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Challenges in mental health nursing: working in institutional or community settings?

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Accessible summary

- The work environment is an important factor for the delivery of safe and quality care and the retention of healthcare professionals.
- Mental health nurses working in institutions perceive professional environment more negatively when compared with those working in the community.
- Perceptions of work motivation, leadership and autonomy are lower when nurses work in psychiatric institutions.
- More research to investigate the reasons why these weaknesses appear in the working environment is needed.

Abstract

Professional environments likely affect patient safety, quality of care provided, and nurses' satisfaction and retention. The aim of this study was to explore mental health nurses' perceptions of their professional practice environment and examine differences in perceptions between nurses working at institutions and those practising in community care. The methodology used was descriptive and comparative. The sample consisted of 248 mental health nurses working within the public sector (76% response rate) drawn from a psychiatric hospital ($n = 163$) and community settings ($n = 85$). We administered the Revised Professional Practice Environment (RPPE) questionnaire. Comparisons of the two groups were made using eight subscales of the RPPE. The results indicated that mental health nurses' ratings of their practice environment were slightly positive (M = 2.69; range = 1–4). Nurses working in a psychiatric hospital perceived the professional practice environment more negatively (M = 2.66) than their colleagues in community care (M = 2.73). A *t*-test comparison revealed statistically significant differences between the two groups within subcategories of *work motivation* ($P = 0.04$) and *leadership and autonomy* ($P = 0.03$). Nurses working in the community gave higher ratings in comparison with their colleagues working in institutional settings. In conclusions, an in-depth analysis of differences in practice environments is required to define causes of these differences and how they might influence nurses' abilities to provide quality care.

Introduction

It is widely recognized that the work environment constitutes an important factor in the retention of healthcare professionals. It can affect organizational functionality, individual satisfaction, nurses' outcomes, patient safety and quality of care (Institute of Medicine 2003). In addition, demographic and epidemiological transitions have

created new demands for healthcare services. This can include long-term care services and the need to work in different environments, such as the patients' homes, nursing homes and homes for the elderly. A characteristic example is the radical change in the organization of psychiatric care, worldwide (Hanrahan & Aiken 2008), which leads to decreased lengths of stay in psychiatric hospitals and the creation of new structures and services in the community. The shift from institutionalized to community mental healthcare settings, as well as the changing therapeutic climate within psychiatric hospitals, has created a significant impact on the role of nursing within the practice environment. Structural changes within mental health systems have produced new role requirements and have exposed professionals to new sources of stress that could threaten the quality and stability of mental health services (Sorgaard *et al*. 2007). New nursing practice environments demand extreme flexibility on behalf of nurses in order to detect and respond to unpredictable patient care needs (Lake 2002, Hanrahan 2007). Therefore, the nursing practice environment subsists within the context of an organization that facilitates or constrains the practice of a professional nurse (Hanrahan 2007).

Much of the existing research on professional practice environments focuses on the experiences and perceptions of nurses working in general hospitals. Very few studies have explored this issue in mental health nursing. This study examined and compared professional practice environments as perceived by mental health nurses working in psychiatric institutions and those practising in the community. The findings have implications for improving environmental characteristics and advancing quality of care for mental health patients.

Literature review

There is extensive international research examining professional practice environments during the last two decades developed out of the magnet hospital movement (Aiken *et al*. 1997, 1998, 1999, 2000, 2001a,b, 2002a,b,c, 2008a,b, Aiken & Patrician 2000, Aiken 2002, 2005, Stuenkel *et al*. 2007, Aiken & Poghosyan 2009). Much of this research has assessed work satisfaction, emotional burnout, quality of care and staff turnover, as well as several patient outcomes (i.e. patient satisfaction; Christmas 2008, Cohen *et al*. 2009). There has not been sufficient research concerning psychiatric care environments, but there is evidence that perceptions of the working environment are different among various nursing specializations (Sorgaard *et al*. 2007, Hanrahan & Aiken 2008, Hanrahan *et al*. 2010). For example, early studies concerning the work environment within mental health nursing was connected to nurses' mental health. In this regard, nurses realize that the working environment allows for increased participation. When nurses reported that they received support, autonomy, and have clear role boundaries, they presented with less emotional burnout and depersonalization (Hinshaw & Atwood 1983). Fielding & Weaver (1994) compared hospital and community-based mental health nurses in relation to their work environment perceptions and their psychological health. The results revealed that community nurses rated their work environments as better within dimensions of Involvement, Supervisor Support, Autonomy, Innovation and Work Pressure. Hospital nurses rated their environments as being better within the managerial control domain. Similarly, in examining the sources of stress and burnout with acute psychiatric care, studies have found that community nurses report more organizational problems, higher work demands, less contact with colleagues, but better social relations and more control over their work (Sorgaard *et al*. 2007). Ward staff tend to be more satisfied with organizational structures and access to colleagues, but complain about lack of control over operating conditions at work (Sorgaard *et al*. 2007). Roche *et al*. (2010) examined differences between characteristics in the environment of nurses working in mental health and general acute inpatient nursing settings and found that nurses working in mental health settings scored higher on scales of nurse-doctor relationships and staffing adequacy (Roche & Duffield 2010). Nurses in general wards report more participation in hospital affairs, stronger leadership and the presence of more foundations for quality nursing care, such as access to continued education. Studies relating psychiatric environments with patient outcomes are rare, and this can be explained by the difficulty in recognizing specific measurable nursing interventions. This might be influenced by the practice environment (Forchuk 1996, Tummers *et al*. 2001). More recently, Hanrahan *et al*. (2010) examined the relationship between psychiatric care environments with the occurrence of adverse events and found that verbal abuse towards nurses, complaints, patient falls with injuries and work-related injuries were frequent occurrences.

Aim of the study

The aim of this study was to explore mental health nurses' perceptions of their professional practice environment. More specifically, we sought to answer the following research questions:

- What are mental health nurses' perceptions of their practice environment?
- Are there differences among these perceptions between nurses working at institutional and community mental health settings?

Methods

Design and settings

A descriptive, correlational design was adopted. Participants were drawn from all the community mental health settings and the only one psychiatric institution in the country. The small geographical area of the country, and small population, allowed us to include a nationwide sample of nurses. The population of registered active mental health nurses in the country is 350. They work for the public sector (as there are no private institutions offering services to the mentally ill) in either institutions or community settings, including home nursing, rehabilitation and drug addiction centres.

Data collection and ethical considerations

Permission to conduct the study was obtained from the appropriate committees within the Ministry of Health and Bioethics Committee. All participants received an information sheet outlining the aims of the study, the identity of the researchers, and a statement that their responses were anonymous and confidential. Signed consent was also obtained. The questionnaires were distributed by the researchers and returned in sealed envelopes. Contact persons within the various mental health settings and personal reminders helped facilitate response rates.

Instrumentation

Data were collected using the Revised Professional Practice Environment (RPPE) scale (Erickson *et al*. 2009), which has been translated and designed for the Greek and Cypriot population by Papastavrou *et al*. (2011). Papastavrou provided permission for the use of this measure, as did the author of the original instrument (D. Jones, Massachusetts General Hospital, Boston, MA, USA, 21 April 2010).

The RPPE scale consists of 39 items and measures eight professional practice environment characteristics. Items are measured on a four-point Likert-type scale, which progresses from strongly disagree (option 1) to strongly agree (option 4). The instrument is rated in such a way that a high score corresponds to a high endorsement of that particular item. The higher the score, the more positive the respondent rates that aspect of the practice environment. The psychometric evaluation of the original RPPE scale reported good reliability based on a Cronbach's α coefficient of 0.93. In our study the Cronbach's α coefficient = 0.92. Principal components analyses with Varimax rotation and Kaiser normalization showed little difference in the variances of the eight components (59.2%, variance 59.7%) (Erickson *et al*. 2009). These factors include the following:

Leadership and autonomy in clinical practice: Leadership in mental health nursing is defined as the procedure of giving a sense to everything where people are co-operating (Drath & Palus 1994). *Autonomy* is assigned as the nurses' freedom and opportunity to act depending on his/hers beliefs in regards to what is good for the patient (Kramer *et al*. 2006).

Staff relationships with physicians: This factor refers to contacts and connections that enable the exchange of important clinical information (Aiken *et al*. 2008a,b). An effective co-operation between nurses and doctors is a factor related to a positive working environment (McClure *et al*. 1983).

Control over practice: This factor relates to the existence of a sufficient level of esteem within the organization so that the nurse can influence others and gather resources to help improve patient care (Aiken & Patrician 2000).

Communication and information about the patients: This factor is defined as the degree that information about patients is released to the people who need to be informed in a timely fashion and whether this procedure is performed through open channels (Shortell *et al*. 1991).

Teamwork: Teamwork is considered to be a conscious activity that aims at achieving unity and fulfilling common aims (Zimmerman *et al*. 1993). Teamwork and communication are the most important factors for determining and empowering the professional environment (Erickson *et al*. 2004).

Disagreements and conflicts in management: Good conflict management has been connected to several studies with healthy professional practice environments (Cole & Crichton 2006, Siu *et al*. 2008, Cohen *et al*. 2009).

Internal motivation: This factor is defined as self-orientated support independent of external factors, such as payment and supervision (Erickson *et al*. 2004).

Cultural sensitivity: Finally, cultural sensitivity refers to a series of behaviours, of both practical and political nature, that indicate respect and acceptance of cultural diversity (Erickson *et al*. 2004).

The questionnaire also included a data sheet for demographic characteristics, such as gender, education level, employment position and length of work experience.

Sample

Three hundred questionnaires were administered. Two hundred and forty-eight registered mental health nurses agreed to participate in the study, giving us a response rate of 76%. Among the sample, 163 worked in psychiatric hospitals and 85 worked in the community.

Data analysis

The analysis and elaboration of data was carried out with SPSS 16.0. Descriptive statistics included frequencies, percentages, means and standard deviations. Comparisons were made using inferential statistics, and the relations between the two independent groups were examined with *t*-tests. The nurses' background was compared using a one-way analysis of variance (ANOVA). Statistical significance was set at $P < .05$.

Results

In total, 248 registered mental health nurses returned the RPPE questionnaires. More than half of the participants were female (56.03). About 35% of the staff had at least 5 years of experience, about 25% had 6–10 years and almost 22% had more than 20 years. Most of the nurses ($n = 163$, 65%) worked in a psychiatric hospital, whereas the remaining ($n = 85$, 34%) worked in the community, including home nursing, rehabilitation and drug addiction centres. These results are presented in Table 1.

The RPPE total scale mean score for the whole sample was 2.69 (SD = 0.27). This score suggests a rather mild to positive perception of nurses' professional practice environments. The highest mean score for the whole sample was observed on the *internal work motivation* subscale (M = 2.96, SD = 0.33), and the lowest was observed score was for the *teamwork* subscale (M = 2.46, SD = 0.20). The highest mean score for nurses working in the community was for the *internal work motivation* subscale (M = 3.02), and the lowest mean score was observed for the *teamwork* subscale (M = 2.43) among nurses working in institutions. In all subcategories, except for *relationships with the physicians*, the community care sample reported higher means than the institutional sample. The subscale results are presented in Tables 2 and 3.

Statistical calculations were conducted using *t*-tests. We compared the working place variable (institutional or community services) with the mean and SD of total RPPE score, and mean and SDs of the subscales. The results showed statistically significant differences in *internal work motivation* ($P = 0.048$) and *leadership and autonomy* ($P = 0.003$). Nurses working in the community rated both subscales (*internal work motivation* = 2.91; *leadership and autonomy* = 3.02) higher than those working in institutions (*internal work motivation* = 2.64; *leadership and autonomy* = 2.78). These results are presented in the Table 3.

Table 1
Demographic characteristics of the sample

Demographic variables	*n*	%
Working place		
Institutional care	163	65.73
Community care	85	34.27
Gender		
Male	109	43.95
Female	139	56.05
Length of working experience		
Up to a year	16	6.45
2–5 years	70	28.23
6–10 years	63	25.40
11–15 years	24	9.68
16–20 years	21	8.47
21 or more years	54	21.77

Discussion

Mental Health nurses perceived their professional practice environment in a slightly positive manner, with a total questionnaire score of 2.69 on a scale ranging from 1 to 4. Although the instrument has not been widely used, most of the studies examining work environments suggest a trend towards more positive perceptions (Roche *et al*. 2010). The results from a European study, which was carried out with the use of the same instrument and a sample of nurses from orthopaedic clinics, reported similar scores (Papastavrou *et al*. 2011). The RPPE total scale mean scores among all countries in the study ranged between 2.67 (2.56–2.78) and 2.95 (2.84–3.05) with high scores for *internal work motivation*. An interesting result from the Cypriot sample

Table 2
Results from the Revised Professional Practice Environment (RPPE) questionnaire and subscales for the total sample ($n = 248$ psychiatric nurses)

Description	Mean (1–4)	Std. deviation	Minimum	Maximum
Total RPPE	2.69	0.27	1.00	4.00
Leadership & autonomy	2.69	0.50	1.00	4.00
Staff relationship with physicians	2.88	0.50	1.00	4.00
Control over practice	2.49	0.50	1.00	4.00
Communication about patients	2.88	0.49	1.33	4.00
Teamwork	2.46	0.46	.25	4.00
Handling disagreement	2.54	0.38	1.33	4.00
Internal work motivation	2.96	0.46	1.00	4.00
Cultural sensitivity	2.72	0.54	1.00	4.00

Table 3
Results from the Revised Professional Practice Environment subscales

	Description	Mean (1–4)	Std. deviation	Std. error mean	95% confidence interval minimum/maximum
Mean	Institutional care	2.6632	0.31401	0.02475	
	Community care	2.7331	0.29059	0.03115	
Handling disagreement	Institutional care	2.5203	0.36165	0.02850	
	Community care	2.5839	0.40812	0.04376	
Internal work motivation	Institutional care	2.9168*	0.51058	0.04024	Minimum: –0.22 Maximum: –0.001
	Community care	3.0267*	0.35248	0.03779	
Control over practice	Institutional care	2.4634	0.50617	0.03989	
	Community care	2.5448	0.47807	0.05125	
Leadership & autonomy	Institutional care	2.6422	0.50912	0.04012	Minimum: –0.27 Maximum: –0.01
	Community care	2.7816	0.46016	0.04933	
Staff relationship with physicians	Institutional care	2.8944	0.50128	0.03951	
	Community care	2.8448	0.50180	0.05380	
Teamwork	Institutional care	2.4379	0.43753	0.03448	
	Community care	2.5115	0.49549	0.05312	
Cultural sensitivity	Institutional care	2.6940	0.56272	0.04435	
	Community care	2.7669	0.48844	0.05237	
Communication about patients	Institutional care	2.9069	0.48620	0.03832	
	Community care	2.8272	0.48226	0.05170	

*Internal work motivation $P = 0.048$; *Leadership & autonomy $P = 0.03$.
$n = 163$ institutional care; $n = 85$ community care.

assessed in the European study was that orthopaedic nurses rated their *control over practice* very low (M = 1.88, SD = 0.55). In the present study, mental health nurses rated this subscale much higher (M = 2.49, SD = 0.50). This finding might be explained in several ways. For one, the nature and allocation of work is different within mental health services, where primary nursing care is often used. Mental health nurses in both institutional and community settings are also in a position to develop long-term relationships with patients. They might have a better knowledge of their patients' problems and might feel more comfortable in dealing with their patients.

Teamwork was similarly low in our sample when compared with the orthopaedic sample from Cyprus (M = 2.61, SD = 0.44), which, interestingly, was the lowest among all countries sampled (Papastavrou *et al*. 2011). This finding suggests that teamwork in Cyprus needs to be explored in more depth. The difference in *teamwork* between nurses from general nursing and mental health nursing might be explained historically by mental health nurses' contribution to mental health teams (Godin 1996). It might also be the case that teamwork is more developed in mental health settings, and mental health nurses participate in multidisciplinary groups and sessions.

Previous studies comparing institutional vs. community psychiatric care found that community work is more stressful than working in the ward (Prosser *et al*. 1999, Sorgaard *et al*. 2007). The main organizational stressors for community nurses are role conflicts, organizational problems, lack of supervision, lack of resources, lack of opportunities for professional development and security problems (Sorgaard *et al*. 2007). This was not the case in our study, because nurses who work in the community seem to evaluate these components more positively. Our findings might be explained by the fact that community nurses have a more independent and autonomous role than their colleagues in hospitals or clinics. This evidence indicates that the transition from the institutionalization model to the community model of nursing might be more supportive for professionals practising in the community.

It is also assumed that mental health hospitals do not provide attractive work environments, whereas, work environments outside of mental hospitals is more attractive for nurses (Fielding & Weaver 1994). Another important issue is that mentally ill patients stay for longer periods in institutions, and nurses work shifts based on a 24-h schedule. Nurses working in outpatient community facilities where patients visit for a specific period work only 5 days a week. This finding is in line with previous research (Fielding & Weaver 1994) indicating that mental health nurses who work outside a hospital describe their work environment in a more positive way than their colleagues who work in hospitals.

Methodological considerations

Some limitations need to be taken into account while interpreting our results. One limitation is the cross-sectional nature of the study that does not allow for causal inferences. Second, the questionnaire measured perceptions,

which might be different from real work situations. These issues need to be explored further. One strength of the study was the systematic data collection procedure, which was conducted at the same period in each of the settings. Another strength was the high response rate. The data can be considered as representative given that all mental health nurses in the country were approached to participate.

Conclusions

Maintaining a healthy and supportive work environment has a dual effect. Positive work environments improve the quality patient care and nurses' satisfaction with their work. The findings of our study suggest that the hospital and community environments place different demands on the nursing staff, and this should be considered when organizing nursing services to avoid negative outcomes for both patients and nurses. This research has identified weaknesses in the characteristics of the practice environment: *teamwork*, *control over practice* and *leadership and autonomy*. According to the literature, these features affect the outcomes of nurses and patients, as well as the quality of care provided. Therefore, it is helpful to investigate reasons why these weaknesses appear in the working environment. Moreover, significant factors that affect the perception of nurses regarding professional practice environments have been identified in this study more extensively. Finally, the results of this study can form the basis for designing administrative actions aimed at improving nurses' professional environments.

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References

Aiken L.H. (2002) Superior outcomes for Magnet hospitals: the evidence base. In: *Imagnet Hospitals Revisited: Attraction and Retention of Professional Nurses* (eds McClure, M.L. & Hinshaw, A.S.), pp. 61–68. American Nurses Publishing, Washington.

Aiken L.H. (2005) Journey to excellence. *Reflections on Nursing Leadership/Sigma Theta Tau International, Honor Society of Nursing* **31**, 16–19.

Aiken L.H. & Patrician P.A. (2000) Measuring organizational traits of hospitals: the Revised Nursing Work Index. *Nursing Research* **49**, 146–153.

Aiken L.H. & Poghosyan L. (2009) Evaluation of 'magnet journey to nursing excellence program' in Russia and Armenia. *Journal of Nursing Scholarship: An Official Publication of Sigma Theta Tau International Honor Society of Nursing/Sigma Theta Tau* **41**, 166–174.

Aiken L.H., Sochalski J. & Lake E.T. (1997) Studying outcomes of organizational change in health services. *Medical Care* **35** (Suppl.), NS6–N18.

Aiken L.H., Sloane D.M. & Sochalski J. (1998) Hospital organisation and outcomes. *Quality in Health Care: QHC* **7**, 222–226.

Aiken L.H., Sloane D.M., Lake E.T., *et al*. (1999) Organization and outcomes of inpatient AIDS care. *Medical Care* **37**, 760–772.

Aiken L.H., Havens D.S. & Sloane D.M. (2000) The Magnet Nursing Services Recognition Program. *American Journal of Nursing* **100**, 26–35, quiz 35–36.

Aiken L.H., Clarke S.P., Sloane D.M., *et al*. (2001a) An international perspective on hospital nurses' work environments: the case for reform. *Policy, Politics and Nursing Practice* **2**, 255–263.

Aiken L.H., Clarke S.P., Sloane D.M., *et al*. (2001b) 'Nurses' reports on hospital care in five countries. *Health Affairs (Project Hope)* **20**, 43–53.

Aiken L.H., Clarke S.P. & Sloane D.M. (2002a) Hospital staffing, organization, and quality of care: cross-national findings. *Nursing Outlook* **50**, 187–194.

Aiken L.H., Clarke S.P., Sloane D.M. & International Hospital Outcomes Research Consortium (2002b) Hospital staffing, organization, and quality of care: cross-national findings. *International Journal for Quality in Health Care: Journal of the International Society for Quality in Health Care/Isqua* **14**, 5–13.

Aiken L.H., Clarke S.P., Sloane D.M., *et al*. (2002c) Hospital nurse staffing and patient mortality, nurse burnout, and job dissatisfaction. *JAMA: The Journal of the American Medical Association* **288**, 1987–1993.

Aiken L.H., Buchan J., Ball J., *et al*. (2008a) Transformative impact of Magnet designation: England case study. *Journal of Clinical Nursing* **17**, 3330–3337.

Aiken L.H., Clarke S.P., Sloane D.M., *et al*. (2008b) Effects of hospital care environment on patient mortality and nurse outcomes. *Journal of Nursing Administration* **38**, 223–229.

Christmas K. (2008) How work environment impacts retention. *Nursing Economic* **26**, 316–318.

Cohen J., Stuenkel D. & Nguyen Q. (2009) Providing a healthy work environment for nurses: the influence on retention. *Journal of Nursing Care Quality* **24**, 308–315.

Cole E. & Crichton N. (2006) The culture of a trauma team in relation to human factors. *Journal of Clinical Nursing* **15**, 1257–1266.

Drath W.H. & Palus C.J. (1994) *Making Common Sense: Leadership as Meaning-Making in a Community of Practice*. Center for Creative Leadership, Greensboro, NC.

Erickson J.I., Duffy M.E., Gibbons M.P., *et al*. (2004) Development and psychometric evaluation of the Professional Practice Environment (PPE) scale. *Journal of Nursing Scholarship: An Official Publication of Sigma Theta Tau International Honor Society of Nursing/Sigma Theta Tau* **36**, 279–285.

Erickson J.I., Duffy M.E., Ditomassi M., *et al*. (2009) Psychometric evaluation of the Revised Professional Practice Environment (RPPE) scale. *Journal of Nursing Administration* **39**, 236–243.

Fielding J. & Weaver S.M. (1994) A comparison of hospital- and community-based mental health nurses: perceptions of their work environment and psychological health. *Journal of Advanced Nursing* **19**, 1196–1204.

Forchuk C. (1996) Workload measurement and psychiatric mental health nursing: mathematical and philosophical difficulties. *Canadian Journal of Nursing Administration* **9**, 67–81.

Godin P. (1996) The development of community psychiatric nursing: a professional project? *Journal of Advanced Nursing* **23**, 925–934.

Hanrahan N.P. (2007) Measuring inpatient psychiatric environments: psychometric properties of the Practice Environment Scale-Nursing Work

Index (PES-NWI). *International Journal of Psychiatric Nursing Research* **12**, 1447–1449.

Hanrahan N.P. & Aiken L.H. (2008) Psychiatric nurse reports on the quality of psychiatric care in general hospitals. *Quality Management in Health Care* **17**, 210–217.

Hanrahan N.P., Aiken L.H., McClaine L., *et al*. (2010) Relationship between psychiatric nurse work environments and nurse burnout in acute care general hospitals. *Issues in Mental Health Nursing* **31**, 198–207.

Hinshaw A.S. & Atwood J.R. (1983) Nursing staff turnover, stress, and satisfaction: models, measures, and management. *Annual Review of Nursing Research* **1**, 133–153.

Institute of Medicine (2003) *Keeping Patients Safe: Transforming the Work Environment of Nurses*. National Academy of Medicine, Washington DC.

Kramer M., Maguire P. & Schmalenberg C.E. (2006) Excellence through evidence: the what, when, and where of clinical autonomy. *Journal of Nursing Administration* **36**, 479–491.

Lake E.T. (2002) Development of the practice environment scale of the Nursing Work Index. *Research in Nursing and Health* **25**, 176–188.

McClure M.L., Poulin M.A., Sovie M.D., *et al*. (1983) *Magnet Hospitals: Attraction and Retention of Professional Nurses*. American Nurses Association, Kansas City.

Papastavrou E., Efstathiou G., Acaroglu R., *et al*. (2011) A seven country comparison of nurses' perceptions of their professional practice environment. *Journal of Nursing Management* **20**, 236–248.

Prosser D., Johnson S., Kuipers E., *et al*. (1999) Mental health, 'burnout' and job satisfaction in a longitudinal study of mental health staff. *Social Psychiatry and Psychiatric Epidemiology* **34**, 295–300.

Roche M., Diers D., Duffield C., *et al*. (2010) Violence toward nurses, the work environment, and patient outcomes. *Journal of Nursing Scholarship: An Official Publication of Sigma Theta Tau International Honor Society of Nursing/Sigma Theta Tau* **42**, 13–22.

Roche M.A. & Duffield C.M. (2010) A comparison of the nursing practice environment in mental health and medical-surgical settings. *Journal of Nursing Scholarship: An Official Publication of Sigma Theta Tau International Honor Society of Nursing/Sigma Theta Tau* **42**, 195–206.

Shortell S.M., Rousseau D.M., Gillies R.R., *et al*. (1991) Organizational assessment in intensive care units (ICUs): construct development, reliability, and validity of the ICU nurse-physician questionnaire. *Medical Care* **29**, 709–726.

Siu H., Spence Laschinger H.K. & Finegan J. (2008) Nursing professional practice environments: setting the stage for constructive conflict resolution and work effectiveness. *Journal of Nursing Administration* **38**, 250–257.

Sorgaard K.W., Ryan P., Hill R., *et al*. & OSCAR Group (2007) Sources of stress and burnout in acute psychiatric care: inpatient vs. community staff. *Social Psychiatry and Psychiatric Epidemiology* **42**, 794–802.

Stuenkel D.L., Nguyen S. & Cohen J. (2007) Nurses' perceptions of their work environment. *Journal of Nursing Care Quality* **22**, 337–342.

Tummers G.E., Janssen P.P., Landeweerd A., *et al*. (2001) A comparative study of work characteristics and reactions between general and mental health nurses: a multi-sample analysis. *Journal of Advanced Nursing* **36**, 151–162.

Zimmerman J.E., Shortell S.M., Rousseau D.M., *et al*. (1993) Improving intensive care: observations based on organizational case studies in nine intensive care units: a prospective, multicenter study. *Critical Care Medicine* **21**, 1443–1451.