Healthy Work Environments

Clinical Units With the Healthiest Work Environments

Claudia Schmalenberg, RN, MS
Marlene Kramer, RN, PhD

PRIME POINTS

- Outpatient care clinics, oncology units, and neonatal intensive care units have the healthiest work environments, the most job satisfaction, and the highest nurse-assessed quality of care.
- Operating rooms/postanesthesia care units and telemetry units have the least healthy work environments.
- The extent of confirmation of a healthy work environment, job satisfaction, and perceived quality of care differed significantly by nurses’ certification and experience and by shift usually worked but not by education.

In the first article in this series, “Confirmation of a Healthy Work Environment,” evidence to support 4 key points was presented:

1. The work environment of nurses at the front line in hospitals must be improved if patients are to receive safe, quality care and if nurses are to experience professional fulfillment and job satisfaction, remain in their positions, and experience less turnover, job stress, and burnout.

2. In 2001, staff nurses in 14 magnet hospitals identified, from the original criteria of a magnetic work environment, 8 work processes essential to job satisfaction and work productivity⁷ (Table 1). In their standards for establishing and sustaining healthy work environments,³ the American Association of Critical-Care Nurses defines a healthy work environment in the same manner: satisfying and productive. The original (1984) magnet hospital designation was made on the basis of an organization having met the 4 original criteria of a magnet hospital: attraction and retention of nurses, nurses’ job satisfaction, and productivity of quality patient care. Because a causal model study⁴ established that 80% to 86% of attraction, retention, and job satisfaction was due to being able to give quality patient care, productivity alone was used as the main definer of needed attributes for a healthy work environment. The Essentials of Magnetism (EOM) is a tool used to measure the 8 work processes (Table 1) needed in a healthy work environment; the tool can also be used to measure the 6 standards of the American Association of Critical-Care Nurses.³ The validity, reliability, and psychometric properties of the EOM have been established.⁵,⁶

3. The structure-process-outcome model⁸ has guided the evaluation of health care systems for almost 4 decades. Structures, the domain of nurse executives, are “having the right things”—systems, programs, policies—in place. Processes, relationships, and interventions, the domain of the professional staff at the front line, are “doing the right things right.” Outcomes, the domain and responsibility of nurse executives, nurse managers, and clinical nurses, are “having the right things happen.” All 3 components are needed and must be in place for a healthy work environment.

4. Only staff nurses can confirm a healthy work environment, that is, can confirm whether the right things are in place so that the nurses can
provide quality patient care. Administrative personnel need this input and confirmation to improve the work environment and achieve organizational goals.

Background

Staff nurses in magnet hospital have consistently reported healthier, more productive work environments than have nurses in nonmagnet comparison hospitals.5,6,8 Comparison hospitals are nonmagnet hospitals that have requested an EOM internal evaluation of their unit work environment and preferably have had a 50% response rate, or at least 35%. Magnet designation does not automatically mean that staff nurses on all units confirm that they have a healthy work environment, and magnet hospitals are not the only hospitals in which staff nurses on some units report a healthy work environment. Since 2004, we have established a National Magnet Hospital Profile (NMHP) biannually. This profile consists of the range and mean of all hospitals in the highest statistically significant homogeneous subset when EOM scores of all clinical nurses who completed the EOM during the preceding 2 years are analyzed. In 2007, the scores of more than 10,000 nurses in 18 magnet and 16 comparison hospitals were analyzed (analysis of variance with post hoc analysis and Tukey statistic) and the current profile was established.4 The number of magnet hospitals in the NMHP has varied from 84% to 90% over the years; each time the NMHP has been established, some comparison hospitals have achieved the NMHP and some magnet hospitals have not.5,6,9

A healthy work environment is a group-level phenomenon. The least common work-group denominator in a hospital is the clinical unit or clinic. Thus, individual-level data must be aggregated to the unit/clinic level, and a representative number of surveys from a clinical unit must be obtained to ensure that the data are valid, reliable, and representative of the unit.10 In the studies5,6,8 upon which the NMHP are based, in both magnet and comparison hospitals, some clinical units had total EOM scores in the 98th percentile of the profile, whereas other units in the same hospital had scores in the 80th percentile or lower. This finding illustrates a principle described many years ago: structures alone are not enough.

In a nationwide study of intensive care unit (ICU) structures such as physical layout, nurse-patient ratio, and availability of physicians and the effect of these structures on the outcome, reduced patient mortality, Knaus et al11 report that ICU structures alone were not enough to produce the desired outcome. Unless the structures enabled the work processes of clinical autonomy and nurse-physician collaboration, the desired outcomes did not occur.11 More recently, this same principle was confirmed for shared governance structures and the control of nursing practice work process. When shared governance systems are more structure than substance,12 are perceived by clinical nurses as chiefly structural, with nurses on councils and committees but without decision-making authority, the result is cynicism, unwillingness to participate, and reluctance to assume accountability for outcomes.13,14 Achievement of magnet-designated structures15 alone is not enough to produce a healthy environment, defined as nurses’ job satisfaction (meeting personal needs and goals) and productivity (being able to give quality patient care). Unless and until organizational systems and structures enable staff nurses to engage in the 8 essential

Table 1 Essentials of magnetism: attributes of a satisfying and productive work environment from the perspective of staff nursesa

| Working with other nurses who are clinically competent |
| Collegial/collaborative nurse-physician and interdisciplinary relationships |
| Autonomy, clinical decision making |
| Supportive nurse managers |
| Control of nursing practice |
| Support for education |
| Perception that staffing is adequate |
| Culture in which concern for patients is paramount |

a Based on Kramer and Schmalenberg.2

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References

work processes, desired outcomes will not be achieved.

**Purpose and Research Questions**

In this article, we report the results of a study in which we examined the impact of 5 environmental factors, (1) type of clinical unit, (2) education of the nurse, (3) experience of the nurse, (4) shift worked, and (5) specialty certification by a national organization, on 3 outcomes, (1) professional job satisfaction (total EOM score), (2) global job satisfaction, and (3) nurse-assessed quality of care.

We sought answers to questions such as these: Which clinical units report the healthiest, most productive work environment? How is a nurse’s education related to his or her perception of job satisfaction and quality of care? How does specialty certification affect outcomes? What effect do experience and shift usually worked have on outcomes? Comparing and contrasting environmental features of units and hospitals that have confirmed healthy working conditions with those that do not have such working conditions should enable development of strategic plans for environmental improvement.

**Method**

**Sample**

In this survey study, the sample consisted of 2990 staff nurses working on 206 clinical units in 8 magnet hospitals. These particular 8 magnet hospitals were selected to represent the 8 census-tract regions of the United States, to represent both community and academic hospitals of various sizes in cities of various sizes, and because we knew from previous testing that staff nurses in these hospitals confirmed that they had healthy work environments.

**Data Collection**

Data on the 5 environmental factors were collected via a demographic form attached to the EOM. These particular factors were selected because studies have indicated possible relationships between the factors and one or more of the outcome variables. For example, Aiken et al and Tourangeau et al reported lower mortality rates in hospitals that have a higher percentage of nurses with a BSN. Lower mortality is an outcome known to be associated with autonomy and collaborative nurse-physician relationships, 2 of the 8 essentials of a healthy work environment, and an outcome that would be expected to be included in the nurse-assessed quality of patient care indicator. Logically then, nurses with a BSN would score higher on the 3 outcome measures than would nurses with an associate degree or a diploma in nursing.

Three tools were used to collect data on the outcomes measures. The first is the EOM. Total EOM score is the composite of the 8 subscales, 1 subscale for each of the essential work processes described in Table 1. None of the essentials is optional; all are needed for a healthy work environment. In the aggregate, the EOM score is a measure of professional job satisfaction, that is, that aspect of job satisfaction derived from being able to “do a good job” or “give quality patient care.” Development and psychometrics of the EOM are described elsewhere.

The second tool, Global Job Satisfaction (GJS), is a global single-item indicator with the following benchmarks: 0, It’s terrible; 5, I’m satisfied; and 10, I love it. Respondents were
asked to consider all aspects of their jobs—personal, professional, and what Maslow terms hygienic factors in his hierarchy of needs: factors such as salary, benefits, physical environment, and work schedules. GJS scores reflect the respondents’ overall perceptions and assessments of job satisfaction, that is, the extent to which the respondents are getting personal needs met on the job.

The third tool, Nurse-Assessed Quality of Care (QC) is also a global single-item indicator. It is used to measure, on a 0- to 10-point scale, the respondent’s perception of the “usual quality of care provided to patients on your unit.” Benchmarks for the QC scale were 0, dangerously low; 5, safe but not much more; and 10, very high quality.

Global single-item indicators were selected to measure staff nurses’ perceptions of the quality of patient care provided on their unit and their overall job satisfaction for several reasons. Youngblut and Casper’s review of the psychometric performance of global single-item indicators indicated valid and reliable results. Such indicators are increasingly being used in both national and international nursing studies and in measures of symptom intensity (pain) in the clinical arena. Global single-item measures allow participants to define the concept in a way that is personally meaningful. The measures can reflect individual differences, require that participants consider all aspects of a phenomenon, ignore aspects that are not relevant, and differentially weight the other aspects according to the participants’ values and ideals. We developed the GJS and QC tools; similar single-item indicators have been used by others.

### Data Analysis

Individual responses were aggregated to the unit level to answer questions of differences by clinical unit. For these analyses, the mean score of the unit was used. For all other research questions and for those involving both group (clinical unit) and individual (education, experience, certification, shift worked) levels of phenomena, statistical procedures such as descriptives, frequencies, and analyses of variance were used on individual responses. Clinical units were grouped as much as logical and reasonable to equalize numbers (Table 2). Units in pediatric hospitals were grouped by medical rather than age specialization.

<table>
<thead>
<tr>
<th>Grouped clinical unit label (in alphabetical order)</th>
<th>Example of units included</th>
<th>No. of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergency department</td>
<td>Emergency room, flight transport</td>
<td>181</td>
</tr>
<tr>
<td>General medical, general surgical or general medical-surgical combined on the same unit</td>
<td>General medical or surgical units with some designated pediatric beds</td>
<td>300</td>
</tr>
<tr>
<td>Intensive care unit</td>
<td>Coronary care and medical patients</td>
<td>134</td>
</tr>
<tr>
<td>Medical</td>
<td>Medical and surgical intensive care unit patients combined on one unit</td>
<td>158</td>
</tr>
<tr>
<td>Medical/surgical</td>
<td>Intensive care nursery, pediatric intensive care unit</td>
<td>248</td>
</tr>
<tr>
<td>Neonatal</td>
<td>Trauma, neurosurgical</td>
<td>157</td>
</tr>
<tr>
<td>Surgical</td>
<td>Rehabilitation, geriatrics, dialysis, respiratory, renal, stroke</td>
<td>229</td>
</tr>
<tr>
<td>Medical specialties</td>
<td>Inpatient only</td>
<td>215</td>
</tr>
<tr>
<td>Oncology</td>
<td>Telemetry, medical step down</td>
<td>132</td>
</tr>
<tr>
<td>Telemetry</td>
<td>Step down, gynecological surgery</td>
<td>148</td>
</tr>
<tr>
<td>Surgical specialties</td>
<td>Orthopedics and sometimes designated neurology beds on same unit</td>
<td>118</td>
</tr>
<tr>
<td>Orthopedics</td>
<td>Newborn nursery, labor and delivery, postpartum, birthing centers</td>
<td>224</td>
</tr>
<tr>
<td>Obstetrics</td>
<td>Operating, inpatient postanesthesia care units</td>
<td>251</td>
</tr>
<tr>
<td>Operating room</td>
<td>Outpatient</td>
<td>220</td>
</tr>
<tr>
<td>Care clinics</td>
<td>Asthma, teen, rehabilitation, diabetic</td>
<td>220</td>
</tr>
<tr>
<td>Procedural clinics</td>
<td>Endoscopy, cardiac catheterization, radiology, same-day surgery</td>
<td>224</td>
</tr>
</tbody>
</table>

*Table 2: Grouped clinical units with examples and number of respondents*
Results and Discussion

Clinical Units With the Healthiest, Most Productive Work Environments

Professional Job Satisfaction (Total EOM Score)  
Total EOM scores for grouped clinical units are presented in descending order in Figure 1, with the NMHP mean inserted for perspective and comparison. All grouped clinical units with professional job satisfaction scores greater than the NMHP mean of 291 had professional job satisfaction scores significantly higher \( (P=.05) \) than those for operating rooms/postanesthesia care units (PACUs; mean, 275). Outpatient care clinics (mean, 302) and oncology units (mean, 299) had scores significantly higher \( (P=.04) \) than did obstetric units (mean, 284) and operating rooms/PACUs (mean, 275).

Several factors need to be considered when interpreting these results. First, although more than half of the units had scores greater than the NMHP mean, outpatient care clinics and oncology units clearly had the most productive and healthy work environments. Second, high scoring and low scoring are relative. Although the scores for only 8 of the 15 grouped units exceeded the NMHP mean, all but 1 of the grouped units had scores within the NMHP, indicating, in general, very healthy work environments on the clinical units in this 8-hospital sample. Third, except for obstetric units, at least 7 and usually all 8 hospitals were represented in each of the grouped clinical units. This fact markedly increases the generalizability of the results. Fourth, the grouping of clinical units may not be perfect or the best. We were guided by common hospital practice and by the way in which responsibilities of nurse managers are often allocated, for example the grouping of operating rooms and PACUs.

Global Job Satisfaction  
All units except operating rooms/PACUs (mean, 6.39) had GJS scores greater that the NMHP mean of 6.58 (Figure 2). Nurses on outpatient care clinics (mean, 7.77) and neonatal intensive care units (mean, 7.73) rated their job satisfaction significantly higher \( (P=.04) \) than did nurses on all other units except surgical specialties and oncology units. Nurses in operating rooms/PACUs had the lowest overall job satisfaction scores (mean, 6.39).

Not all investigators group clinical units as we did, so comparisons must be made with caution. In a recent study of 55 516 nurses who completed the job satisfaction
component of the National Database of Nursing Quality Indicators, Boyle et al\cite{17} reported that pediatric and rehabilitation nurses were the most satisfied with their jobs, whereas nurses in emergency departments and surgical services (operating rooms/PACUs) were the least satisfied. If neonatal ICUs are considered pediatric units, some direct parallels can be drawn between the results of that study\cite{17} and our study. Both studies had nationwide samples, and in both, nurses in pediatric-type units (neonatal ICUs) reported high job satisfaction and those in operating rooms/PACUs reported the lowest job satisfaction.

In an electronic nationwide survey of 4034 critical care nurses (22% in magnet hospitals) who completed a 4-point single-item indicator to rate overall job satisfaction, Ulrich et al\cite{32} reported that 21% of the nurses were somewhat to very dissatisfied (score 1 or 2) with their jobs. In contrast, in our study, 13% of the nurses on the 4 combined critical care units were dissatisfied (4 or lower on a 10-point scale) with their current job.

**Nurse-Assessed Quality of Patient Care** Five of the 15 grouped clinical units were at or above the NMHP mean on the QC single-item indicator (Figure 3). Outpatient care clinics (mean, 8.76), neonatal ICUs (mean, 8.57), and outpatient procedural clinics (mean, 8.53) had significantly higher ($P=.001$) QC scores than did medical specialties (mean, 8.0), operating rooms/PACUs (mean, 7.99), obstetrics units (mean, 7.96), orthopedics units (mean, 7.74), and general medical-surgical units (mean, 7.65). Nurses working on orthopedics and general medical-surgical units reported the lowest QC scores.

In a study\cite{23} of 2969 nurses in Pennsylvania hospitals who used a 4-point scale to assess quality of patient care, 21% of the nurses rated care as fair to poor, the same percentage reported in the 2006 survey\cite{32} of critical care nurses. In contrast, in our study, only 4% of the overall sample of 2990 nurses and 3% of the critical care unit subsample rated the quality of care on their units as unsafe to dangerously low (4-0 on a 10-point scale). The number of nurses working in magnet hospitals in the 2002 study by Aiken et al\cite{23} is not known, but it probably was small because Pennsylvania had few magnet hospitals at the time. In the survey of critical care nurses by Ulrich et al,\cite{33} 22%
worked in magnet hospitals. All nurses in our sample were in magnet hospitals. From analysis of these results across several studies, we conclude that positive nurse-assessed evaluation of the quality of patient care on a unit is strongly associated with the excellent work environment of magnet hospitals and, secondarily, with the type of clinical unit (patient care and care needs provided on the unit, inpatient or outpatient, care or procedure).

Comparison of Clinical Units on Outcome Variables Logic would dictate congruence between a unit’s scores for professional job satisfaction, global job satisfaction, and quality of care. The rank order of the 15 grouped clinical units on these variables is presented in Table 3. The results were as expected with 3 exceptions. Orthopedic units ranked 5th in professional job satisfaction (ie, nurses on these units say they have very healthy work environments in which to practice) but 11th in global job satisfaction and 13th in quality of patient care. Inspection of the 8 subscale scores of the EOM provides a possible explanation for these unrelated rankings. The orthopedic units in these 8 hospitals ranked 15th, the lowest of all clinical units on the perception of adequacy of staffing subscale. They ranked very high or close to the top on the other 7 essentials, especially clinical autonomy, so their total score (sum of the 8) was quite high. Perception of inadequate staffing could explain why nurses on these units are neither satisfied nor feel that the care on the units is of high quality.

Outpatient procedural clinics illustrate the second exception. They ranked 9th for both professional and global job satisfaction. But quality of patient care was very high—third from the top. (The same picture occurs to a lesser extent on medical-surgical intensive care and telemetry units.) This anomaly may be caused by a dominant value in the nursing ethic of “always putting the patient before self,” to provide quality patient care despite environmental impediments. Although a healthy work environment contributes markedly to job satisfaction and quality care productivity, with self-sacrifice, quality care can and is given under less than ideal conditions. The literature also has some support for this explanation. Smith et al22 reported that noneconomic factors such as a service-quality orientation are more closely related to being able to give quality care than to job satisfaction.

Obstetrical units are the third exception. They ranked near the
bottom (14th) in professional job satisfaction and quality of patient care (13th), but overall, nurses on these units reported that they were satisfied with their jobs. This rather unusual picture may occur because patients’ outcomes in obstetrics are almost always positive, thus contributing to nurses’ high global job satisfaction.

**Relationship Between Education and Perceptions of Job Satisfaction and Quality of Care**

In our sample (n=2990), 58% of the nurses had a BSN or higher degree; 29% had an associate degree, and 13% had a diploma in nursing. On each of the grouped clinical units in each of the 8 hospitals, some nurses had a master’s degree. Two nurses had earned doctorates, 1 worked on an oncology unit and 1 worked on a surgical ICU. Although this percentage of nurses with a BSN or higher degree does not meet the 71% goal of BSN-prepared staff set by chief nurse executives in university teaching hospitals, it exceeds the 55% goal set by the executives’ counterparts in community hospitals and is markedly higher than the 43% found nationwide. When our total sample was divided into subsets of nurses working in university hospitals and in community hospitals, the percentages of nurses with a BSN were 68 in academic hospitals and 50 in community hospitals, close to the desired goals.

Table 4 gives the percentages of nurses by education on grouped clinical units. The percentage of nurses with a BSN ranges from a low of 48.1 on general medical-surgical units to a high of 71.0 in surgical ICUs. None of the outcome measures differed significantly when data were analyzed by educational level. Mean professional job satisfaction scores were 288 for nurses with an associate degree, 289 for nurses with a diploma, and 291 for nurses with a BSN. These scores are all close to the NMHP mean of 291. Mean GJS scores were 6.96 for nurses with an associate degree, 7.13 for nurses with a diploma, and 7.03 for nurses with a BSN; all are higher than the NMHP mean of 6.58. Mean QC scores were 8.08 for nurses with an associate degree, 8.12 for nurses with a diploma, and 8.17 for nurses with a BSN; all are lower than the NMHP mean of 8.26.

This lack of difference by educational level is similar to the results of some studies and different from the results of others. In an examination of perceptions of the work environment by nurses with different educational preparation, Cimiotti et al found no significant differences. This finding is similar to our finding for professional job satisfaction. On the other hand, Aiken et al and Tourangeau et al found that lower mortality was related to increases in the number of nurses who had a BSN. Although the goal of a more educated nurse workforce has not yet been completely reached, magnet hospitals come close. Nurses must continue to strive for this goal, because some findings indicate that education does make a difference in quality patient outcomes.

**Effect of Specialty Certification on Outcomes**

Percentages of nurses with specialty certifications by grouped clinical units are presented in Table 4. Only specialty certifications by
national credentialing organizations, not internal hospital certifications or skill certifications such as Advanced Cardiac Life Support, Pediatric Advanced Life Support, or Trauma Nursing Core Course, were considered in this analysis. The percentage of nurses certified in a specialty ranged from a low of 13 on general medical-surgical units to a high of 39 on oncology units, with 27 for the total sample. Our overall percentage exceeds the American Nurses Credentialing Center magnet-designated 2005 benchmark of 23% certified nurses, although one-third of the grouped units in our study did not meet this standard for magnet hospitals.

Both certified and noncertified nurses confirmed that they worked in healthy work environments; professional job satisfaction (total EOM) scores did not differ significantly between certified (mean, 292) and noncertified (mean, 288) nurses, although the certified nurses had higher scores. On the global job satisfaction and nurse-assessed quality of care single-item indicators, certified nurses (GJS, 7.25; QC, 8.26) reported significantly higher mean scores ($P = .008$) than did noncertified nurses (GJS, 6.94; QC, 8.04) for both outcome measures.

A more job-satisfied work force that rates a unit’s quality of patient care very high is certainly a desirable goal and is a reason alone for encouraging and helping more nurses to obtain specialty certification from national credentialing organizations. Cary reported that 95% of the certified respondents in the International Study of the Certified Nurse Workforce indicated that they had made at least one change in their practice as a result of their certification; 40% of those certified for 5 years or less reported improved confidence in detecting complications and taking prompt action. Our results as well as those of Cary suggest that more study of the effects of certification on actual patient outcomes is warranted.

Two factors may have affected the percentages of nurses certified and the subsequent outcome scores. Only one certification was counted per respondent, and about 0.5% of the respondents noted that they had more than a single specialty certification. A factor that may balance the percentage of certified and non-certified nurses in the opposite direction is that we made no attempt to judge the relevance of the certification listed to the unit in which the respondent was currently working; for example, we found that many “aging” ICU nurses who had transferred to

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**Table 4** Percentages of BSN and certified nurses, experience by type of clinical unit

<table>
<thead>
<tr>
<th>Clinical unit type</th>
<th>≥ BSN, %</th>
<th>Certified, %</th>
<th>Mean, y</th>
<th>No. of years, %</th>
<th>Experience as registered nurse</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>≤5</td>
<td>5+ to 15</td>
</tr>
<tr>
<td>Outpatient care clinics</td>
<td>57.7</td>
<td>34.1</td>
<td>17.5</td>
<td>12.2</td>
<td>34.3</td>
</tr>
<tr>
<td>Oncology</td>
<td>56.9</td>
<td>38.7</td>
<td>11.6</td>
<td>35.6</td>
<td>34.6</td>
</tr>
<tr>
<td>Neonatal intensive care</td>
<td>68.0</td>
<td>25.6</td>
<td>13.2</td>
<td>29.7</td>
<td>32.2</td>
</tr>
<tr>
<td>Surgical specialties</td>
<td>56.5</td>
<td>20.4</td>
<td>11.5</td>
<td>42.5</td>
<td>27.4</td>
</tr>
<tr>
<td>Orthopedics</td>
<td>61.1</td>
<td>19.6</td>
<td>10.9</td>
<td>38.2</td>
<td>35.5</td>
</tr>
<tr>
<td>Emergency department</td>
<td>53.7</td>
<td>36.9</td>
<td>12.2</td>
<td>32.2</td>
<td>35.1</td>
</tr>
<tr>
<td>Medical intensive care</td>
<td>61.9</td>
<td>23.1</td>
<td>12.3</td>
<td>35.5</td>
<td>30.6</td>
</tr>
<tr>
<td>Medical specialties</td>
<td>61.2</td>
<td>23.9</td>
<td>12.0</td>
<td>35.9</td>
<td>34.1</td>
</tr>
<tr>
<td>Procedural clinics</td>
<td>51.2</td>
<td>31.7</td>
<td>20.1</td>
<td>6.6</td>
<td>28.2</td>
</tr>
<tr>
<td>Surgical intensive care</td>
<td>71.0</td>
<td>26.1</td>
<td>12.4</td>
<td>34.4</td>
<td>29.8</td>
</tr>
<tr>
<td>General medical-surgical</td>
<td>48.1</td>
<td>12.9</td>
<td>12.0</td>
<td>41.0</td>
<td>25.3</td>
</tr>
<tr>
<td>Medical-surgical intensive care</td>
<td>62.0</td>
<td>35.2</td>
<td>13.9</td>
<td>21.3</td>
<td>43.2</td>
</tr>
<tr>
<td>Telemetry</td>
<td>51.2</td>
<td>17.5</td>
<td>9.2</td>
<td>45.0</td>
<td>34.1</td>
</tr>
<tr>
<td>Obstetrics</td>
<td>65.0</td>
<td>20.2</td>
<td>13.0</td>
<td>28.3</td>
<td>34.7</td>
</tr>
<tr>
<td>Operating rooms/postanesthesia care</td>
<td>48.8</td>
<td>31.6</td>
<td>17.8</td>
<td>19.5</td>
<td>26.6</td>
</tr>
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</table>

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outpatient endoscopy, cardiac catheterization, or same-day surgery units continued to maintain certification from the American Association of Critical-Care Nurses. In outpatient clinics, many nurses held oncology and orthopedic certifications. Nurses in medical and surgical specialties (Table 2) also listed a great variety of certifications.

Effect of Experience on Outcomes

Number of years employed as a registered nurse does not automatically equal years of experience. As one nurse explained, “Someone can have 7 years of experience or 1 year repeated 7 times.” And all of the experience may not have been on the unit in which the nurse was currently working. However, in our study we equated years employed and years of experience and did not attempt to ascertain how many of those years were on the current clinical unit. The magnet hospitals in our study had little turnover of staff and high retention of personnel. The items on the EOM were unit focused; if a respondent had not been on a unit long enough to feel comfortable answering the questions, he or she indicated this and did not complete the survey.

Nurses on the grouped clinical units varied in the mean number of years of experience (Table 4), from highs of 20.1 years on outpatient procedural clinics, 17.5 years on outpatient care clinics, and 17.8 on operating rooms/PACUs to lows of 10.9 years on orthopedic units and 9.2 years on telemetry units. Mean number of years of experience for the remaining 10 units ranged from 11.5 to 13.9. The mean for the 15 grouped clinical units was 13.3 years.

Scores for professional job satisfaction and quality of care did not differ significantly by years of professional nursing experience, although the scores followed the same general pattern as noted for global job satisfaction. The most experienced group of nurses, those with 30 or more years of experience, had significantly higher \( P = .001 \) job satisfaction scores than did nurses with 10+ to 15 years of experience. We have noted this somewhat anomalous picture in many of our research studies over the years as well as in the analysis and reports that we send to individual hospitals that test the quality of their work environments by using the EOM. In more than 100 hospitals, most of them magnet-designated but other hospitals as well, the most experienced and the most inexperienced nurses report healthier work environments, more job satisfaction, and a higher quality of patient care, regardless of what unit the nurses are working on, than do nurses with 5+ to 10 or 10+ to 15 years of experience.

Some investigators have reported similar findings, although not the bimodal distribution of very experienced and very inexperienced nurses in a single study. In a study of the effect of the magnet process on nurses’ perception of the work environment, Cimiotti et al\(^1\) found that nurses with 3 years or less of experience perceived more positive work environments than did nurses with different lengths of experience. Blegen et al\(^2\) found that more experienced nurses had the fewest medication errors and the fewest
number of patients falling, but the authors made no comments about less experienced nurses.

The finding that the most experienced and the least experienced nurses have more job satisfaction and report higher quality of care on the unit than do other nurses requires some attempt at explanation. The vulnerability of nurses with a combined 5+ to 15 years of experience is perhaps easier to explain than that of the least experienced group. Maybe the excitement and tremendous new learning of the early years as a professional nurse have passed, so that nurses with 5+ to 15 years of experience have become somewhat jaded. Or, perhaps they have competing life interests. Undoubtedly, 5 to 15 years after graduation is the time when most nurses are bearing children, raising families, and taking care of elder parents. Or perhaps similarities exist between 2 generations that have “skipped” the generation in between.

Effect of Shift Usually Worked on Outcomes

The shifts worked by nurses in hospitals today include regular 8-, 10-, 11-, and 12-hour day, evening, and night shifts; mixed day shifts; mixed evening and/or night shifts; and a wide variety of shifts both in number of hours and time of day in which nurses rotate from one shift to another. These may be a week/month of day shifts followed by a week of night shifts or it may be several different day and night shifts within the same week. We meticulously collect these data when the EOM is administered so that data on individual hospitals can be analyzed, but for this study, we collapsed the various shifts into 5 types: 8-hour days (28% of the sample), 12-hour days (35%), 12-hour nights (22%), 8-hour evenings and nights (6%), and rotating shifts (9%). The mixed 8- and 12-hour shifts were categorized as either 8 or 12 hours, depending on the predominant shift.

All 3 outcome variables differed significantly (P = .01) by shift usually worked. Nurses who worked 12-hour day shifts reported a work environment (mean professional job satisfaction score, 295) more conducive to giving quality patient care than did nurses on all other shifts (mean, 284) except 8-hour days. The mean professional job satisfaction score for nurses who worked 12-hour day shifts was considerably higher than the NMHP mean score of 291. Nurses who worked 8-hour evening/night shifts (mean score, 279) and rotating shifts (mean score, 287) reported the least productive and satisfying work environments. This same pattern held for the global job satisfaction indicator. Mean GJS scores were higher for nurses who worked 12-hour day shifts (7.14) than for nurses who worked 8-hour evening/night shifts (6.65). For nurse-assessed quality of care, the pattern differed slightly. Mean QC scores for nurses who worked 8-hour day shifts (8.37) were higher than the mean QC scores of all other groups (12-hour days, 12-hour nights, 8-hour evening/nights, and rotating
shifts) and exceeded the NMHP mean of 8.26.

That day-shift nurses confirm a healthier work environment is a pattern that we have seen in our research studies and in individual hospital analyses over the years. Many nurses have commented that day shifts provide more opportunity to perceive and assess the impact of essential environmental attributes such as collaborative relationships with physicians and the support of nurse managers than other shifts do.

The intermixture of 8- and 12-hour shifts presents 2 work process problems: handing over care of a patient from one nurse to another (patient hand-offs) and system for care delivery. Nurses on 8-hour shifts often must pick up a part of an assignment from nurses working 12-hour shifts (and vice versa), or they must hand over care of their patients to other nurses when hours do not match. Oftentimes, nurses report that they must switch care delivery systems from primary to team to overlapping primary and team within the same shift. Although 8-hour shifts are becoming less common, sometimes older nurses or nurses with children in elementary school prefer these shifts, because the nurses find 12-hour shifts too physically demanding or the shifts are not compatible with child care responsibilities.

Less standard hours for 8-hour shifts might help in handling peak workloads and still allow nurses who do not wish to work 12-hour shifts to make a valuable contribution to patient care and the unit workload. Shifts that begin at 1 PM and end at 9 PM may be a more practical 8-hour evening shift to provide service to patients returning from the operating room and new patients being admitted to the units. Rotating shifts have the negative feature of increased adjustment because of time changes and circadian rhythm, but nurses are quick to point out that intershift issues and problems tend to be fewer when more nurses are working rotating shifts.

Summary

When all 3 outcome variables are examined, nurses working in outpatient care clinics, oncology units, and neonatal ICUs report the healthiest work environments, are the most satisfied, and report the highest nurse-assessed quality of care for their unit. Nurses in operating rooms/PACUs and telemetry units report the least healthy work environments and are the least satisfied. Nurses working day shifts (8 and 12 hours) are more satisfied with their job and report better working conditions than do nurses on evening or night shifts. Global job satisfaction and quality care indicators are higher for nurses with specialty certifications than for nurses without such certification. The least experienced and the most experienced nurses report healthier, more productive work environments, perceive that patients receive a higher quality of care, and are overall more satisfied with their jobs than are nurses with 5 to 15 years of experience. In this study, nurses’ educational preparation was not statistically related to any outcome.

Staff nurses do not usually know the health of the work environment before they select their area of clinical practice. More often, clinical specialty is related to a passion or an interest. From the perspective of a staff nurse, the challenge then becomes, what can I do to improve my current work environment? In the next articles in this series, each of the 8 essentials of a healthy work environment identified by staff nurses will be addressed, and suggestions will be given as to how and what staff nurses might do to improve their practice environments so that they can give quality patient care.

The next article will be an in-depth look at 2 of the essentials of a healthy work environment: support for education and working with other nurses who are clinically competent. After defining the domains of competency and the educational programs available, we will present the results of interviews with staff nurses, nurse managers, and physicians on clinical units with confirmed healthy work environments who were asked what systems, structures, and practices support education and enable staff to further develop competence, to do the job well. CCN
Clinical Units With the Healthiest Work Environments
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