Staff Nurses' Perceptions of the Work Environment in Freestanding Hemodialysis Facilities

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While one suggested cause of the current nursing shortage is nurses' negative perceptions of the work environment, little is known of nephrology nurses' perceptions of the dialysis work environment. The purpose of this study was to assess the extent to which staff nurses who work in freestanding hemodialysis facilities rate the presence of organizational characteristics common to magnet hospitals in their current job. Study findings indicate that staff nurses in hemodialysis units identify several notable features of magnet hospitals in their work settings. However, a majority of nurses disagreed that many attributes of magnet hospitals are present in hemodialysis work environments. This study provides a preliminary description of some of the factors that affect nurses' perceptions of the work environment in freestanding dialysis facilities. Further work is needed in this area.

Nephrology nursing in the United States (U.S.) is at a significant juncture. Despite the current shortage of registered nurses (RNs) in nephrology settings (Bednar, Steinman, & Street, 2002), the demand for nephrology nursing services will continue to increase. Projections indicate that the number of individuals receiving dialysis will double by the year 2010 (United States Renal Data System [USRDS], 2002). A clear understanding of factors contributing to the shortage of RNs in nephrology settings is needed to develop effective strategies to recruit and retain nurses in these settings. While one suggested cause of the current nursing shortage, in general, is nurses' negative perceptions of the work environment (Buerhaus, Needleman, Mattke, & Stewart, 2002; Levine, 2001), little is known of nephrology nurses' perceptions of the dialysis work environment. Exploring nephrology nurses' perceptions of the dialysis work setting may be crucial to the success of administrators, managers, physicians, and other nephrology stakeholders in addressing the nursing shortage in dialysis units.

Knowledge of work environment factors seen in past nursing shortages help us to understand aspects of the dialysis work environment that may serve as important contributors to the shortage of nurses in hemodialysis units (Lake, 2002). In the early 1980s, the American Academy of Nursing (AAN) conducted research to identify what nurses found satisfying about their practice environments. Organizational attributes of hospitals across the country that were successful in recruiting and retaining nurses during a national nursing shortage were studied (McClure, Poulin, Sovie, & Wandelt, 1983). The AAN subsequently nominated 165 hospitals that had reputations for successfully recruiting and retaining nurses during a national nursing shortage. Of these, 41 hospitals were designated as "magnet" hospitals. The magnet hospitals were distinguished by organizational characteristics that promoted professional nursing practice. Included were attributes such as:

- decentralized decision making by bedside caregivers
- inclusion of chief nursing executive in top management decision making
- strong, supportive, and visible nursing leadership
- unit self-governance
- participative management with open communication

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Acknowledgments: *This survey was a project of the American Nephrology Nurses' Association's 2001-2002 Professional Practice Committee. The authors wish to acknowledge Patricia Cadoret, Sharon Ehlers, Sue Fallone, Glenda Harbert, and Patrice Zyry for their participation in this project.*

Note: *This article was previously published in the April 2003 issue of Nephrology Nursing Journal and is reprinted here due to its relevance to the ANNA Invitational Summit.*

- good nurse-physician relationships and collaboration
- low nurse turnover rates
- adequate staffing levels
- richer nursing skill mix that indicates a high priority is placed on quality nursing care
- flexible scheduling
- recognition for excellence in practice
- opportunities for professional development and career advancement

Organizational characteristics of subsets of the original magnet hospitals were reexamined, and the results document that the features that distinguish these institutions have endured (Aiken, Sloane, & Lake, 1996; Aiken, Smith, & Lake, 1994; Kramer & Hafner, 1989; Kramer, 1990; Kramer & Schmalenberg, 1991a; Kramer & Schmalenberg, 1991b). Moreover, a recent study indicates that hospitals that received American Nurses' Credentialing Center (ANCC) magnet status recognition in the 1990s have practice environments that are comparable to hospitals originally selected as AAN magnet hospitals (Aiken, Havens, & Sloane, 2000).

Empirical findings from magnet hospital research provide a body of evidence that indicates that the professional practice work environment found in these hospitals is an important predictor of patient and nurse outcomes. For example, one investigation compared Medicare mortality rates in magnet hospitals to those in nonmagnet control hospitals matched in nonnursing organizational characteristics such as teaching status, average daily census, and high-technology index score (Aiken et al., 1994). The findings revealed that magnet hospitals had lower mortality rates and higher levels of patient satisfaction compared to their matched control hospitals. Similarly, in a large multisite study that compared outcomes of care for inpatients with acquired immune deficiency syndrome (AIDS), patients experienced greater satisfaction with inpatient nursing care on units where the organizational attributes that enable professional nursing practice, like those in magnet hospitals, were present (Aiken et al., 1996). Moreover, nurses working in magnet hospital environments have reported significantly higher levels of job satisfaction (Kramer & Schmalenberg, 1991a; Kramer & Schmalenberg, 1991b), lower levels of emotional exhaustion (Aiken & Sloane, 1997), and fewer nurse-reported needle stick injuries (Aiken, Sloane, & Klocinski, 1997) compared to nurses working in hospitals that have not attained magnet status.

Though much has been written about organizational attributes of hospitals that staff nurses find desirable and that are conducive to better patient care and outcomes, there have been no systematic investigations of staff nurses' perceptions of the professional practice environment in freestanding hemodialysis units, that is, outpatient facilities located outside of hospitals that provide services to individuals requiring chronic dialysis. The extent to which nephrology nurses perceive that characteristics distinguishing professional nursing practice environments in magnet hospitals are present in their dialysis settings has not been examined. Thus, the purpose of this study was to assess the extent to which staff nurses who work in freestanding hemodialysis facilities rate the presence of organizational characteristics common to magnet hospitals in their current hemodialysis work environment.

Methodology

Sample. A random sample of 1,000 nurses was selected from the American Nephrology Nurses' Association (ANNA) membership list who identified themselves as staff nurses in freestanding hemodialysis facilities in the U.S. The survey instruments were mailed to them with a cover letter. The cover letter described the purpose of the study and indicated that completion of the survey served as consent to participation. The survey questionnaires were not coded so that individual participants were not identifiable in any manner. Surveys that were completed and returned within 4 weeks were included in the analysis. No follow-up reminders or incentives were used.

Three hundred ninety-five nurses responded, representing a 39.50% response rate. Of these, the responses of 12 nurses were excluded: eleven nurses identified their work setting as an acute dialysis unit in a hospital, and one respondent did not complete page two of the questionnaire. The final sample consisted of 383 staff nurses.

Survey Instruments

Demographic questionnaire. Demographic items included age, gender, years in nephrology nursing, years in current position, highest nursing degree completed, and specialty certification including certification in nephrology nursing (CNN) or certification in dialysis nursing (CDN). Respondents were asked to indicate the profit/not-for-profit classification of their dialysis facility and its geographic location (urban, suburban, rural). Respondents were also asked to answer the following question: Do you plan to leave your job in the next year?

Revised Nursing Work Index. Items from the Revised Nursing Work Index (NWI-R) (Aiken & Patrician, 2000) were used to assess nurses' perceptions of their hemodialysis work environment. The NWI-R is comprised of 65 items that describe organizational characteristics common to magnet hospitals. Nurses are asked to assess each NWI-R item and to rate the extent to which the item is "present in my current job" on a scale of 1 (strongly agree) to 4 (strongly disagree). Thus, data reported in this study represent nurse level data. The NWI-R items are reverse coded before data analysis. For this study, the language of some NWI-R items was adapted to reflect the dialysis environment. For example, references to "hospitals" in NWI-R items were changed to "dialysis unit." In addition, references to positions that are common in hospitals but not in dialysis organizations, such as Chief Nursing Officer, were changed to rep-

Table 1
PES-NWI Subscale Titles, Subscale Items, and the Percent of Respondents Agreeing that Each Characteristic is Present in Their Current Job

Nurse Participation in Dialysis Provider Affairs	**% Agreeing**
Nurse managers consult with staff on daily problems and procedures	56
Staff nurses have the opportunity to serve on committees	50
An administration that listens and responds to employee concerns	42
Opportunities for advancement	40
A nurse in senior management in your organization is highly visible and accessible to staff (e.g., VP, Director of Quality Management)	38
Career development/clinical ladder opportunity	35
Staff nurses are involved in the internal governance of the dialysis unit	34
Opportunity for staff nurses to participate in policy decisions	29
Nursing Foundations for Quality of Care	**% Agreeing**
High standards of nursing care are expected by the administration	87
Working with nurses who are clinically competent	85
An active quality improvement program	69
Patient assignments foster continuity of care	64
Written, up-to-date nursing care plans for all patients	67
Nursing care is based on a nursing rather than a medical model	61
A preceptor program for newly hired RNs	60
A clear philosophy of nursing pervades the patient care environment	55
Use of nursing diagnoses	44
Active professional development programs for nurses	40
Nurse Manager Ability, Leadership, and Support of Nurses	**% Agreeing**
A supervisory staff that is supportive of nurses	66
A nurse manager backs up the nursing staff in decision making, even if the conflict is with a physician	60
A nurse manager is a good manager and leader	59
Praise and recognition for a job well done	50
Staffing and Resource Adequacy	**% Agreeing**
Enough staff to get the work done	45
Enough opportunities to discuss patient care problems with other nurses	45
Adequate support services allow me to spend time with my patients	40
Enough registered nurses on staff to provide quality patient care	39
Collegial Nurse-Physician Relations	**% Agreeing**
Physicians and nurses have good working relationships	86
Much teamwork between nurses and doctors	68
Collaboration (joint practice) between nurses and physicians	62

resent nurses in senior management positions that are common within dialysis settings (e.g., Vice President, Director of Quality Management). Moreover, several NWI-R items were dropped because they were not relevant to dialysis environments, and several items were added to assess nurse relations with patient care and machine technicians. The modified instrument contained 63 items. NWI-R alpha reliability for this study was 0.95.

Thirty-one items of the NWI-R have been devised into subscales referred to as the Practice Environment Scale of the Nursing Work Index (PES-NWI) (Lake, 2002). The five subscales of the PES-NWI provide a profile of key domains in the nursing practice environment of the original magnet hospitals. The items in the *Nurse Participation in Hospital Affairs* subscale reflect the participatory role and valued status of nurses in the broad organizational context. For this study, this subscale was referred to as the *Nurse Participation in Dialysis Provider Affairs* subscale and reflects the dialysis organization's support of a participatory role and valued status of nurses. The *Nursing Foundations for Quality of Care* subscale emphasizes the nursing foundations for a high standard of patient care. Together, these two subscales reflect nurses' perceptions of the organizational environment (Lake, 2002). The *Nurse Manager Ability, Leadership, and Support of Nurses* subscale focuses on the critical role of the nurse manager. The

Table 2
Selected NWI-R Items Not Included in PES-NWI Subscales and the Percent of Respondents Agreeing that Each Characteristic is Present in Current Job

Subscale Items	% Agreeing
Good relationship with other professional services such as dietary and social work	95
Good relationships with patient care technicians	88
Work environment is safe and minimizes your risk for contracting blood borne pathogens	87
Working with experienced nurses who "know" the facility	83
Good relationships with machine maintenance technicians	82
Standardized policies, procedures, and ways of doing things	82
Working with technicians who are clinically competent	80
Not being placed in a position of having to do things that are against my nursing judgment	77
Physicians give high-quality medical care	76
Adequate patient care supplies allow me to provide care for my patients	74
Freedom to make important patient care and work decisions	66
Flexible or modified work schedules are available	63
A good orientation program for newly employed nurses	61
Staff nurses actively participate in developing their work schedules	59
Often have to deal with disruptive patients	58
A satisfactory salary	58
Nursing staff is supported in pursuing nursing specialty certification	57
Nursing staff is supported in pursuing degrees in nursing	54
Nursing controls its own practice	51
Support for new and innovative ideas about patient care	50
Good communication exists between acute and chronic units	49
Nursing care plans are verbally transmitted from nurse to nurse	36
The contributions that nurses make to patient care are publicly acknowledged	36
Each dialysis unit determines its own policies and procedures	34
Advanced practice nurses who provide patient care consultation	26
The nursing staff participates in selecting new equipment	25

Staffing and Resource Adequacy subscale describes having adequate staff and support resources to provide quality patient care. The fifth subscale, *Collegial Nurse-Physician Relations*, is characterized by the positive working relationships between nurses and physicians. These latter three subscales reflect nurses' perceptions of the unit environment (Lake, 2002).

Subscale scores are calculated as mean scores, with a range of 1 to 4. A higher score indicates greater agreement that the characteristic is present in the current work environment. PES-NWI subscale mean scores below 2.5 represent disagreement and scores above 2.5 represent agreement that the subscale characteristic is present in the work environment (Lake, 2002). The modified PES-NWI subscales that were used for this study consisted of 29 items (see Table 1). Alpha reliabilities for PES-NWI subscales have been reported at 0.71-0.82 (Lake, 2002). For this study, PES-NWI subscale alpha reliabilities ranged from 0.81-0.87. Selected NWI-R items not included in the PES-NWI are listed in Table 2.

Data Analysis

Data were analyzed using the Statistical Package for the Social Sciences (SPSS, 11.0). Descriptive statistics and frequency distributions were calculated for each survey item. PES-NWI subscale mean scores were computed. To determine mean differences, if any, between sample subgroups (e.g., CNN vs. not CNN) on PES-NWI subscale scores, independent *t*-tests were performed.

Results

Sample demographics are presented in Table 3. The sample was largely female, and the mean age was 45 years (range, 22-66 yrs.). Seventy percent of the nurses had $\leq$ 14 years of nephrology nursing experience, and 75% were in their current position for $\leq$ 9 years. The majority of nurses had a diploma or associates degree in nursing as their highest level of nursing education. One half of the respondents reported that they had a CNN, and 3% a CDN. Seventy-four percent of the nurses worked in for-profit dialysis facilities; 19% in not-for-profit; and 6% were unsure of the facility's classification. Respondents were almost equally divided between urban (41%) and suburban (39%) dialysis facilities, and 18% reported a rural location.

Intentions to leave job. When asked if they planned to leave their job within the next year, 19% of the nurses answered in the affirmative. There were no significant demographic or dialysis facility differences in those nurses with intentions to leave their job in the next year compared to those not planning to leave.

Work environment characteristics not included in PES-NWI. A substantial number of nurses perceived that many aspects of the hemodialysis work setting were favorable (see Table 2). For example, intra- and interdisciplinary relationships were viewed quite positively by a majority of nurses. Over 80% of nurses reported good working relationships with patient care and machine technicians, and 95% reported good relationships with other professionals (e.g., dieticians and social workers). Eighty percent of nurses agreed that technicians were competent, and 83% agreed that they were working with nurses who were experienced and knew the facility. Moreover, a majority of nurses viewed additional aspects of the work environment positively. For example, 87% of nurses agreed that the work environment was safe and minimized the risk for the transmission of blood borne pathogens; 82% felt that there were standardized policies, procedures, and ways of doing things; 77% agreed that nurses were not placed in a position of having to do things against their nursing judgment; and 74% felt that there were adequate patient care supplies to provide patient care.

While positive perceptions of the hemodialysis work environment were evident, discontent with many aspects of the work setting also was apparent. Low levels of agreement with several characteristics that distinguish magnet hospital environments were noted (see Table 2). For example, only 34% of nurses agreed that the dialysis unit determined its own policies and procedures, just 36% agreed that nursing contributions to patient care were publicly acknowledged, and only 50% agreed that new and innovative ideas about patient care were supported. Moreover, only one half of the nurses agreed that nurses controlled their own practice. In addition, a significant number of nurses did not agree that there was a good orientation program for newly hired nurses, that nurses were supported in pursuing advanced degrees in nursing, and that nurses were supported in pursuing specialty certification.

Figure 1
PES-NWI Subscale Mean Scores (*n* = 383)

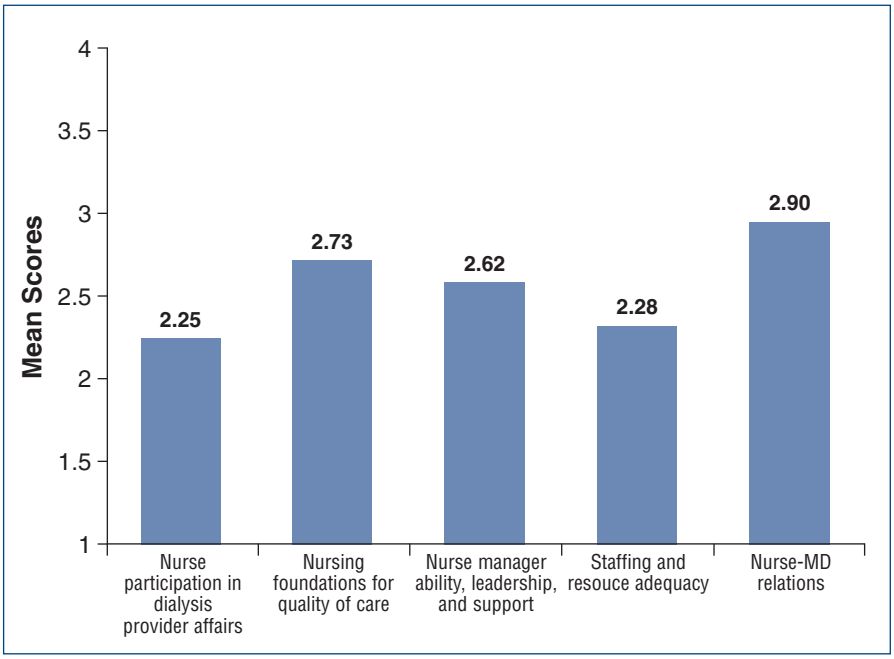
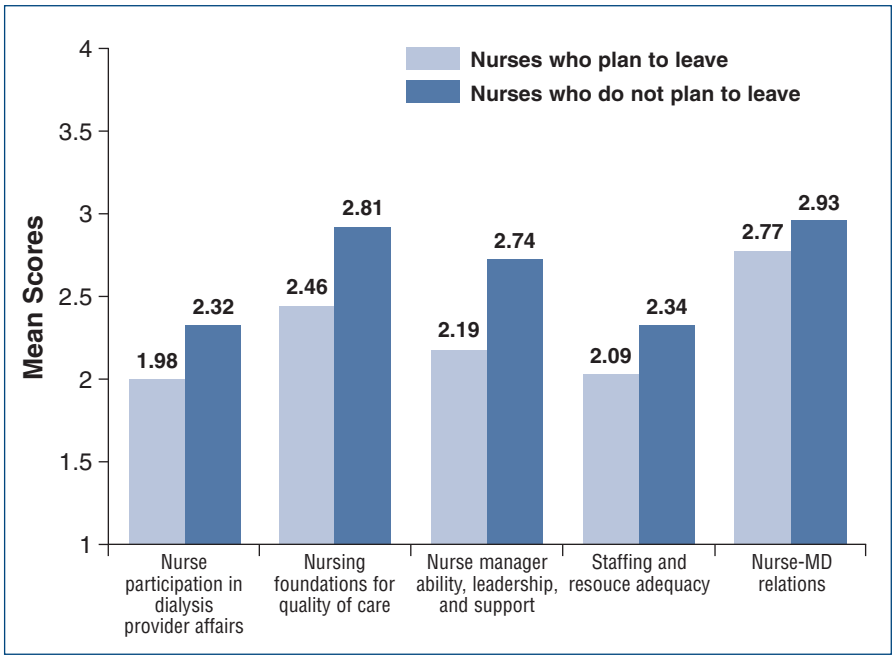


Table 3
Sample Demographics (*n* = 383)

Mean age in years	**45**	**Gender**	**(%)**
Range	22-66	Female	95
		Male	5
Highest nursing degree completed	**(%)**	**Years in nephrology nursing**	**(%)**
Diploma	24	Less than 1 year	2
Associates degree	39	1-4 years	18
Bachelors degree	34	5-9 years	27
Masters degree	3	10-14 years	24
		15-19 years	13
		20-24 years	10
		25+ years	6
Years in current position	**(%)**	**Specialty certification**	**(%)**
Less than 1 year	11	CNN	50
1 to 4 years	41	CDN	3
5 to 9 years	23		
10 to 14 years	15		
15 to 19 years	5		
20 to 24 years	3		
25+ years	2		
Dialysis facility classification	**(%)**	**Geographic location of dialysis facility**	**(%)**
For-profit	74	Urban	41
Not-for-profit	19	Suburban	39
Unsure	6	Rural	18
Plan to leave job in next year	**(%)**		
Yes	19		
No	79		
Did not answer	2		

Figure 2
Mean Scores for Nurses Who Planned to Leave Job (*n* = 73) and Did Not Plan to Leave Job (*n* = 303)



PES-NWI subscales. PES-NWI subscale mean scores are illustrated in Figure 1. The mean score for the *Nurse Participation in Dialysis Provider Affairs* subscale was 2.25, indicating that this sample did not perceive that their work environments supported a participatory role and valued status for nurses. Notably, as indicated in Table 1, only 29% agreed that nurses had an opportunity to participate in policy decisions, just 34% of the nurses agreed that staff nurses were involved in the internal governance of the dialysis unit, only 38% of nurses agreed that a nurse in a senior management position was highly visible and accessible, and only 42% agreed that administration listened and responded to employee concerns. Furthermore, only 40% of nurses agreed there were opportunities for career development and advancement.

The mean score for the *Nursing Foundations for Quality Care* subscale was 2.73, indicating that nurses agreed, somewhat, that nursing foundations for a high standard of patient care were present in their work environments. For example, as noted in Table 1, 87% of the nurses agreed that high standards of nursing care were expected by administration, 85% agreed that they were working with nurses who were clinically competent, and 64% agreed that patient assignments fostered continuity of care. On the other hand, 45% of nurses disagreed that a clear philosophy of nursing pervaded the patient care environment, and 60% of nurses did not agree that there was an active professional development program for nurses in their work setting.

A mean score of 2.62 for the *Nurse Manager Ability, Leadership, and Support of Nurses* subscale indicates that the nurses agreed, somewhat, that the nurse manager had a critical role and supported nurses in their dialysis units. Particularly, 66% of nurses agreed that the supervisory staff was supportive of nurses, 59% reported that their nurse manager was a good leader and manager, and 60% agreed that the nurse manager backed up the nursing staff in decision making (see Table 1). However, only one half of the nurses agreed that they were given praise and recognition for a job well done.

The *Staffing and Resource Adequacy* subscale mean score of 2.28 indicates that respondents, overall, disagreed that there was adequate staff and support resources to provide quality patient care in their current job. As noted in Table 1, 61% of nurses disagreed that there were enough RNs on staff to provide quality patient care, and 60% did not agree that there were adequate support services to allow nurses to spend time with patients. In addition, 55% of nurses disagreed that there were enough staff to get the work done and enough opportunities to discuss patient care problems with other nurses.

A mean score of 2.90 for the *Collegial Nurse-Physician Relations* subscale indicates that, overall, nurses agreed that there were positive working relationships between nurses and physicians. Notably, 86% of nurses agreed that physicians and nurses had good working relationships, 68% reported good nurse-physician teamwork, and 62% agreed that there was collaboration between nurses and physicians (see Table 1).

PES-NWI Subgroup comparisons. Independent *t*-tests were used to compare differences between mean PES-NWI subscale scores for sample subgroups (e.g., CNN compared to non-CNN). A significance criterion of $p < .01$ was set based on a Bonferroni correction for multiple comparisons. The comparison between those nurses who planned to leave within the next year and those who did not is illustrated in Figure 2. There were significant differences between the two groups on four subscales. Nurses who planned to leave their job in the next year reported significantly lower mean scores, that is, a higher level of disagreement, on the *Nurse Participation in Dialysis Provider Affairs* subscale ($t = -3.96$, $p < .0001$)

and the *Nursing Foundations for Quality of Care* subscale ($t = -4.90$, $p < .0001$) compared to those not planning to leave their jobs. The "plan to leave their job" subgroup also reported significantly lower mean scores (i.e., more disagreement) on the *Nurse Manager Ability, Leadership, and Support of Nurses* subscale ($t = -5.72$, $p < .0001$) and the *Staffing and Resource Adequacy* subscale ($t = -2.54$, $p = .01$) compared to those not planning to leave. There were no significant differences between these two groups in their perceptions of working relationships between nurses and physicians.

Several subgroup comparisons (CNN vs. not CNN; urban vs. suburban; urban vs. rural; suburban vs. rural; for-profit vs. not-for-profit) are reported but were underpowered, and a larger sample size is needed to draw conclusions with confidence regarding the results. Mean subscale scores for nurses who were CNNs did not differ significantly from those who were not. Moreover, there were no significant differences in subscale mean scores between nurses who worked in urban compared to suburban dialysis facilities and between those who worked in suburban compared to rural units. Of note, mean differences in the *Staffing and Resource Adequacy* subscale scores for nurses who worked in urban dialysis units (mean score = 2.21) compared to nurses who worked in rural dialysis facilities (mean score = 2.44) approached significance ($t = -2.02$, $p = .04$), suggesting that nurses in urban dialysis units may disagree to a significantly greater extent that staffing and support resources are adequate compared to nurses in rural facilities. Mean differences in three subscale scores for nurses working in for-profit dialysis facilities compared to those working in not-for-profit dialysis units also approached significance. Nurses working in for-profit dialysis facilities reported lower *Nurse Participation in Dialysis Provider Affairs* subscale mean scores ($m = 2.20$), that is, more disagreement, compared to those working in not-for-profit facilities ($m = 2.38$) ($t = -2.17$, $p = .03$). The for-profit group also reported lower *Nurse Manager Ability, Leadership, and Support of Nurses* subscale mean scores ($m = 2.55$) ($t = -1.99$, $p = .05$) and *Staffing and Resource Adequacy* subscale mean scores ($m = 2.20$) ($t = -2.66$, $p = .02$) compared to the not-for-profit group ($m = 2.76$; 2.47, respectively). These findings suggest that nurses who work in for-profit dialysis facilities may disagree to a significantly greater extent that the dialysis organization supports a participatory role and valued status of nurses' compared to those nurses working in not-for-profit units. Moreover, nurses' perceptions of staffing and resource adequacy and nurse manager ability in for-profit facilities may differ significantly (i.e., more disagreement that staffing is adequate and the nurse manager is supportive of nurses) from nurses' perceptions of these characteristics in not-for-profit dialysis units. It is important to note that differences in staff nurses perceptions of staffing adequacy in for-profit versus not-for-profit facilities are consistent with data from the Dialysis Outcomes and Practice Patterns Study (DOPPS) that indicates that the patient-to-staff ratio is higher (i.e., lower staffing) in for-profit units compared to not-for-profit units (Mapes et al., 2001).

Discussion

The organization and culture of magnet hospitals have been shown to attract and retain nurses and improve outcomes. Little is known about the extent to which staff nurses' perceive attributes of magnet hospitals in the freestanding hemodialysis facility work environment. This study was conducted to provide a preliminary description. Both intra- and interdisciplinary relationships within hemodialysis facilities were viewed quite positively by a majority of nurses, and these findings are consistent with a survey of nurses in hospitals and other settings that indicated that nearly 80% of nurses rated relationships between nurses and physicians as good to excellent (NurseWeek/AONE, 2002). Collegial nurse-physician relationships are a significant attribute in magnet hospitals, and collaboration between nurses and physicians has been identified as an important characteristic that significantly contributes to patient outcomes in these settings. For example, outcomes such as lower mortality rates, lower risk-adjusted lengths of stay, decreased nurse turnover, and an increased ability for staff to meet family members' needs have all been reported in relation to higher levels of nurse- physician collaboration in intensive care units (Brett & Tonges, 1990; Caruso & Payne, 1990; Davis, 1992; Fralic, 1992; Koerner, 1992). These findings indicate that the positive professional relationships in freestanding hemodialysis units reported in this study are a work environment strength that should be nurtured, supported, and further explored.

On the other hand, while intra- and interdisciplinary relationships in hemodialysis units appear to be positive, nurses' perceptions of organizational support for a participative role and valued status of nurses in the work setting depict a different picture. A majority of nurses did not feel that they had an opportunity to participate in policy decisions or the internal governance of the dialysis unit. Moreover, just one half of the nurses indicated that they had control over their practice and that there was support for new and innovative ideas about patient care. Nurse control or autonomy over practice is a key feature in magnet hospitals and is simply defined as control over work (Scott, Sochalski, & Aiken, 1999). Two types of autonomy have been described: organizational and clinical (Mundinger, 1980). Organizational autonomy involves an environment that supports staff nurses' participation in active decision making that assists in guiding the unit and organization. Clinical autonomy is described as the scope of practice for which nurses are accountable. The results from this study suggest that many staff nurses in freestanding hemodialysis units perceive very little organizational and clinical autonomy. In fact, many of the nurses appeared so frustrated regarding their lack of

control that they provided written comments on the back of the survey instrument. The following two comments illustrate their perceptions of control in their work settings.

"… RNs and patient care technicians should not be seen as bicarb techs (as in mixing) or as biohazardous waste handlers. One unit used to employ technicians to handle these functions but has recently determined that patient care staff can do this as well as dialyze 3 or 4 patients per RN or technician at the same time. We weren't asked, just told this is how things would go. I am tired of powerlessness, the "story" of nursing. I can quit and move on…."

"… these responses deal with our outpatient clinic environment, as noted. When providing contracted care for acutes in the hospital setting, I have greater autonomy, support, supplies, etc. from the hospital staff. Therefore, when working acutes, I am better supported and satisfied."

Staff nurses hold critical positions in hemodialysis units, and the findings in this study indicate that the development and implementation of models of nursing care in dialysis organizations that foster decentralized decision making by staff nurses, unit self- governance, and participative management with open communication could promote an organizational culture of support for an autonomous role for staff nurses in these settings.

A majority of nurses also perceived a lack of administrative attention to their concerns, contributions to patient care, and career development and advancement needs. These findings are consistent with findings from a cross-national study of over 41,000 nurses in five countries who work in acute care hospitals (Aiken et al., 2001). A majority of nurses in Aiken's study indicated dissatisfaction with the way administration listens and responds to employee concerns, acknowledges nurses' contributions to patient care, and provides advancement opportunities. Notably, only 30% of nurses in our study reported that a nurse in a senior management position within the dialysis organization is visible and accessible to staff. It has been noted that nurse executives help to integrate and identify nursing within the larger hospital organization, and the visibility of the nurse executive to staff nurses helps to foster the recognition of nurses' contributions and gives nurses a greater opportunity to express their concerns and suggestions (Clifford, 1992). While nursing leadership at the executive level (i.e., chief nursing officer [CNO]) is an important feature in magnet hospital environments, CNO positions do not exist within most dialysis provider organizations, making it difficult, if not impossible, for dialysis organization executives to articulate, integrate, or support a "discipline" of nursing within the organization and advocate for nursing staff. Moreover, the infrastructure of dialysis organizations (e.g., geographic isolation of hemodialysis facilities and staff from organizational administrative/executive staff) may also hinder effective mechanisms for executive/administrative staff to communicate and respond to nurses' concerns. Clearly, the findings from this study and magnet hospital research suggest that dialysis organizations will have to consider effective, creative, and open communication opportunities that cross geographic boundaries between organizational executives/administrators and staff in hemodialysis facilities to provide forums for administrative staff to listen and respond to the concerns of nurses. Moreover, findings also indicate a need for dialysis organizations to adopt a culture of staff recognition for their contributions to patient care as well as a commitment to the development of creative solutions (e.g., Web-based conferencing) that address the learning and career development needs of nurses within hemodialysis facilities.

Staffing in freestanding hemodialysis units is also a contentious issue, and data from this study indicate that nurses perceive staffing and resource adequacy negatively. A majority of nurses reported that there is not enough staff to get the work done, not enough RNs on staff to provide quality patient care, inadequate support services for nurses to spend time with their patients, and insufficient opportunities to discuss patient care problems with other nurses. These findings are consistent with other studies that indicate that up to 77% of nurses perceive that staffing may have a negative impact on the quality of care provided by nurses, the amount of time that nurses have to devote to patients, and nurses' ability to collaborate with other team members (NurseWeek/AONE, 2002). It is important to note that adverse effects of hospital nurse staffing on patient and nurse outcomes have been reported. Notably, higher nurse staffing levels have been associated with lower Medicare and surgical inpatient mortality rates (Aiken et al., 1994; Aiken, Clarke, Sloane, Sochalski, & Silber, 2002), shorter hospital stays, and lower failure to rescue rates (Aiken et al., 2002; Needleman, Buerhaus, Mattke, Stewart, & Zelevinsky, 2002). In addition, higher patient-to-nurse ratios have been reported to be significantly associated with nurse burnout and job dissatisfaction (Aiken et al., 2002).

Staffing levels are of interest in this study because of the possible impact of dialysis unit staffing patterns on patient and nurse outcomes. While little is known of the relationship between nursing staffing patterns and patient outcomes in hemodialysis units, data from DOPPS offers some insight. DOPPS data has revealed that patients treated in facilities with relatively experienced staff (i.e., percent of nursing staff with more than 3 years experience) had a significantly lower risk of arteriovenous fistula and graft failure compared to facilities with relatively inexperienced staff (i.e., percent of nursing staff with less than a year of experience) (Pfifer et al., 2002). Moreover, Pfifer also noted that patients treated in facilities with relatively inexperienced nursing staff had a significantly higher mortality risk. These data are of utmost importance in the context of the current nursing shortage and indicate that hemodialysis patient outcomes may be measurably associated with staffing patterns in hemodialysis facil-

ities that are potentially modifiable, but likely difficult to amend in the current environment. While the nurses in our study had significant nephrology experience, the mean age of the sample was 45 years, representing a nursing workforce in hemodialysis settings that is consistent with the aging U.S. RN workforce (Buerhaus, Staiger, & Auerbach, 2000). Moreover, the percentage of nurses in the sample under the age of 30 and having the potential for a long-term career in nephrology was quite low (5%). As "baby boomer" nurses begin to retire, career opportunities for women continue to broaden, and the nursing faculty shortage worsens, dialysis providers will likely continue to face difficulty in filling vacant nursing positions. Solutions that address the shortage of nurses in hemodialysis settings must not only include strategies to increase the supply of new nurses entering nephrology settings, but must also include efforts to retain current nurses and to adapt the hemodialysis work environment to support the practice of an aging workforce. Clearly, the traditional use of rewards for new employees to increase staffing levels, such as sign-on bonuses, penalizes those who remain loyal. To retain nurses, dialysis organizations will have to develop policies that foster, recognize, and reward retention and organizational loyalty. Moreover, while a richer nursing skill mix is characteristic of magnet hospital environments, the typical skill mix in hemodialysis units is 30% licensed (including RNs and licensed practical nurses) to 70% unlicensed personnel (Bednar et al., 2002). One challenge for executive/administrative staff in dialysis organizations is to identify effective models of care for hemodialysis units that enable nurses to provide quality patient care (e.g., the use of an advanced practice nurse as part of the dialysis team) as well as gain a clear understanding of what is required to ensure successful implementation of these models.

Finally, nearly 2 out of 10 of the nurses in this study reported an intention to leave their jobs within the next year. This finding is consistent with similar reports that indicate that 20% of nurses in U.S. hospitals intend to leave their jobs within the same time frame (Aiken et al., 2001). While nurses in our study who intended to leave their jobs were not queried about their reasons for leaving, data from other studies have indicated that job dissatisfaction and burnout may be important predictors of nurses' intentions to leave their jobs (Aiken et al., 2002; Sochalski, 2002). For example, 43% of hospital nurses who reported high burnout and were dissatisfied with their jobs intended to leave their current job within the next 12 months compared to only 11% who were not burned out and who remained satisfied with their jobs (Aiken et al., 2002). Inasmuch as job satisfaction and low levels of emotional exhaustion and burnout are features of magnet hospital environments, dialysis organizations might consider a retention strategy that includes the assessment of these important nurse outcomes and their relationship to hemodialysis nurse retention. Factors contributing to job dissatisfaction and burnout in hemodialysis facilities could be explored and addressed, and the impact of these efforts on retention could be documented.

Limitations. The study sample was drawn from nurses who were members of a professional organization (ANNA). There may be characteristics of this group that differ uniquely and significantly from staff nurses in hemodialysis units who do not belong to ANNA. Therefore, the perceptions of the staff nurses in this study cannot be generalized to all staff nurses who work in hemodialysis settings. A larger study is needed with a representative sample drawn from the population of staff nurses who work in hemodialysis units.

Secondly, the characteristics that nurses rated in this study were derived from characteristics that nurses perceived as important in hospital environments. While the nurse responses in this study compare similarly to reports of nurses in hospitals and other settings (Aiken et al., 2001; NurseWeek/AONE, 2002), a confirmatory factor analysis of the PES-NWI subscales in a dialysis nursing sample is needed to confirm the five PES-NWI constructs and subscale items for the dialysis work environment.

Finally, the 39% response rate to this survey suggests there could be differences between the group who responded and those who did not. While it is impossible to rule out response bias, the similarity of nurses' responses in our survey to those in hospitals and in other settings that have been reported in recently published surveys lead us to believe that there was no systematic tendency for specific types of nurses to respond to the questionnaire.

Conclusion

Research in hospitals has begun to provide the empirical evidence that nursing matters greatly in the ability of hospitals to provide high quality patient care and prevent avoidable adverse patient outcomes (Buerhaus et al., 2002). Despite the paucity of research related to the relationship between nursing and patient outcomes in freestanding dialysis settings, it is intuitive that nursing matters in these settings as well. Dialysis organizations need an adequate supply of qualified and competent RNs to provide patient care, contribute to the attainment of optimal patient outcomes, and meet the needs of a growing and increasingly older patient population. However, the supply of nurses in dialysis settings is dwindling, and we must gain a clear understanding of work environment factors that encourage and discourage the recruitment and retention of qualified nurses in freestanding dialysis units. Evidence from magnet hospital research can help us to understand important aspects of the dialysis work environment that may serve as important contributors to the shortage of nurses in hemodialysis units. This study provides a preliminary description of some of the factors that affect nurses' perceptions of the work environment in freestanding hemodialysis facilities; however, further work is needed in this area.

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