer (Cohen, 1992). There are three sectors (public, private, and teaching hospitals), and to detect significant differences between responses of nurses who worked in the three sectors we needed a minimum of 52 participants from each sector (for a total of 156 participants) to achieve 80% power to detect a medium population effect size and two-sided alpha of 0.05. We chose to recruit more than the minimum number of participants needed to account for non-respondents and possibly missing data. The target study population was 1,000 RNs; of those, 350 either did not meet the inclusion criteria or were on annual leave. Convenience sampling was used to recruit all 650 eligible nurses who were employed during the data collection period.

Measures

A self-report questionnaire was used and consisted of three instruments and demographic questions. The instruments were the PES-NWI, the McCain Intent to Stay scale, and Quinn and Shepard's (1974) Global Job Satisfaction survey.

PES-NWI. The PES-NWI measures various aspects of nurses' work environments and consists of five dimensions: nurse participation in hospital affairs (9 items), nurse foundations for quality care (10 items), nurse managers' ability and leadership and support of nurses (5 items), staffing and resource adequacy (4 items), and collegial nurse-physician relationships (3 items). This instrument uses a 4-point Likert-type scale (*strongly agree* = 1 to *strongly disagree* = 4). A mean score of 2.5 or greater on four or five subscales indicates that nurses have appropriate perception of their practice environment. A mean score of 2.5 or more for two or three subscales indicates that nurses have neither a favorable nor an unfavorable perception of their practice environment. If none or only one of the subscales achieves a mean score of 2.5 or greater, then the nurses perceive that their work environment is unfavorable to nursing practice. The tool is considered highly reliable and valid, with international studies reporting its internal consistency reliability in the range of 0.85 to 0.95 (Liu et al., 2012; Nantsupawat et al., 2011). In the present study, the reliability coefficient (Cronbach's alpha) was 0.92.

Intent to stay. McCain's Intent to Stay scale measures an employee's intention to stay in his or her current position and contains of five items arranged on a 5-point Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Content validity of the Arabic version of McCain's Intent to Stay scale was established by experts in nursing. The Intent to Stay scale was used by AbuAlRub and colleagues (AbuAlRub, 2010; AbuAlRub, Omari, & Al-Zaru, 2009), who also studied Jordanian nurses, and reported the internal consistency of the scale to be 0.74. The Arabic version was used in the current study.

Job satisfaction. The six-item Global Job Satisfaction survey (Quinn, 1972) was used to measure job satisfaction. This instrument was originally developed by Quinn and Shepard and subsequently modified (Pond & Geyer, 1991; Rice, Phillips, & McFarlin, 1990). All six items measure an employee's general feelings about his or her job, instead of referring to any specific aspect of the job. Responses are rated on a 5-point Likert-type scale (5 = *more satisfied*), and each item uses a different anchor. The reliability coefficient (Cronbach's alpha) for the Global Job Satisfaction survey in this study was 0.86.

Reliability measures and summary statistics of the above-mentioned three instruments from the current study are described in **Table 1**. Content validity of the Arabic version of the three instruments was established by experts in nursing. The instruments were translated and back-translated by bilingual experts.

Table 1. Summary Statistics and Reliability Measures of the Instruments Used in This Study (N = 582)

Scale name	No. of items	Mean \pm SD	Range	Cronbach's alpha
PES-NWI	31	2.72 \pm 0.46	1–4	0.92
Global Job Satisfaction Survey	6	2.77 \pm 0.93	1–5	0.86
McCain's Intent to Stay Scale	5	14.10 \pm 4.28	5–25	0.74

Note. PES-NWI = Practice Environment Scale of the Nursing Work Index.

Data Collection Procedures

The first author initially met with the administrative representatives of all three hospitals to enlist their support and cooperation. Approval was obtained from the university research board.

Hospital nurses were invited to participate in this study through a packet distributed to all nurses. The questionnaire packet included a cover letter explaining the aim of the study, the three instruments, and demographic questions. To protect participant anonymity, potential respondents were asked not to write their names on or sign the questionnaire. Participants were instructed in the cover letter to return the questionnaire in a concealed envelope and submit it to the first author directly. A total of 582 of the 650 distributed questionnaires were returned, resulting in a response rate of 89.5%.

Data analysis. Descriptive statistics were calculated for discrete measures of demographic characteristics of the study participants. Of the 582 cases that were analyzed, there were no missing values for the Nursing Work Index, two cases had missing values for the Global Job Satisfaction survey, and six cases had missing values for the Intent to Stay scale. A complete case analysis approach was taken since the percentage of missing information was only 1%. Multivariate linear regression models were used to explore relationships among the nursing work environment, job satisfaction, and intent to stay, adjusting for unit (medical, surgical, maternity, critical, pediatric, or other) and hospital (private, public, or teaching) type. Initial models included two-way interaction terms: first Nursing Work Index by hospital type and then by unit type, since there is evidence that job satisfaction and intent to stay outcomes vary by hospital and unit types. Final models were determined by the Akaike information criterion, in which a smaller value indicates the better model. SAS version 9.4 (SAS Institute Inc., Cary, NC, USA) and SPSS version 22 (IBM Corp., Armonk, NY, USA) were used for all analyses. Significance was determined at $p \leq .05$.

Table 2. Demographic Characteristics of Nurses ($N = 582$)

	%
Age	
< 25 years	19.3
25–34 years	58.7
35 years or older	22.0
Gender	
Male	40.5
Female	59.5
Years of experience as a nurse	
5 years or less	31.7
6–10 years	41.4
11 years or more	26.9
Years of experiences in this current post	
5 years or less	47.2
6–10 years	36.4
11 years or more	16.4
Marital status	
Single	33.0
Married	66.7
Other	0.3
Education	
General nursing diploma	11.0
BS in nursing	81.4
Master's degree in nursing	6.0
Other	1.6
Job type	
Staff nurse	71.4
Other	28.6

Results

Demographic characteristics of the study sample are presented in **Table 2**. The study population was evenly divided by gender. The majority of nurses had BSN degrees (81.4%), with 6 years or more of job experience as nurses (68.3%), and were currently working as staff nurses (71.4%). Most of the study participants were young (25–34 years of age [58.7%]) and married (66.7%). **Table 3** depicts the multivariate linear regression results to examine the relationships of job satisfaction and intent to stay with the nursing work environment. Results were examined for interactions between the Nursing Work Index by hospital and unit type as well. The nonsignificant interaction term PES-NWI by unit type was removed from the final model, which contained the dependent variable intent to stay.

Job Satisfaction

There was a positive association between nurses' job satisfaction and the nursing work environment ($t = 6.42$, $p < .001$). For each one-unit increase in the total score of the PES-NWI, nurses' average job satisfaction increased

by 1.3 points, controlling for other factors. Overall, nurses employed in public hospitals were more satisfied than those working in teaching hospitals. Among six different hospital unit types, nurses employed in surgical units were highly satisfied, followed by nurses who worked in other departments (e.g., infection control, quality management, and continuous education departments), and pediatric units relative to critical care units. There were differences found in the nurses' job satisfaction ratings employed in the public hospitals relative to teaching hospitals at the same level of PES-NWI score. Nurses working in surgical and other units relative to critical care units reported different job satisfaction scores even if they were in a similar nursing work environment.

Intent to Stay

The nursing work environment was positively associated with nurses' intent to stay ($t = 4.83$, $p < .001$). The Intent to Stay score increased by 3.6 points for every one-unit increase in the total PES-NWI score on average. The maximum Intent to Stay score was reported by nurses from public hospitals. Unit type was not a predictor of the intent to stay outcome for this study sample. There were significant differences found in the Intent to Stay score of nurses who worked in public hospitals relative to teaching hospitals at the same level of nursing work environment score ($t = -4.29$, $p < .001$).

Discussion

The purpose of this study was to describe associations among the nursing work environment, nurse job satisfaction, and intent to stay for a sample of nurses who worked in three different types of hospitals in Jordan. We found that, in answer to our research question, the nursing work environment was a significant predictor of both job satisfaction and intent to stay. Our findings provide further support for results of similar studies conducted in other countries, suggesting that nurse perceptions of their work environment affect nurse outcomes, no matter where in the world nurses may practice (Aiken et al., 2008; El-Jardali et al., 2011; Friese, 2005; Gardner, Thomas-Hawkins, Fogg, & Latham, 2007).

Because of our large sample drawn from multiple hospital types, we were able to better understand the interaction of hospital and unit type with the nursing work environment. We used a reliable and valid measure of the nursing work environment, the PES-NWI, yet found that organizational characteristics such as hospital and unit type also had an independent influence on nurse outcomes. Other research (AbuAlRub et al., 2016) has also shown that job satisfaction and intent to stay vary

Table 3. Multivariate Linear Regression Analysis Results of Job Satisfaction and Intent to Stay

Effects	Job satisfaction			Intent to stay		
	Estimate	t value	p value	Estimate	t value	p value
Intercept	−0.59 (0.56)	−1.06	.29	4.79 (2.08)	2.3	.02
PES-NWI	1.30 (0.20)	6.42	<.0001	3.58 (0.74)	4.83	<.0001
Hospital type						
Public	2.22 (0.57)	3.87	<.001	10.08 (2.64)	3.81	<.001
Private	0.49 (0.59)	0.82	.41	1.43 (2.74)	0.52	.60
Teaching	Reference			Reference		
Unit type						
Medical	0.76 (0.60)	1.27	.21	0.69 (0.50)	1.39	.17
Surgical	2.08 (0.66)	3.16	.002	0.04 (0.54)	0.08	.94
Pediatrics	1.55 (0.68)	2.27	.02	0.78 (0.58)	1.36	.18
Maternity	0.27 (1.16)	0.23	.82	−0.73 (0.68)	−1.08	.28
Other	1.84 (0.90)	2.04	.04	0.57 (0.69)	0.82	.41
Critical	Reference			Reference		
PES-NWI by hospital type						
PES-NWI, public	−0.94 (0.21)	−4.53	<.0001	−4.09 (0.95)	−4.29	<.0001
PES-NWI, private	−0.29 (0.22)	−1.33	.19	−0.84 (1.00)	−0.84	.40
PES-NWI by unit type						
PES-NWI, medical	−0.24 (0.22)	−1.07	.29			
PES-NWI, surgical	−0.76 (0.24)	−3.17	.002			
PES-NWI, pediatrics	−0.48 (0.25)	−1.92	.06			
PES-NWI, maternity	−0.14 (0.42)	−0.34	.74			
PES-NWI, other	−0.67 (0.33)	−2.06	.04			

Note. Significant *p* values are boldfaced. PES-NWI = Practice Environment Scale of the Nursing Work Index.

by hospital and unit type, suggesting that organizational characteristics, not captured by a reliable and valid nursing work environment instrument, are important considerations in research where the nursing work environment is explored.

Our finding that nurses who worked in public hospitals were more satisfied and had higher Intent to Stay scores is interesting. In Jordan, the staff who work in public hospitals are government employees and have job security because of permanent contracts. This is in contrast to the private sector, where hospitals operate on a for-profit basis, with staff working under yearly contracts in these hospitals. It may be that the job security afforded by public hospitals contributes to job satisfaction and intent to stay. In the United States, healthcare workers in the Department of Veterans Affairs are also government employees, and in one study a comparison of Veterans Administration staff and community mental health center staff in the same city showed significantly greater job satisfaction among Veterans Administration staff (Salyers, Rollins, Kelly, Lysaker, & Williams, 2013).

Although there is substantial research that has studied job satisfaction and intent to stay jointly as nurse outcomes, our results suggest that there is justification to examine each outcome separately. Unit type was significantly associated with job satisfaction but not

intent to stay, suggesting that there is something in the way nurses' work is configured at the unit level that influences job satisfaction only, at least in Jordan. AbuAlRub and colleagues (2016) also demonstrated a relationship between work environment characteristics and job satisfaction among nurses in Jordan, although unit-level analyses were not conducted. In our sample, nurses who worked in surgical, pediatric, and "other" units had the highest job satisfaction (AbuAlRub et al., 2016). Patient care needs influence workflow and practices on various types of units, which may have an effect on nurses' job satisfaction and other variables. For example, Manojlovich and Antonakos (2008) found that unit type affected nurses' satisfaction in communicating with physicians.

In addition, it may be that intent to stay has an emotional component, whereas job satisfaction may be more influenced by organizational characteristics. Also in Jordan, AbuAlRub and colleagues (2009) noted a relationship between intent to stay and social support found in relationships at work, suggesting that an emotional component to intent to stay exists. Our results provide support for an empirically tested theoretical model which posits that intent to stay is the product of nurses' affective as well as cognitive responses to their work

environments. Cowden and Cummings (2012) suggest that greater acknowledgement of the emotional component of nurses' work lives is needed because it influences decision making.

Our study has some important limitations. This was a cross-sectional exploration of relationships, so we are unable to establish causality and must be careful not to infer that changes in the nursing work environment caused changes in job satisfaction or intent to stay. The use of a survey design means that all of our measures were self-reported and may not reflect actual work environment characteristics. However, self-report is the only way to determine job satisfaction and intent to stay. Our sample, albeit a large one, was drawn from only two cities in Jordan, so our results are not widely generalizable.

Conclusion and Implications

The present study found significant associations between the nursing work environment and nurse outcomes of intent to stay and job satisfaction, with important nuances. Whereas hospital and unit type were both significantly associated with nurses' job satisfaction, only hospital type was associated with nurses' intent to stay. Our findings suggest that, as in other countries, a positive work environment will increase the job satisfaction and intent to stay of Jordanian nurses. Given the high nurse turnover rate in Jordan, and costs of hiring new nurses to replace those who have left, Jordanian healthcare managers and policymakers should be encouraged to take action to improve working conditions for nurses while paying attention to nurses' emotional responses to increase nurse satisfaction and keep them in the profession.

Clinical Resources

- International Council of Nurses fact sheets on Human Resources, Planning & Development: <http://www.icn.ch/publications/fact-sheets/>
- U.S. Department of Health and Human Services, Hospital Compare: <http://www.hospitalcompare.hhs.gov>

References

AbuAlRub, R. F. (2010). Work and non-work social support and intent to stay at work among Jordanian hospital nurses. *International Nursing Review*, 57(2), 195–201.

AbuAlRub, R. F., El-Jardali, F., Jamal, D., & Al-Rub, N. A. (2016). Exploring the relationship between work environment, job satisfaction, and intent to stay of Jordanian nurses in underserved areas. *Applied Nursing Research*, 31, 19–23.

AbuAlRub, R. F., Omari, F. H., & Al-Zaru, I. M. (2009). Support, satisfaction and retention among Jordanian nurses in private and public hospitals. *International Nursing Review*, 56(3), 326–332.

Aiken, L. H., Clarke, S. P., Sloane, D., Lake, E. T., & Cheney, T. (2008). Effects of hospital care environment on patient mortality and nurse outcomes. *Journal of Nursing Administration*, 38(5), 223–229.

Cohen, J. (1992). A power primer. *Psychological Bulletin*, 112(1), 155–159.

Cowden, T. L., & Cummings, G. G. (2012). Nursing theory and concept development: A theoretical model of clinical nurses' intentions to stay in their current positions. *Journal of Advanced Nursing*, 68(7), 1646–1657.

El-Jardali, F., Alameddine, M., Dumit, N., Dimassi, H., Jamal, D., & Maalouf, S. (2011). Nurses' work environment and intent to leave in Lebanese hospitals: Implications for policy and practice. *International Journal of Nursing Studies*, 48(2), 204–214.

Friese, C. R. (2005). Nurse practice environments and outcomes: Implications for oncology nursing. *Oncology Nursing Forum*, 32, 765–772.

Gardner, J. K., Thomas-Hawkins, C., Fogg, L., & Latham, C. E. (2007). The relationships between nurses' perceptions of the hemodialysis unit work environment and nurse turnover, patient satisfaction, and hospitalizations. *Nephrology Nursing Journal*, 34(3), 271–281.

Hayajneh, Y. A., AbuAlRub, R. F., Athamneh, A. Z., & Almahzomy, I. K. (2009). Turnover rate among registered nurses in Jordanian hospitals: An exploratory study. *International Journal of Nursing Practice*, 15(4), 303–310.

Institute of Medicine. (2004). *Keeping patients safe: Transforming the work environment of nurses*. Washington, DC: National Academy Press.

Lake, E. T. (2002). Development of the practice environment scale of the nursing work index. *Research in Nursing & Health*, 25(3), 176–188.

Liu, K., You, L.-M., Chen, S.-X., Hao, Y.-T., Zhu, X.-W., Zhang, L.-F., & Aiken, L. H. (2012). The relationship between hospital work environment and nurse outcomes in Guangdong, China: A nurse questionnaire survey. *Journal of Clinical Nursing*, 21(9–10), 1476–1485.

Manojlovich, M., & Antonakos, C. (2008). Satisfaction of intensive care unit nurses with nurse-physician communication. *Journal of Nursing Administration*, 38(5), 237–243.

Manojlovich, M., & Laschinger, H. K. S. (2002). The relationship of empowerment and selected personality characteristics to nursing job satisfaction. *Journal of Nursing Administration*, 32(11), 586–595.

Ministry of Health, Jordan. (2013). *Ministry of Health annual statistical book 2012*. Jordan: Author.

Nantsupawat, A., Srisuphan, W., Kunaviktikul, W., Wichaikhum, O.-A., Aunguroch, Y., & Aiken, L. H. (2011).

- Impact of nurse work environment and staffing on hospital nurse and quality of care in Thailand. *Journal of Nursing Scholarship*, 43(4), 426–432.
- Nedd, N. (2006). Perceptions of empowerment and intent to stay. *Nursing Economics*, 24(1), 13–19.
- Pond, S. B., & Geyer, P. D. (1991). Differences in the relation between job satisfaction and perceived work alternatives among older and younger blue-collar workers. *Journal of Vocational Behavior*, 39(2), 251–262.
- Quinn, R. P. (1972). *Locking-in as a moderator of the relationship between job satisfaction and mental health*. Ann Arbor, MI: Survey Research Center, University of Michigan.
- Quinn, R. P., & Shepard, L. J. (1974). *The 1972-73 Quality of Employment Survey*. Ann Arbor, MI: Institute for Social Research, University of Michigan.
- Rice, R. W., Phillips, S. M., & McFarlin, D. B. (1990). Multiple discrepancies and pay satisfaction. *Journal of Applied Psychology*, 75(4), 386–393.
- Rochefort, C. M., & Clarke, S. P. (2010). Nurses' work environments, care rationing, job outcomes, and quality of care on neonatal units. *Journal of Advanced Nursing*, 66(10), 2213–2224.
- Salyers, M. P., Rollins, A. L., Kelly, Y-F., Lysaker, P. H., & Williams, J. R. (2013). Job satisfaction and burnout among VA and community mental health workers. *Administration and Policy in Mental Health and Mental Health Services Research*, 40(2), 69–75.
- Shuriquie, M., While, A., & Fitzpatrick, J. (2008). Nursing work in Jordan: An example of nursing work in the Middle East. *Journal of Clinical Nursing*, 17(8), 999–1010.
- Tervo-Heikkinen, T., Partanen, P., Aalto, P., & Vehviläinen-Julkunen, K. (2008). Nurses' work environment and nursing outcomes: A survey study among Finnish university hospital registered nurses. *International Journal of Nursing Practice*, 14(5), 357–365.
- Van Bogaert, P., Kowalski, C., Weeks, S. M., & Clarke, S. P. (2013). The relationship between nurse practice environment, nurse work characteristics, burnout and job outcome and quality of nursing care: A cross-sectional survey. *International Journal of Nursing Studies*, 50(12), 1667–1677.
- Warshawsky, N. E., & Havens, D. S. (2011). Global use of the Practice Environment Scale of the Nursing Work Index. *Nursing Research*, 60(1), 17–31.