Original Article

International Nursing Review

Relationship between nurses' practice environments and nursing outcomes in Turkey

İ. Topçu[1] MD, E. Türkmen[2] PhD, A. Badır[3] PhD, N. Göktepe[4] PhD, M. Miral[5] MSN, S. Albayrak[4] MSN, A. Kebapçı[4] MSN, Ş. Serbest[6] MSN & D. Özcan[7]

1 Assistant Professor, Bezmialem Foundation University, School of Medicine, Department of Medical History and Ethics, **2** Assistant Professor, **3** Associate Professor, **4** Instructor, Koc University School of Nursing, **5** Educator Nurse, Department of Education & Human Resources, Health Directorate of Istanbul, **6** Nursing Education and Development Manager, Acibadem Health Care Group, **7** Educator Nurse, Validebağ Istanbul Anatolian Health Vocational High School, Istanbul, Turkey

TOPÇU İ., TÜRKMEN E., BADIR A., GÖKTEPE N., MIRAL M., ALBAYRAK S., KEBAPÇI A., SERBEST Ş. & ÖZCAN D. (2016) Relationship between nurses' practice environments and nursing outcomes in Turkey. *International Nursing Review* **63**, 242–249

Aim: This study aimed to understand nursing practice environment characteristics in Istanbul-area hospitals in Turkey, the relationship between these characteristics, nurse burnout levels and nurses' intentions to leave work.

Background: A well-known relationship exists in many countries between nursing practice environments and nurse burnout and intention to leave work. However, little is known about the relationship between practice environment characteristics and nursing outcomes in Turkey.

Methods: This cross-sectional study was conducted among 2592 nurses in 20 Ministry of Health and 29 private hospitals in Istanbul, Turkey. A demographic questionnaire, Practice Environment Scale of the Nursing Work Index and Maslach Burnout Inventory were used for data collection.

Results: Almost half of nurses suffered from high-level burnout related to emotional exhaustion and personal accomplishment, and one-third reported depersonalization and the intent to leave their jobs within a year. A poor nursing practice environment was the leading factor, increasing nurses' burnout levels in all subdimensions. Burnout related to emotional exhaustion, personal accomplishment and poor practice environment increased intention to leave. Permanent positions decreased intention.

Discussion: There was a relationship between poor practice environments and nursing outcomes in Turkey.

Correspondence address: Emine Türkmen, Koc University School of Nursing, Davutpaşa Caddesi No 4, 34010 Topkapı/Istanbul, Turkey; Tel: +90-212-311-26-00; Fax: +90-212-311-26-02; E-mail: emturkmen@ku.edu.tr.

Funding
This research received no specific grant from any funding agency in the public, commercial or not-for-profit sectors.
Conflict of interest
No conflict of interest has been declared by the authors.

Limitations: The use of a survey data collection method is a potential study limitation. Quantitative and qualitative methods could be combined to obtain more detailed objective data about nursing practice environments.

Conclusion: Poor practice environments, high-level burnout and intention to leave work are significant problems in Istanbul, Turkey. Favourable practice environments and job security should be provided to improve nursing outcomes.

Implications for nursing policy: Policymakers and nurse managers should be aware of any negative issues regarding nursing practice environments and job security to improve nursing outcomes.

Keywords: Burnout, Intention to Leave Work, Nursing Work Index, Practice Environment, Turkey

Introduction

Worldwide, a substantial nursing shortage has caused a workforce crisis (International Council of Nurses (ICN) 2010). Nursing outcomes such as burnout and intention to leave are directly influenced by staff shortages and poor practice environments (Aiken et al. 2012; Zhang et al. 2014). The ICN noted that resolving the workforce crisis meant improving nursing practice environments (ICN 2010).

Turkey has seen many economic and health policy changes in recent decades (Seren & Yildirim 2013). A healthcare reform was introduced in the 1990s and became known as the 'Health Transformation Program' by 2003, with main objectives to reduce costs and transform health institutions into productive health organizations. Healthcare services have been enhanced through increased use of national and international accreditation practices in public and private sectors. However, these reforms have had negative effects on staffing and practice environments of health professionals, including job security, salary distribution, workload and working hours (Etiler 2011; Seren & Yildirim 2013).

Background

Healthy working environments are key to preventing burnout (Aiken et al. 2011, 2012; Liu et al. 2012). Hospitals awarded Magnet status by the American Nurses Credentialing Centre have positive working environments for nurses. To earn this designation, they must demonstrate strong leadership programs (Hess et al. 2011), associated with greater professional satisfaction, reduced burnout and reduced intention to leave (Kelly et al. 2011). As of 2014, no Turkish hospitals had obtained Magnet accreditation.

While the subject of burnout in nursing has been highly researched in Turkey, few studies have examined nursing practice environments and nursing outcomes (Kocaman et al. 2010; Uğur-Gök & Kocaman 2011).

Aim

This study aimed to understand nursing practice environment characteristics, the relationship between these characteristics and nurse burnout and nurses' intentions to leave work in hospitals in Istanbul.

Research questions

- What are hospitals' practice environment characteristics for nurses?
- What are burnout levels of nurses?
- Which factors are associated with high burnout?
- Which factors are associated with intention to leave work within a year?

Methods

Design

This is a cross-sectional survey study.

Sample and setting

Participants were recruited from the registered nurse population at hospitals in Istanbul. A list of all 190 hospitals and the number of nurses (15266) in Istanbul were received from the Ministry of Health office. Then, hospitals and nurses were grouped into five categories: public non-teaching (PN-T), public teaching and research (PT-R), public-special branch (P-SB), private accredited (PA) and private non-accredited (PN-A) (20, 13, 18, 15 and 134 hospitals; and 1641, 5625, 2913, 1891 and 3196 nurses, respectively).

A pilot study was conducted with 250 nurses (50 per category) to determine target sample size. Mean scores were obtained for the Practice Environment Scale-Nursing Work Index (PES-NWI) and Maslach Burnout Inventory (MBI), and the sample size calculation was 3134 (power = 80%, CI = 95%). We distributed the sample across five categories using weighted percentages: PN-T (10.7%, 337 nurses), PT-R

(36.8%, 1155 nurses), P-SB (19.1%, 598 nurses), PA (12.4%, 388 nurses) and PN-A (20.9%, 656 nurses). Hospitals were selected randomly.

All nurses who met inclusion criteria were invited to participate at selected hospitals. Inclusion criteria included employment in a 24-hour service-providing department of the hospital for at least 6 months. Surveys were distributed to 3134 nurses. Totally, 542 surveys were excluded due to missing data and outliers. The final sample included 2592 nurses [response rate (RR) 82.7%] from 7 PN-T (RR: 92.32%, 311 nurses), 8 PT-R (RR: 82.18%, 949 nurses), 5 P-SB (RR: 82.18%, 512 nurses), 9 PA (RR: 82.43%, 320 nurses) and 20 PN-A (RR: 76.21%, 500 nurses).

Data collection

Two validated survey instruments and a socio-demographic questionnaire were employed by researchers.

Socio-demographic questionnaire

A 13-item questionnaire was developed by the researchers to determine socio-demographic characteristics of respondents, their workplace characteristics and intention to leave work within a year.

Practice Environment Scale-Nursing Work Index (PES-NWI)

The PES-NWI Turkish version elicited information about practice environments. The original scale was developed and found reliable (Cronbach's alpha = 0.82) by Lake (2002). Türkmen et al. (2011) assessed the validity and reliability of the Turkish version and found a Cronbach's alpha of 0.94; our study also showed this value. The scale consists of 31 items in five subdomains: nurse participation in hospital affairs (nine items), nursing foundations for quality of care (10 items), nurse manager ability, leadership and support of nurses (five items), staffing and resource adequacy (four items) and collegial nurse–physician relations (three items). Respondents answered using a 4-point Likert-type scale: (4) strongly agree, (3) agree, (2) disagree and (1) strongly disagree.

A mean score was calculated for each domain and the whole scale. Higher scores indicated that nurses perceived their workplace environment more positively (Lake 2002). Hospital level mean scores for the five PES-NWI subdomains were used to group hospitals into three categories: unfavourable, mixed or favourable practice environment (Lake & Friese 2006).

Maslach Burnout Inventory

The maslach burnout inventory (MBI) is a self-evaluation scale to measure individual burnout. Developed by Maslach and Jackson (1981), it is measured on a 7-point Likert-type scale, and is a reliable international tool (Aiken et al. 2012). The validity and reliability of a 5-point Likert-type Turkish version of the MBI was confirmed by Ergin (1993).

The 22-item instrument consists of three subdomains: emotional exhaustion (EE; nine items), depersonalization (D; five items) and personal accomplishment (PA; eight items) (Ergin 1993). Cronbach's alpha values in our study were 0.89 for EE, 0.74 for D and 0.70 for PA.

A total score was calculated for each subdomain of the MBI. Because of the difference in scaling between the original and Turkish scales, cutoff points for each subdomain were calculated using the MBI Manual. Scores greater than or equal to 27, 10 and 33 for EE, DP and PA, respectively, indicate a high level of burnout, while scores in the range of 19–26 points for EE, 6–9 points for DP and 34–39 points for PA reflect an intermediate level of burnout. Finally, scores less than or equal to 18, 5 for EE, DP and over or equal 40 for PA indicated low burnout (Maslach et al. 1996).

Ethical considerations

The study was approved by the Koc University School of Nursing Research Ethics Board (Protocol Number 1101). Potential participants were given a document outlining that participation was voluntary and that collected data would be used solely for scientific purposes. Verbal consent was obtained.

Data analysis

Data were analysed with Stata Version 12.0 and summarized using percentages, means and standard deviations. Multiple stepwise backward regression was used to examine the effects of independent variables on dependent variables (high-level burnout and intention to leave work in the forthcoming year). Mean scores obtained for the MBI subscales were transformed into dichotomous data for each nurse (1 = high-level burnout; 0 = intermediate or low-level burnout). Independent variables were also transformed into dichotomous data: age, gender, educational background, working area, total professional experience, years of work at the hospital and PES-NWI score (Table 1). The seven independent variables were subjected to multiple regression analysis to determine factors that influenced burnout in the first three models. In the fourth model, the three subdimensions of the MBI and employment status were added to these seven independent variables to determine factors that influenced nurses' intentions to leave work. The independent variables were analysed with a variance inflation factor (VIF) test prior to the multiple regression analysis. In all four models, no multicollinearity among independent variables was observed. Chi-square test was used

Table 1 Socio-demographic and institutional characteristics of nurses (N = 2592)

	n	%
Age		
<30	1227	47.3
≥30	1365	52.7
Educational background		
University degree	1219	47.1
High school	1373	52.9
Gender		
Female	2250	86.8
Male	342	13.2
Employment status*		
Permanent position	1772	68.4
Contract position	820	31.6
Work unit		
Special unit (operating room, Critical care unit, emergency room)	996	38.4
Ward (medical-surgical or psychiatric regular unit)	1596	61.6
Total professional experience		
<10 years	1528	58.9
≥10 years	1064	41.1
Employment duration at current		
≤5 years	1786	68.9
Hospital		
>5 years	806	31.1

*Permanent and contract positions are both full-time employment in Turkey; however, there are different labour regulations for benefits.

to test whether there was a relationship between employment status and intention to leave.

Results

The mean age of nurses was 30.6 ± 6.6 (range = 18–60 years). Socio-demographic and institutional characteristics are given in Table 1. Overall, mean years worked as a nurse was 9.3 (±7.2) years, and mean years worked at current hospital was 5.5 (±5.8) years [6.1 (±6.1) in permanent employees and 4.0 (±3.8) in temporary employees]. Of 2592 nurses, 880 (34%) planned to leave work within the next year (31.2% permanent and 39.9% contract).

Nurses' practice environment mean scores are shown in Table 2. Multiple regression analysis showed that EE was correlated with working in a mixed or unfavourable practice environment. Depersonalization was correlated with working in a mixed or unfavourable practice environment and professional experience of less than 10 years. Burnout related to personal accomplishment was related to working in a mixed

Table 2 Descriptive statistics for nurse burnout level, nursing work environment and intention to leave

	Mean (SD)	*Median (P_{25}, P_{75})*
Nurse burnout (N = 2592)		
Emotional exhaustion	25.26 (10.95)	25.52 (17.96, 32.94)
Depersonalization	8.05 (5.73)	3.00 (7.50, 12.00)
Personal accomplishment	33.56 (6.11)	30.00 (34.56, 37.56)
According to burnout level*		
Nurse – high burnout		
Emotional exhaustion (n = 1176; 45.4%)	34.93 (6.78)	32.94 (29.97, 39.02)
Depersonalization (n = 908; 35.0%)	14.48 (3.77)	13.50 (12.00, 16.50)
Personal accomplishment (n = 1272; 49.1%)	28.56 (3.93)	30.00 (31.56, 25.56)
Nurse – moderate burnout		
Emotional exhaustion (n = 686; 26.5%)	22.4 (2.1)	22.55 (21.06, 24.03)
Depersonalization (n = 744; 28.7%)	7.42 (1.19)	7.50 (6.00, 9.00)
Personal accomplishment (n = 930; 35.9%)	36.54 (1.59)	36.00 (37.56, 34.56)
Nurse – low burnout		
Emotional exhaustion (n = 730; 28.1%)	12.32 (4.77)	13.50 (9.05, 16.47)
Depersonalization (n = 940; 36.3%)	2.34 (1.69)	3.00 (1.50, 4.50)
Personal accomplishment (n = 390; 15.0%)	42.75 (2.25)	42.00 (43.56, 40.56)
Nursing work environment (N = 2592)		
Nurse participation in hospital affairs	2.50 (0.47)	2.56 (2.11, 2.89)
Nursing foundations for quality of care	2.49 (0.58)	2.80 (2.50, 3.00)
Nurse manager ability, leadership and support of nurses	2.77 (0.50)	2.60 (2.00, 3.00)
Staffing and resource adequacy	2.06 (0.64)	2.00 (1.50, 2.50)
Collegial nurse–physician relations	2.67 (0.60)	2.67 (2.33, 3.00)
Classification of Nursing Work Environment† (49 hospitals; 2592 nurses)	*n*	%
Favourable (22 private and 3 government hospitals)	932	36.0
Mixed (7 private and 10 government hospitals)	1110	42.8
Unfavourable (7 government hospitals)	550	21.2
Nurses' intention to leave in the next year (N = 2592)	880	34.0

*Maslach Burnout Inventory Manual.

†Favourable: four or five subscales' scores were above 2.5; mixed: two or three subscales' scores were above 2.5; unfavourable: none or one subscale's score was above 2.5.

Table 3 Unadjusted and adjusted analysis for burnout and intention to leave work (dependent variable)

	Unadjusted OR	*Adjusted OR**
Emotional exhaustion		
PES-NWI (mixed or unfavourable nursing practice environment)	3.74 [3.16–4.43] $P < 0.001$	3.81 [3.21–4.51] $P < 0.001$
Depersonalization		
PES-NWI (mixed or unfavourable nursing practice environment)	2.26 [1.90–2.70] $P < 0.001$	2.30 [1.93–2.74] $P < 0.001$
Work years (<10 years)	1.36 [1.15–1.60] $P < 0.001$	1.41 [1.19–1.67] $P < 0.001$
Personal accomplishment		
PES-NWI (mixed or unfavourable nursing practice environment)	2.15 [1.83–2.52] $P < 0.001$	2.14 [1.82–2.52] $P < 0.001$
Gender (female)	1.36 [1.08–1.71] $P < 0.01$	1.49 [1.18–1.88] $P < 0.01$
Work years (<10 years)	1.36 [1.17–1.60] $P < 0.001$	1.32 [1.12–1.55] $P < 0.01$
Intention to leave		
High burnout – emotional exhaustion	2.00 [1.69–2.36] $P < 0.001$	1.91 [1.59–2.29] $P < 0.001$
High burnout – personal accomplishment	1.57 [1.34–1.86] $P < 0.001$	1.43 [1.20–1.71] $P < 0.001$
Employment status (permanent position)	0.51 [0.43–0.61] $P < 0.001$	0.52 [0.43–0.63] $P < 0.001$
PES-NWI (mixed or unfavourable nursing practice environment)	1.44 [1.22–1.70] $P < 0.05$	1.26 [1.04–1.51] $P < 0.05$
Work unit (special units including operating rooms, critical care units and emergency rooms)	1.18 [1.00–1.40] $P < 0.05$	1.19 [1.00–1.41] $P < 0.05$

*Stepwise backward logistic regression.
OR, odds ratio; 95% CI [lower and upper bound]; PES-NWI, Practice Environment Scale-Nursing Work Index.

or unfavourable practice environment, being female, and professional experience of less than 10 years (Table 3).

Multiple regression analysis showed that nurses' intention to leave work in the forthcoming year was correlated with high burnout related to EE and PA, a mixed or unfavourable working environment and working in intensive care, emergency and operating rooms. Working in permanent positions within hospitals was also influential (Table 3). Finally, intent to leave significantly differed by employment status ($\chi^2 = 18786$; $P < 0.001$).

Discussion

This study examines burnout of nurses at Istanbul-area hospitals, intention to leave work and the relationship between nursing outcomes and nurses' practice environments.

Nurses' burnout scores for all subdimensions indicated intermediate levels of burnout in this sample. Moreover, almost half reported high burnout in EE and PA, and more than one-third had high burnout in DP. Some Turkish studies have also indicated that nurses' burnout levels were higher than those of other healthcare professionals such as physicians and psychologists (Günüşen & Üstün 2010). While the number of nurses with high-level EE burnout is higher in Turkey than in many other European countries (Aiken et al. 2012; Heinen et al. 2013), the USA (Aiken et al. 2012), Thailand (Nantsupawat et al. 2011) and China (Zhang et al. 2014), the number of nurses having high-level EE burnout was lower in Turkey than in Greece (Aiken et al. 2012) and Japan (Aiken et al. 2011). The levels of burnout in DP and PA in this sample were also higher than in Western countries (Heeb & Haberey-Knuessi 2014; Poghosyan et al. 2010). Nursing shortages, poor practice environments including excessive workloads, long and irregular work schedules and stressful work environments (Kocaman et al. 2010; Uğur-Gök & Kocaman 2011; Yavuz & Kocaman 2013) could have contributed to the high level of burnout among nurses in Turkey. Negative perceptions of the nursing profession in Turkey (Uğur-Gök & Kocaman 2011; Yavuz & Kocaman 2013), as well as nursing as a forced career choice, could be factors affecting levels of EE and PA in nurses.

A poor nursing practice environment was a leading factor increasing nurses' burnout in all subdimensions. The majority of nurses working at MoH hospitals described their practice environments as mixed or poor, resulting in higher burnout. In addition, the poorest aspect of the practice environments at hospitals in Istanbul was 'staffing and resource adequacy'. Insufficient numbers of nurses and nurse staffing policies in Turkey (Yavuz & Kocaman 2013) may explain negative perceptions of practice environments. Two main problems related to staffing policy in Turkey exist: (1) recruiting unqualified and inadequate numbers of nurses, and (2) placing nurses based on hospital needs rather than interest and

preference. Recruitment and placement of nurses is fulfilled by the Ministry of Health using the state central public personnel selection examination (PPSE). Based on test scores, nurses are placed at one of 30 hospitals in their order of choice. Nurse managers welcome new nurses without information about their qualifications, interests and preferences. Moreover, Aiken et al. (2013) and Zhang et al. (2014) showed that inadequate nursing staffing leads to higher burnout.

Maslach et al. (2001) suggested that burnout is caused by organizational rather than individual factors; however, some individual characteristics were found to be risk factors in this study. Nurses with less than 10 years of professional experience had higher burnout in DP and PA than did others. Most studies of burnout among nurses have found that young and inexperienced nurses suffer more often than do others (Günüşen & Üstün 2010; Xie et al. 2011). This could be related to the fact that nursing environments in Turkey lack coaching and mentoring, which might otherwise encourage nurses to increase their motivation for personal achievement (Durukan et al. 2010).

Some studies have shown that female nurses experienced more burnout in EE (Günüşen & Üstün 2010; Purvanova & Muros 2010) and PA (Günüşen & Üstün 2010) and that male nurses were more depersonalized than female nurses (Günüşen & Üstün 2010; Purvanova & Muros 2010). However, a study showed no difference in EE among male and female nurses (Kowalski et al. 2010). Similarly, our study revealed no difference between male and female nurses' burnout in EE and DP. In addition, female nurses had higher burnout in PA than male nurses. This could be related to gender role stereotypes of women (especially in Turkey) who have to balance work and home life and may have little time or motivation to focus on personal career achievement. Thus, family values and responsibilities may cause work–family conflict and burnout in personal accomplishment.

In this study, approximately one-third of nurses reported that they intended to leave work within the next year. This is slightly higher than in USA and European countries (14–49%) (Aiken et al. 2012). Brewer et al. (2012) demonstrated that intention to leave is a significant predictor of actually resigning. Thus, administrative nurses should consider intention to leave an important predictor.

Other factors that contributed to leaving included high burnout in EE, PA, a poor practice environment and working in special units. This study's results concerning burnout and practice environments are similar to those of many other studies: unfavourable practice environments cause burnout in EE and/or PA, which in turn results in the intention to leave (Aiken et al. 2012; Van Bogaert et al. 2010; Zhang et al. 2014). Nurses who worked in intensive care units, emergency wards and operating rooms had a stronger intention to leave work. Stone et al. (2007) pointed out that organizational climate (OC), which includes organizational features related to leadership, norms and decision making, was an important factor of intent to leave among intensive care nurses. Studies of intensive care units revealed nurses' workloads were very high (Sevinç et al. 2014; Teixeira et al. 2013). Moreover, one study regarding the professional behaviours of critical care nurses showed low autonomy levels (Kavaklı et al. 2009). Heavy workloads and lower autonomy in these units may explain these findings.

Working in a permanent position was a predictor of intention not to leave. Liu et al. (2012) pointed out that contract nurses were more likely to leave their job. A study on the turnover rates of nurses in Turkey has shown that nurses working in temporary contract positions have a much higher turnover rate than those in permanent positions (17.5–2.2%, respectively) (Kocaman et al. 2010). This could be because permanent employees work fewer weekly hours (40 h/week) than contract positions within private hospitals (48 h/week), according to Turkish Labour Law. Furthermore, nurses' perceptions of job security (Kocaman et al. 2010; Özkan et al. 2013), satisfaction with salaries and revolving budget contributions to nurses' salaries in permanent position at MoH hospitals may play a role.

Limitations

Potential limitations exist in the study. First, we used surveys with specific response options, limiting the data collected. Quantitative and qualitative methods (mixed method) could be used to obtain more objective and detailed data about nursing practice environments (working hours, nurse–patient ratio, salary, night and evening shifts, etc.). Second, nurses participated voluntarily and may have had different perceptions than those who refused to participate. Third, surveys were distributed and collected in each hospital by a nurse educator who may not have fully explained the study's purpose. In addition, the survey may have been perceived as too long by some nurses. Finally, our target sample was not reached.

Conclusion

Poor practice environments, high nurse burnout and intention to leave were significant problems in Istanbul, Turkey. High burnout among nurses at Istanbul-area hospitals in Turkey was correlated with poor or mixed practice environments. Burnout and poor practice environments lead to intention to leave work, while permanent positions decreased intention. Individual factors that accelerated burnout included inexperience and being female.

Implications for nursing policy

To decrease burnout and retain good nurses, practice environments and job security should be improved. Policymakers and nurse managers should be aware of any negative issues regarding nursing practice environments and job security to improve nursing outcomes. Healthcare institutions should not only assess the quality of all nursing practice environments but also establish strategies to retain nurses in their jobs. Further research should focus on the association between work practice environments and nurses' turnover rates.

Acknowledgements

We wish to thank the Koc University School of Nursing Directorship for providing financial support for statistical analysis of the project, the educator nurses who helped us collect data and the nurses who participated in the survey.

Author contributions

Study conception/design: İT, ET, AB, NG, MM, SA, AK, ŞS, DÖ
Data collection/analysis: İT, ET, AB, NG, MM, SA, AK, ŞS, DÖ
Drafting of manuscript: İT, ET, AB, NG, MM, SA, AK, ŞS, DÖ
Critical revisions for important intellectual content: İT, ET, AB, NG, MM, SA, AK, ŞS, DÖ

References

Aiken, L.H., et al. (2011) Importance of work environments on hospital outcomes in nine countries. *International Journal for Quality in Health Care*, **23** (4), 357–364. doi:10.1093/intqhc/mzr022.

Aiken, L.H., et al. (2012) Patient safety, satisfaction, and quality of hospital care: cross sectional surveys of nurses and patients in 12 countries in Europe and the United States. *British Medical Journal*, **344**, e1717. doi:10.1136/bmj.e1717.

Aiken, L.H., et al. (2013) Nurses' reports of working conditions and hospital quality of care in 12 countries in Europe. *International Journal of Nursing Studies*, **50** (2), 143–153. doi:10.1016/j.ijnurstu.2012.11.009.

Brewer, C.S., et al. (2012) Predictors of actual turnover in a national sample of newly licensed registered nurses employed in hospitals. *Journal of Advanced Nursing*, **68** (3), 521–538. doi:10.1111/j.1365-2648.2011.05753.x.

Durukan, S., Akyürek, Ç. & Coşkun, E. (2010) The determination of organizational trust, empowerment and commitment levels of nurses working at Hacettepe University Adult Hospital. *Süleyman Demirel Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi*, **15** (3), 411–434 (in Turkish).

Ergin, C. (1993) Reliability and validity of Maslach Burnout Inventory in nurses and physicians. Paper presented at the VII. National Physicology Congress, September 22–25, 1992, Ankara, pp. 143–154 (in Turkish).

Etiler, N. (2011) Neoliberal policies and effects on healthcare labour. *Türk Tabipler Birliği Mesleki Sağlık ve Güvenlik Dergisi*, **42**, 2–11 (in Turkish).

Günüşen, N. & Üstün, B. (2010) Burnout in nurses and doctors working in secondary healthcare services in Turkey: a literature review. *DEUHYO Ed*, **3** (1), 40–51 (in Turkish).

Heeb, J.L. & Haberey-Knuessi, V. (2014) Health professionals facing burnout: what do we know about nursing managers? *Nursing Research and Practice*, **2014**, Article ID 681814 1–7. doi:10.1155/2014/681814.

Heinen, M.M., et al. (2013) Nurses' intention to leave their profession: a cross sectional observational study in 10 European countries. *International Journal of Nursing Studies*, **50** (2), 174–184. doi:10.1016/j.ijnurstu.2012.09.019.

Hess, R., et al. (2011) Perceptions of nurses in magnet® hospitals, non-magnet hospitals, and hospitals pursuing magnet status. *Journal of Nursing Administration*, **41** (7/8), 315–323. doi:10.1097/NNA.0b013e31822509e2.

International Council of Nurses (ICN) (2010) Three countries launch projects to promote healthy work places. *International Nursing Review*, **57** (2), 155–157. doi:10.1111/j.1466-7657.2010.00824_3.x.

Kavaklı, Ö., Uzun, Ş. & Arslan, F. (2009) Determination of the professional behavior of the intensive care nurses. *Gülhane Tıp Dergisi*, **51** (3), 168–173 (in Turkish).

Kelly, L., McHugh, M. & Aiken, L. (2011) Nurse outcomes in magnet and non-magnet hospitals. *Journal of Nursing Administration*, **41** (10), 428–433. doi:10.1097/NNA.0b013e31822eddbc.

Kocaman, G., et al. (2010) Turnover among nurses at three university hospitals. *Hemşirelikte Eğitim ve Araştırma Dergisi*, **7** (1), 34–38 (in Turkish).

Kowalski, C., et al. (2010) Burnout in nurses–the relationship between social capital in hospitals and emotional exhaustion. *Journal of Clinical Nursing*, **19** (11–12), 1654–1663. doi:10.1111/j.1365-2702.2009.02989.x.

Lake, E.T. (2002) Development of the practice environment scale of the Nursing Work Index. *Research in Nursing and Health*, **25** (3), 176–188. doi:10.1002/nur.10032.

Lake, E.T. & Friese, C.R. (2006) Variations in nursing practice environments: relation to staffing and hospital characteristics. *Nursing Research*, **55** (1), 1–9. doi:10.1097/00006199-200601000-00001.

Liu, K., et al. (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. doi:10.1111/j.1365-2702.2011.03991.x.

Maslach, C., Leiter, M.P. & Jackson, S.E. (1996) Maslach Burnout Inventory Manual and non-reproducible instrument and scoring guides. Mind Garden Inc. Available at: http://www.mindgardencom (accessed 09 March 2015).

Maslach, C., Schaufeli, W.B. & Leiter, M.P. (2001) Job burnout. *Annual Review of Psychology*, **52** (1), 397–422. doi:10.1146/annurev.psych.52.1.397.

Nantsupawat, A., et al. (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. doi:10.1111/j.1547-5069.2011.01419.x.

Özkan, Ö., Koçyiğit, Z. & Şen, Ü. (2013) Working condition, income insecurity, nurse, job insecurity, private hospital. *Cumhuriyet Hemşirelik Dergisi*, **2** (1), 15–25 (in Turkish).

Poghosyan, L., Clarke, S.P., Finlayson, M. & Aiken, L.H. (2010) Nurse burnout and quality of care: cross-national investigation in six countries. *Research in Nursing and Health*, **33** (4), 288–298. doi:10.1002/nur.20383.

Purvanova, R.K. & Muros, J.P. (2010) Gender differences in burnout: a meta-analysis. *Journal of Vocational Behavior*, **77** (2), 168–185. doi:10.1016/j.jvb.2010.04.006.

Seren, A.K.H. & Yildirim, A. (2013) Privatization: privatization in health and nurses. *Journal of Anatolia Nursing and Health Sciences*, **16** (2), 123–131 (in Turkish).

Sevinç, S., Türkmen, E. & İlhan, M. (2014) The nursing workforce in critical care units in university and private hospitals in Turkey. *Yoğun Bakım Derg*, **5**, 5–10. doi:10.5152/dcbybd.2014.408.

Stone, P.W., et al. (2007) Nurse working conditions, organizational climate, and intent to leave in ICUs: an instrumental variable approach. *Health Services Research*, **42**(3p1), 1085–1104. doi:10.1111/j.1475-6773.2006.00651.x.

Teixeira, C., Ribeiro, O., Fonseca, A.M. & Carvalho, A.S. (2013) Burnout in intensive care units - a consideration of the possible prevalence and frequency of new risk factors: a descriptive correlational multicentre study. *BMC Anesthesiology*, **13** (1), 38. doi:10.1186/1471-2253-13-38.

Türkmen, E., Badir, A., Balci, S. & Akkus-Topcu, S. (2011) The adaptation of the Practice Environment Scale of the Nursing Work Index into Turkish: reliability and validity study. *Hemar-G*, **13** (2), 5–20 (in Turkish).

Uğur-Gök, A. & Kocaman, G. (2011) Reasons for leaving nursing: a study among Turkish nurses. *Contemporary Nurse*, **39** (1), 65–74. doi:10.5172/conu.2011.39.1.65.

Van Bogaert, P., et al. (2010) Impacts of unit-level nurse practice environment and burnout on nurse-reported outcomes: a multilevel modelling approach. *Journal of Clinical Nursing*, **19** (11–12), 1664–1674.

Xie, Z., Wang, A. & Chen, B. (2011) Nurse burnout and its association with occupational stress in a cross-sectional study in Shanghai. *Journal of Advanced Nursing*, **67** (7), 1537–1546. doi:10.1111/j.1365-2648.2010.05576.x.

Yavuz, Ö.S. & Kocaman, E. (2013) Nursing marketing. *Health Sciences*, **1** (2), 10–23 (in Turkish).

Zhang, L.F., et al. (2014) The association of Chinese hospital work environment with nurse burnout, job satisfaction, and intention to leave. *Nursing Outlook*, **62** (2), 118–123. doi:10.1016/j.outlook.2013.10.010.