Relationship between Psychiatric Nurse Work Environments and Nurse Burnout in Acute Care General Hospitals

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Abstract

Following deinstitutionalization, inpatient psychiatric services moved from state institutions to general hospitals. Despite the magnitude of these changes, evaluations of the quality of inpatient care environments in general hospitals are limited. This study examined the extent to which organizational factors of the inpatient psychiatric environments are associated with psychiatric nurse burnout. Organizational factors were measured by an instrument endorsed by the National Quality Forum. Robust clustered regression analysis was used to examine the relationship between organizational factors in 67 hospitals and levels of burnout for 353 psychiatric nurses. Lower levels of psychiatric nurse burnout was significantly associated with inpatient environments that had better overall quality work environments, more effective managers, strong nurse-physician relationships, and higher psychiatric nurse-to-patient staffing ratios. These results suggest that adjustments in organizational management of inpatient psychiatric environments could have a positive effect on psychiatric nurses' capacity to sustain safe and effective patient care environments.

More than 20 years of research shows that stressful hospital work environments are associated with nurse burnout (Maslach, 1979). Psychiatric nurses represent the largest professional group providing care to individuals with mental illness in general hospital settings. It is known that these nurses experience stress and that they are vulnerable to burnout. Under such conditions, their patients are more likely to have poor outcomes. Although a plethora of research shows that the quality of the work environment correlates directly with the burnout of medical-surgical nurses and their patients' outcomes (Leiter & Maslach, 2009), the relationship between the quality of the work environment and the stress experienced by the psychiatric nurses has received little attention in the United States. The purpose of the study reported in this paper was to examine the extent to which organizational factors of inpatient psychiatric environments in general hospitals are associated with psychiatric nurses' experience of burnout.

BACKGROUND

According to a national study of the psychiatric registered nurse workforce, there are estimates of nearly 90,000 psychiatric nurses practicing in the United States (Hanrahan, 2009). Two thirds of these nurses work in various types of hospital settings. They make up

the largest proportion of the professional workforce for acute inpatient psychiatric services (Hanrahan, Delaney, & Merwin, 2006). Research is limited on psychiatric nurses and inpatient practice environments in general hospitals in the United States. What is known about psychiatric nurse burnout and inpatient psychiatric environments is largely from research performed in other countries.

Research findings show psychiatric nurse burnout is associated with unsupportive management (Callaghan, 1991; Farrell & Dares, 1999; Goodykoontz & Herrick, 1990; Ryan & Quayle, 1999; Sullivan, 1993); a lack of a formal orientation program or continuing education for staff (Farrell & Dares, 1999); high risk and acutely ill patients (Goodykoontz & Herrick, 1990; Minstral, Hall, & McKee, 2002; Muscroft & Hicks, 1998; Rothwell, McManus, & Higgon, 1997; Sullivan, 1993; Tyson, Lambert, & Beattie, 2002); too much paperwork (Sullivan, 1993); and inadequate numbers of staff and unsupportive staff communication (Bowers & Flood, 2008). Worker injuries and verbally aggressive patients are reported to be increasing and are associated with higher rates of burnout of psychiatric nurses (Flannery, Farley, Rego, & Walker, 2007; Liu & Wuerker, 2005). One study reported verbal aggression and work injuries directed toward psychiatric nurses to be twice that of medical surgical nurses (Hanrahan, 2008).

Two recent comprehensive literature reviews of occupational stress experienced by psychiatric nurses show major gaps in the quality of this research (Gilbody et al., 2006; Richards et al., 2006). The authors summarized multiple studies that consist of small samples, single sites, and unstandardized measures of the prevalence and determinants of psychiatric nurse burnout (Richards et al., 2006). Additionally, only a few studies were specific to acute inpatient psychiatric care settings (Bowers, Allan, Simpson, Nijman, & Warren, 2007). Substantial challenges exist in research about the extent to which psychiatric nurses experience occupational stress. Furthermore, studies rarely include standardized organizational measures of the work environment. Because so few of these studies originate in the US, transfer of knowledge is limited by major differences in health care delivery systems.

ORGANIZATIONAL FACTORS RELATED TO THE QUALITY OF WORK ENVIRONMENTS IN GENERAL HOSPITALS

The medical-surgical sector of general hospitals has the benefit of almost 20 years of research exploring organizational factors related to the quality and safety of patient care and nurses' satisfaction with hospital work environments. This research has provided hospital decision makers with workable conceptual models for making changes in nurse practice environments in hospitals to improve patient outcomes and retain nursing staff (Institute of Medicine [IOM], 2003). A report by the IOM (2003) titled *Keeping Patients Safe: Transforming the Work Environment of Nurses* reviewed research on direct and indirect relationships of nursing practice, nurse work environments, and the quality of patient outcomes. Drawing on a large body of empirical research of medical-surgical nurse practice environments (American Association of Colleges of Nursing [AACN], 2008), the IOM (2003) concluded that optimal patient care was dependent, in large part, on organizational support of the practice of nurses.

Although many instruments for measuring the nurse practice environment have evolved over the last ten years, five organizational factors measured using the Practice Environment Scale-Nurse Work Index (PES-NWI) show strong reliable and valid properties (Aiken & Patrician, 2000; Lake, 2002, 2007). These organizational factors are conceptualized as follows: (1) Nurse participation in hospital affairs: Hospitals promulgate a philosophy of quality patient care, safety, interdisciplinary collaboration, open communication, and

encourage professional accountability, autonomous practice, and involvement in patient related policy decisions; (2) Foundations for quality of care: Hospitals create an environment that values the contribution of nurse knowledge and expertise in quality improvement; (3) Manager skill at leadership: Department managers are skillful leaders and managers; (4) Nurse-physician relationship: Collegial relationships exist among physicians and nurses; (5) Nurse staffing: Adequate patient to nurse ratios exist. The National Quality Forum (2004) endorsed these measures in the form of the Practice Environment Scale-Nurse Work Index (PES-NWI). Details about the psychometric development of this instrument can be found in papers by Aiken and Patrician (2002) and Lake (2002, 2007).

Over the past five years, research on nurse work environments and outcomes in medical surgical hospital settings has grown exponentially. Research findings include: (1) higher nurse job satisfaction, lower burnout, and better retention of medical surgical nurses were significantly associated with administrative policies that supported the professional practice of registered nurses (Adams, Bond, & Adams, 2000; Aiken, Clarke, Silber, & Sloane, 2003; Aiken, Clarke, Sloan, Lake, & Cheney, 2008; Aiken, Clarke, Sloane, Sochalski, & Silber, 2002; Laschinger, Almost, & Tuer-Hodes, 2003; Leiter & Spence-Laschinger, 2006; Mark, Salyer, & Wan, 2003); (2) fewer unnecessary patient deaths and complications were associated with better nurse staffing (Aiken et al., 2002, 2003, 2008; Cho, Ketefian, Barkauskas, & Smith, 2003); and (3) the incidence of adverse events in hospitals (i.e., medication errors, patient falls, worker injuries, and verbal abuse against nurses) were lower in better organized nurse practice environments in medical surgical settings (Aiken et al., 2008). Furthermore, better nurse staffing levels and patient satisfaction were associated with better nurse practice environments (Aiken et al., 2002; Cho et al., 2003; Cimiotti, 2007; Clarke, 2003; Friese, Lake, Aiken, Silber, & Sochalski, 2008; Kane, Shamliyan, Mueller, Duval, & Wilt, 2007; Van den Heede, et al., 2009).

PSYCHIATRIC INPATIENT CARE IN GENERAL HOSPITALS

Comparable research on organizational factors and outcomes is needed to guide quality improvement of psychiatric care in acute general hospitals (Institute of Medicine [IOM], 2006). Since the early 1960s, the locus of inpatient psychiatric care has shifted from state institutions to acute care general hospitals. Organizational restructuring of this magnitude has implications for the health and well being of staff and patients. Trends in national hospital data indicate growing problems with overcrowding of inpatient psychiatric units (Virtanen et al., 2008), high patient turnover (National Association of Psychiatric Health Systems [NAPHS], 2006), an increase in episodes of aggression, seclusion, and restraint (Serper et al., 2005; Steinert, Bergbauer, Schmid, & Gebhardt, 2007), and growing reports of adverse events such as worker injuries and medication errors (Grasso, Rothschild, Genest, & Bates, 2003; Grasso, Rothschild, Jordan, & Jayaram, 2005; Hanrahan, 2008; Rothschild et al., 2007). A shortage of mental health professionals exacerbates these problems (The Annapolis Coalition on the Behavioral Health Workforce, 2006). Additionally, there is a serious shortage of psychiatric nurses (Hanrahan, 2009). One study of the shortage of hospital-based psychiatric nurses found that 36 of 43 states had substantial registered nurse vacancies in hospital settings (National Association of State Mental Health Program Directors [NASMHPD] Research Institute, 2006).

The study presented in this paper provides some of the first empirical evidence of work environment conditions on inpatient psychiatric units and the response of psychiatric nurses to these environments. Similar to research of medical surgical sectors in general hospitals, this study examines the extent to which organizational factors of the psychiatric nurse work environment affect psychiatric nurse reports of burnout.

METHOD

Using a cross-sectional observational design, a secondary analysis linked nurse survey data and hospital data to examine associations among organizational factors of the nurse practice (work) environment (NPE) and psychiatric nurse burnout. We hypothesized that higher rated hospitals on organizational factors of the NPE would be associated with lower levels of psychiatric nurse burnout. Burnout is defined by Maslach et al. (1996) as lower scores on emotional exhaustion and depersonalization and higher scores on personal accomplishment.

Psychiatric nurse data were extracted from a large 1999 registered nurses survey dataset from the Commonwealth of Pennsylvania (Aiken et al., 2002, 2003). Originally, 80,000 nurses from the state licensure list were directly mailed a survey with over 43,000 nurses responding; yielding a 52% response rate (Aiken et al., 2002). The nurse survey included questions about the quality of the patient care, organizational factors that facilitated or undermined nursing practice, and the presence of nurse burnout.

Sample

Psychiatric Nurse Sample (n = 353)—The sample included all psychiatric registered nurses (PRNs) who declared on the nurse survey that they provided direct patient care as a staff nurse working on a psychiatric inpatient unit in a general hospital. To examine the generalizability of our sample, we compared our psychiatric nurse sample to the 2000 National Sample Survey of Registered Nurses (NSSRN), a federally-sponsored nationally-representative survey with a 72% response rate (Health Resources and Services Administration [HRSA], 2007). There were no significant differences in demographic characteristics (e.g., age, sex, nursing education level).

Hospital Sample (n = 67)—Surveyed nurses were asked to write in the name of their employing hospital on the survey. The hospital name was then linked with the American Hospital Association (AHA) survey data to obtain hospital characteristics (AHA, 1999). Hospitals selected for this study met the following inclusion criteria: (a) defined by AHA as a general hospital with a minimum of six licensed psychiatric beds and (b) at least three psychiatric nurses reportedly worked in the identified hospital. Sixty-seven general hospitals were identified and matched with 353 employed psychiatric nurses. The average number of psychiatric registered nurses (PRNs) per hospital was 5.3 (SD = 2.8), ranging from a minimum of 3 to a maximum of 16 PRNs. The American Hospital Association Annual Survey was used to describe bed size, teaching status, and technology status (AHA, 1999). Human subjects' approval was obtained from the University Institutional Review Board.

MEASURES

Explanatory Variables

Nurse Demographic and Work Characteristics—Psychiatric registered nurses (PRNs) were described by age, gender, years of experience as a nurse, years of experience at the current hospital, and years of experience on their unit. Additional work descriptors included a baccalaureate degree in nursing and full-time or part-time work.

Hospital Characteristics—Hospital characteristics included teaching status, bed size, and technology. Teaching status was defined as a dichotomous variable: 0 = a hospital without any postgraduate medical residents or fellows (non-teaching hospital) or 1 = a hospital with postgraduate medical residents or fellows (teaching hospital). Many health services research studies use this variable to adjust for remuneration for the residents and the clinical advantage of access to more physicians. Hospital bed size was categorized as <100

beds, 101–250 beds, and >251 beds. High technology hospitals were those facilities that provide services for open-heart surgery, organ transplantation, or both, indicating more sophisticated resources. High technology was a dichotomous variable where 1 = high technology.

Organizational Factors of the Nurse Practice Environment—Organizational factors of the NPE were measured using the Practice Environment Scale-Nurse Work Index (PES-NWI; Lake, 2002). The PES-NWI consists of 31 items and five sub-scales. The PES-NWI uses a Likert-type scale where 1 = disagree, 2 = somewhat disagree, 3 = somewhat agree, and 4 = agree. The five subscales of the PES-NWI are: (1) Nurse Participation in Hospital Affairs (referred to in the tables as "Affairs"); (2) Foundations for Quality of Care (referred to in the tables as "Foundations"); (3) Manager Skill at Leadership (referred to in the tables as "Management"); and (4) Nurse-Physician Relationship (referred to in the tables as "RN-MD Relations"). We did not include the "Adequate Staffing and Resource" domain because it was highly correlated with our measure of nurse staffing.

Psychometric testing has established that the PES-NWI has a stable factor structure, high internal consistency, and adequate reliability when aggregated to yield organizational-level measures (Aiken & Patrician, 2000; Hanrahan, 2007; Lake, 2002). Published internal consistency coefficients (Cronbach's alphas) for the subscales range from .71 to .84. Intraclass correlation coefficients reflecting the stability of organization-level scores across repeat samples for the subscales range from .86 to .96 (Lake, 2002).

Staffing: Patient to Nurse Staffing Ratio—A question on the nurse survey asks each nurse to report the total number of patients they cared for on the last shift worked. The average number of patients that nurses reported caring for on their last shift is aggregated to the hospital level to define a patient to nurse staffing ratio. The predictive validity of this method of measuring hospital nurses' workloads has been established (Aiken et al., 2008).

Outcome Variables

Using the Maslach Burnout Inventory (MBI; Maslach et al., 1996), emotional exhaustion, depersonalization, and personal accomplishment were measured for the psychiatric nurse respondents. High levels of emotional exhaustion reflect feelings of being emotionally overextended and exhausted by one's work; depersonalization reflects an unfeeling and impersonal response to clients, and low levels of personal achievement reflects an experience of detachment from any potential job rewards (Leiter & Harvie, 1996). Psychiatric nurse respondents were asked to indicate how often they experienced feelings related to their job by selecting from a seven choice Likert scale: never, a few times a year or less, once a month or less, a few times a month, once a week, a few times a week, every day. For example, "I feel emotionally drained from my work" and "I feel recipients blame me for some of their problems." The validity and reliability norms are published for mental health workers (n = 750), which include psychiatric nurses (Maslach et al., 1996). Published reliability coefficients for the subscales obtained from mental health professionals were: α = 0.90 for Emotional Exhaustion (EE); α = 0.79 for Depersonalization (DP), and α = 0.71 for Personal Accomplishment (PA) (Maslach et al., 1996).

PROCEDURES AND DATA ANALYSIS

Data for the four PES-NWI subscales and the staffing ratio were initially assessed for missing data. Missing items occurred in no more than 2% of the cases. The strategy for handling missing data was to use the complete case data to predict missing item values, and then use the prediction equations to generate the actual item-specific value for individuals

who were missing an item (Allison, 1999). Descriptive estimates were generated for all participants. Measures included frequencies and percents for categorical variables. Continuous variable estimates included measures of central tendency (means, medians), measures of variation (standard deviations, interquartile ranges, ranges), and derived moments of skewness and kurtosis. Outliers were assessed via visual inspection of distributions and checked for accuracy. The Pearson correlation coefficient was used to describe the strength and direction of linear association among independent and dependent variables. Homoscedasticity was evaluated using Levine's tests, and normality was assessed using Shapiro-Wilk tests. Multicollinearity was determined before variables were entered in analytic models (Tabachnick & Fidell, 2001).

Unadjusted and adjusted general linear regression models were used to examine the extent to which the four PES-NWI subscales and the patient-to-nurse staffing (heretofore called "staffing") variable were associated with psychiatric nurse emotional exhaustion, depersonalization, and personal achievement. PES-NWI subscales and staffing were modeled continuously at the hospital level. Adjusted models included nurse-level characteristics of BSN (yes vs. no) and years of experience, as well as hospital-level characteristics of bed size (<100 vs. 100–350 vs. >350), teaching status (teaching vs. non-teaching), and high technology (yes vs. no). Clustering of psychiatric nurses within hospitals was accounted for using Huber-White (robust) procedures to adjust the standard errors of the estimated parameters (Huber, 1967). The Hosmer-Lemeshow statistic was used to assess the model fit (Hosmer & Lemeshow, 1989).

Because both nurse outcomes and predictor variables were collected from nurses, we opted for a split sample approach to use half of the nurses to estimate the predictor variables and the other half to measure nurse outcomes. The data were divided into two random samples of $n = 177$ and $n = 176$. Regression models were performed using outcome variables derived from Sample 1 data and explanatory variables derived from Sample 2 to assure hypothesized models worked well with independent data. The coefficients and standard errors were comparable with the final regression models using the full sample ($n = 353$). Statistical significance was concluded at the $p < 0.05$ level. STATA10 was used for all analyses (StataCorp, 2007).

RESULTS

Table 1 provides distributional information related to both the psychiatric nurses and the hospitals included in this study. The 353 psychiatric nurses studied had the following means: 45 years of age, 16 years of experience as a registered nurse, 13 years at their current hospital, and almost 7 years on their current psychiatric unit. Less than half of the psychiatric nurses (46%) worked full-time and over a third (40%) held a baccalaureate degree in nursing. Only 8% of the nurses were male. All hospitals were general hospitals with at least six licensed beds dedicated to psychiatric care, and more than half of the hospitals had between 100 and 250 beds. Forty-six percent of the hospitals were categorized as teaching hospitals with high technology.

Table 2 provides measures of internal consistency, Cronbach's alpha, for the instruments used in the study; all values are well above the acceptable reliability value of 0.70. Table 2 also provides descriptive statistics in terms of means and standard deviations for the continuous PES-NWI subscale measures, the staffing ratio, the composite score of PES-NWI, and the three subscales of the Maslach Burnout Inventory. Bivariate Pearson correlation coefficients are also provided. The bivariate correlations suggest that the organizational factors (Foundations, Management, RN-MD Relations, and Staffing) are strongly correlated with Affairs. This suggests that the PES-NWI subscale measures and the

staffing variable should be analyzed in separate general regression models. The examination of the bivariate linear relationships among organizational factors, staffing, and MBI measures revealed that all independent measures were statistically correlated with emotional exhaustion; similarly, with the exception of staffing, all independent measures were correlated statistically with depersonalization. None of the independent measures were correlated with personal accomplishment. All the bivariate relationships were in the expected direction.

Table 3 provides results from unadjusted and adjusted general regression models for the three burnout outcome variables. With the exception of nurse participation in hospital affairs and staffing, the adjusted models for emotional exhaustion were consistent with the simple unadjusted models. Nurse participation was significantly associated with emotional exhaustion in the unadjusted models but became non-significant after adjusting for nurse characteristics (baccalaureate degree and years of experience) and hospital characteristics (bed size, teaching status, high technology). Patient to nurse staffing ratio was marginally associated with emotional exhaustion in the unadjusted models and became statistically significant at the $p = 0.047$ level when nurse and hospital characteristics were added in the adjusted models. Regressing depersonalization on the organizational factors of the NPE and staffing in separate models yielded similar results in both unadjusted and adjusted models. Depersonalization had a significant association with the composite PES-NWI score, manager skill, and nurse-physician relationship. Neither the organizational factors of the NPE or staffing were associated with personal accomplishment in either the unadjusted or adjusted models.

DISCUSSION

We hypothesized that better work environments would be associated with lower psychiatric nurse burnout. We used robust regression models that clustered psychiatric nurses within hospitals. We found significant relationships between the better nurse practice work environments and lower psychiatric nurse reports of emotional exhaustion and depersonalization. These effects remained strong even when the regression models were adjusted for hospital characteristics (teaching status, technology status, bed size) and nurse characteristics (years of experience, education at the baccalaureate level). The strength of the relationship between organizational factors and psychiatric nurse burnout should be noticed by hospital administrators. Even small changes in the quality of the nurse practice environment would improve psychiatric nurse job satisfaction, and research shows that better patient outcomes are associated with the overall quality of the nurse practice environment (Aiken et al., 2008). Including patient outcomes in future research of inpatient psychiatric care environments is imperative.

Strong Mangers and Leaders

The skill level of managers had a striking effect on psychiatric nurse burnout. Manager skill and leadership sustained the highest significance in relation to emotional exhaustion and depersonalization. Findings from our study suggest that skilled managers on psychiatric units are incredibly important to the well-being of psychiatric nurses. Inpatient psychiatric units have a high turnover of patients and short patient length of stays. Skilled unit managers are key to balancing admissions and discharges while maintaining a safe and therapeutic environment for patients and staff. Unit managers provide supervision, organization, and direction for the nursing staff, professional staff, and patients; they staff the unit and help to negotiate physician and nurse relations and, as the liaison with upper level management who hold the keys to resource distribution, they represent the immediate and long range needs of the staff and unit. Building the skill set of department managers could have a pronounced effect on the quality of the inpatient care environment and patient outcomes.

Our findings about the importance of skilled leaders and managers are consistent with other studies. Leiter and Spence-Laschinger (2006) analyzed organizational factors of medical-surgical nurse work environments in hospitals using the PES-NWI and the MBI with a sample of nurses working in Canadian hospitals. They found leadership of managers to be central to all aspects of the work environment and to preventing emotional exhaustion of the medical-surgical nurses (Leiter & Spence-Laschinger, 2006).

Leadership is a skill set and can be learned. Leadership programs are available but must be tailored to the complexities of the specific clinical area. To our knowledge, the unique leadership needs within psychiatric care environments of general hospitals have not been explored. Theories of leadership may be discussed in baccalaureate programs of nursing, but it is highly unlikely that these theories are applied to the distinct problems and needs of the inpatient psychiatric environment in general hospitals. Leadership programs and ongoing continuing education of leaders and managers of inpatient psychiatric units are needed to mediate occupational stress.

Consistent with our findings, previous research shows significant relationships between the degree to which staff nurses are valued and the degree of nurse burnout (Kanai-Pak, Aiken, Sloane, & Poghosyan, 2008; Leiter & Spence-Laschinger, 2006; Poghosyan, Aiken, & Sloane, 2009; Pompili et al., 2006). Our findings show a strong and significant relationship between psychiatric nurses' experiences of feeling valued with lower rates of expressed emotional exhaustion and depersonalization.

Nurse-Physician Relationships

We found that the nurse-physician relationship was strongly and significantly related to psychiatric nurse emotional exhaustion and depersonalization. Psychiatric nurse and psychiatrist roles with patients are evolving. No longer are hospitalized psychiatric patients' needs strictly focused on psychological symptoms. Psychiatric inpatients often present with both physical and mental distress due to side effects of atypical antipsychotic agents and multiple risk factors, such as smoking and abused substances. Additionally, they often lack attention to their basic health care needs (Druss & Newcomer, 2007). Obesity, diabetes, hypertension, and other physical illnesses are common. It was recently documented that people with serious mental illness are dying 25 years younger than the general population due to cardiovascular disease (Colton & Mandersheid, 2006). Monitoring of physical signs and symptoms, such as blood pressure, body mass index, and lab values, and surveillance of physical conditions have become common nursing functions for psychiatric inpatients. Often, the first health care provider to observe a physical health problem is the admitting psychiatric nurse. Working with complex and integrated physical and psychological problems requires strong collegial nurse-physician relationships. In many settings, models of nurse-physician co-leadership in the acute inpatient psychiatric care settings in general hospitals are common (Steinert, Goebel, & Rieger, 2006). Overall, general hospitals that promote better nurse practice environments also have better nurse-physician relationships and lower psychiatric nurse burnout.

Staffing

As noted above, a staff educated to provide a high level of decision making for complex patients on psychiatric units is needed for quality outcomes. However, to date, no empirical base is available to determine the right mix of providers to best to serve patients on an inpatient psychiatric unit. No empirical evidence is available to determine the right number of psychiatric registered nurses required to ensure safe inpatient units and quality patient outcomes (APNA Staffing Task Force et al., 2006). Without such evidence, substituting

other mental health professionals such as social workers or psychologists, or mental health workers may be an appealing cost effective staffing strategy.

Findings from our study show that lower psychiatric nurse staffing levels were associated with a higher risk for nurse burnout. Larger psychiatric nurse workloads (i.e., more patients per nurse) were significantly related to higher psychiatric nurse burnout. This is the first study showing an effect of psychiatric nurse staffing levels on psychiatric nurse burnout in the US. Although there is a dearth of empirical evidence regarding psychiatric nurse staffing and quality patient care, a landmark report by the Institute of Medicine's committee on Adequacy of Nurse Staffing in Hospitals and Nursing Homes states: "Nursing is a critical factor in determining the quality of care in hospitals and the nature of patient outcomes" (Institute of Medicine, 1996, p. 92). Moreover, there is consensus that the quantity and quality of the nursing staff is important to the delivery of health care and nurse staffing impacts safety (Kane et al., 2007). Burnout of psychiatric nurses may represent precursors for nurse turnover which must raise attention to safety practice and research. Future research must clarify issues such as methods for measuring staffing mix and the precise mechanisms through which the psychiatric nurse staffing-outcomes relationship operates on in-patient psychiatric units.

Attention to the psychiatric nurse staffing findings from our study is imperative. Perhaps the most significant external reality is the serious shortage of registered nurses in the United States (O'Brien-Pallas, Duffield, & Alksnis, 2004). The problem is even more acute for psychiatric nurses (Hanrahan, 2009; Hanrahan & Gerolamo, 2004). Half of the psychiatric nurse workforce will age out over the next ten years (Hanrahan, 2009). This is a major challenge given the demand for attention to integrated mental and physical health care needs of people with mental illness. Only 13% of the psychiatric nurse workforce is below the age of 30, which indicates that replacement of retiring psychiatric nurse staff may not be possible (Hanrahan, 2009).

Hospital administrators and nurse leaders are challenged to find effective processes of care that are specific to psychiatric nursing and associated with safer patient care as well as safer, more efficient, interdisciplinary team functioning. Future research of psychiatric nursing practice must tackle the black box of the unique contribution of nursing to optimal patient outcomes. Study of models of care using a mix of nursing and non-nursing staff will be particularly useful to staffing inpatient psychiatric units. Inpatient psychiatric nurse work environments need to be more attractive to nursing students and registered nurses from other areas of health care.

Five organizational factors were studied in the research presented in this paper. Previous research shows the presence of these organization factors is associated with inpatient work environments. Our study shows similar results in the inpatient psychiatric sector of general hospitals. Thus, managers can focus on the value of the nurse, support of a nurse model of care, and quality improvement programs, skilled managers, collaborative nurse-physician relationships, and adequate patient to nurse staffing. Providing work environments more attractive to psychiatric mental health nurses will improve recruitment and retention. Given the changing needs of the patients populating inpatient psychiatric services of general hospitals, recruitment and retention strategies for psychiatric nurses need be a top priority for policy initiatives among state, federal, and professional organizations.

Limitations

Cross-sectional survey data was used in this study, which limits the study to a point in time. In future research, a longitudinal design would capture greater depth of the conditions experienced by nurses, staff, and patient that are inherent in the inpatient psychiatric unit in

general hospitals. The analyses in this study indicated there was an association among the organizational factors and psychiatric nurse emotional exhaustion and depersonalization. However, other configurations of variables and confounders cannot be ruled out. So that empirically based standard service levels can be defined, future studies are needed to understand more about the relationship of organizational factors and outcomes of patients. Even so, findings from our study were consistent with many studies of nurses in medical surgical settings in general hospitals (Kane et al., 2007). Further research is needed to determine adequate patient to nurse staffing ratios for different types of patients in the inpatient psychiatric setting. For example, older adult patients require more attention to functional limitations such as bathing, dressing, and moving. Although the data is almost ten years old, the dearth of research in this area make this study a relevant contribution as a baseline for future studies.

CONCLUSION

This study provides some of the first evidence that the quality of the inpatient psychiatric nurse work environment is associated with occupational stress of psychiatric nurses. However, future studies are needed to determine if patient characteristics modify these relationships and if patient outcomes are affected by organizational factors of the care environment and psychiatric nurse burnout. The organizational factors examined in this study are modifiable. Therefore, managers can use the organizational factors identified in this study to focus quality improvement programs. For example, modifiable organizational factors include valuing the contribution of nurses, engaging nurses in active quality improvement programs, ensuring managers are skilled, recognizing and addressing problems that indicate riffs in nurse and physician collaboration, and providing adequate psychiatric nurse staffing. The PES-NWI and the MBI could be used to measure progress in these areas. Improving inpatient psychiatric nurse practice environments will help to attract new nurses and retain those who are currently in the workforce.

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TABLE 1

Psychiatric Nurse and Hospital Characteristics

Nurse Characteristics (*N*=353)	Mean (*SD*)	Range
Age (years)	45.0 (10.5)	22–69
Years experience as an RN	16.5 (11.6)	0.5–52
Years at the current hospital	10.1 (12.7)	0–44
Years working on the unit	6.6 (5.6)	0–34
	N	%
Education: BSN	140	39.7%
Male	27	7.7%
Hospital Characteristics (*N*= 67)	Mean (*SD*)	Range
Mean Psychiatric RNs per hospital	7.0 (2.6)	3–15
	N	%
Bed size: < 100 beds	6	9.0%
Bed size: > 100 and < 249 beds	36	53.7%
Bed size: > 250 beds	25	37.3%
Number of teaching hospitals	31	46.3%
High technology	31	46.3%

TABLE 2

Means, *SDs* and Correlations

	Alpha	Mean	SD	Affairs	Foundations	Management Leadership	RN-MD Relations	Staffing	Composite
Affairs	.82	2.42	.35						
Foundations	.80	2.94	.31	.74***					
Management/Lead	.85	2.34	.45	.66***	-.45***				
RN-MD Relations	.83	2.83	.39	.50***	-.46**	.46***			
Staffing	—	7.10	2.30	-.20***	-.33***	-.22***	-.21***		
Composite Score of PES-NWI	.81	2.58	.30	.84***	.80***	.79***	.70***	-.45***	
Emotional Exhaustion	.91	20.8	12.1	-.15**	-.11***	-.20***	-.21***	-.09	-.26***
Depersonalization	.78	4.81	4.8	-.12*	-.19*	-.13*	-.12*	-.09	-.16***
Personal Accomplishment	.81	37.4	7.5	-.03	.03	.02	.04	.01	.04

Note. *n* = 353; Significance:

*
$p < 0.05$;

**
$p < 0.01$;

***
$p < 0.001$.

Affairs through RN-MD Relations are subscale means of the PES-NWI; There is a Staffing and Resource subscale with the PES-NWI. We chose to use a derived staffing variable (patient to nurse ratio) that better reflects an organizational attribute. MBI subscales are the sums of item ratings.

Normative scores for mental health workers on the MBI are as follows: Emotional Exhaustion (EE) low ≤ 13, average 14–20, high ≥ 21; Depersonalization (DP) low ≤4, average 5–7, high ≥8; and Personal Achievement (PA) low ≥ 28, average 29–33, high ≥ 34 (Maslach et al., 1996).

TABLE 3

Adjusted and Unadjusted Regression Coefficient Indicating the Effect of Organizational Factors on Burnout in Psychiatric Nurses

Organizational Factors	Emotional Exhaustion		Depersonalization		Personal Accomplishment	
	Unadjusted B (SE)	Adjusted B (SE)	Unadjusted B (SE)	Adjusted B (SE)	Unadjusted B (SE)	Adjusted B (SE)
Composite PES-NWI	−10.5 (2.15)	−10.34 (2.23)	−2.5 (.88)	−2.70 (.99)	1.03 (1.33)	1.03 (1.32)
	P = 0.000	P = 0.000	P = 0.006	P = 0.008	P = 0.442	P = 0.442
Nurse Participation in Hospital Affairs	−5.06 (2.02)	−3.80 (2.10)	−1.57 (0.88)	−1.55 (0.91)	−.60 (1.21)	0.19 (1.17)
	P = 0.015	P = 0.069	P = 0.061	P = 0.093	P = 0.622	P = 0.873
Foundations for Quality of Care	−7.30 (2.28)	−6.19 (2.35)	−1.64 (0.88)	−1.42 (0.89)	.80 (1.40)	1.80 (1.37)
	P = 0.002	P = 0.010	P = 0.060	P = 0.117	P = 0.568	P = 0.195
Manager Skill and Leadership	−5.22 (1.23)	−4.46 (1.24)	−1.39 (0.49)	−1.33 (0.53)	0.35 (0.85)	0.79 (0.84)
	P = 0.001	P = 0.001	P = 0.007	P = 0.015	P = 0.678	P = 0.346
Nurse-Physician Relationship	−6.50 (1.60)	−6.10 (1.59)	−1.48 (0.60)	−2.24 (0.46)	0.76 (1.12)	1.62 (0.99)
	P = 0.001	P = 0.001	P = 0.017	P = 0.001	P = 0.557	P = 0.110
Staffing: Patient to Nurse Ratio	−.55 (.21)	−.52 (.19)	−.18 (.10)	−.18 (.10)	−.14 (.20)	−.30 (.16)
	P = 0.026	P = 0.026	P = 0.095	P = 0.106	P = 0.846	P = 0.637

Psychiatric Nurses N = 353; Hospitals N = 67.

Note: Adjusted models controlled for Nurse Characteristics (baccalaureate degree and years of experience) and Hospital Characteristics (bed size, teaching status, and high technology). None of the control variables were significantly related to the outcomes (emotional exhaustion, depersonalization, personal accomplishment).