Perception of Adequacy of Staffing

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The Scene: Conference room where staff is assembling for morning report, 6:55 AM

Patient Roster: Essentially the same as yesterday

You: Have been working on this unit for 5 years. You’re a good nurse, a team player, and you enjoy your work. On the way into the conference room, you meet a peer, an experienced nurse that you’ve worked with quite a bit. You worked together yesterday.

Your Peer: “Patients aren’t too bad today—no crises and no new admits during the night so, if we have the same number and same people as we had yesterday, we should make it OK and patients will get what they need.”

You: “I agree. We had a few rough spots but on the whole it was a good day.” You enter the conference room and look at the assembled staff. You and your friend exchange glances. She rolls her eyeballs and you look at the ceiling and mutter to her: “It’s going to be a bad day at Black Rock!”

Your Peer: “Yes, and ‘flighty Sal’ is on today. She’s always so busy telling you her personal problems and what she did last night and is going to do tonight, that her head is always up in the clouds.”

You: “Yes, and did you see who just walked in? I didn’t know she was on today. She’s a good nurse but not a team player. At least you know that her patients will get good care, but she won’t lift a finger to help anyone else, and she’s so intolerant of new grads.”

Your Peer: “And with this kind of staffing, they expect us to practice primary nursing??? No way! We’ll be lucky if we get the basics done and keep everyone alive today.”

As with nurse manager support, staff nurses’ perceptions of adequate staffing are their reality. We learned this one the hard way. In this article, we share our experiences and the results of several research studies in our 2-decade journey toward identifying, understanding, and accurately measuring factors that affect nurses’ perceptions of adequate staffing.

PRIME POINTS

- Perceived adequacy of staffing depends on staff nurses’ perceptions of the work environment in the unit.
- Factors cited most often as affecting nurses’ perception of adequate staffing for quality patient care are
  - competency of the staff
  - teamwork
  - a flexible delivery system
  - sufficient budgeted positions for the acuity level of patients

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rescue, and patient mortality and (2) staffing structures including vacancy and turnover rates, nurse-to-patient ratios, skill mix, hours of care per patient day, and staffing by patient acuity. Despite mixed results, the findings are consistent enough for us to conclude that hospitals with better staffing structures have fewer adverse patient outcomes, and in general, increasing the number of nursing staff hours is associated with decreased rates of pneumonia, urinary tract infections, medication errors, falls, failure to rescue, and mortality. A major problem in staffing studies is that some studies focus on registered nurse hours whereas others focus on levels of nursing staff, so it is unclear whether all staff or only registered nurses were included.

Consumers also report adverse outcomes. In a National Consumers League report of 1139 people with recent hospital experience, 45% reported that they felt that their safety or the safety of their immediate family member was compromised by lack of available nurses. One-third indicated that medications were not received in a timely fashion and they did not receive adequate information about care before discharge.

A few studies have been focused on the relationship between structure and the process of perceived adequacy of staffing, or between structures, processes, and outcomes. Mark reports that structures such as smaller unit size, lower patient acuity, and consistent support services are positively associated with the process, that is, nurses’ perception of adequate staffing. Perceived adequacy of staffing was measured with a single-item indicator asking staff nurses to “evaluate the adequacy of staffing on this unit” with 5 options ranging from “very much above average” to “very much below average.” Laschinger reports a positive relationship between “perceived conditions for professional nursing practice,” one of which is staffing, and nurses’ feeling respected. In a recent Canadian study, Tourangeau et al reported that the outcome, lower 30-day mortality rates for 46,993 acute medical patients, was associated with structures such as a higher proportion of registered nurse skill mix and a higher proportion of baccalaureate-prepared nurses, and with processes such as higher nurse-reported adequacy of staffing and higher perception of quality of care among nurses. In both these studies, 4 of the items from the Nursing Work Index (Revised) were used to measure perceived adequacy of staffing. Examples of these items are “Enough staff to get the work done” and “Adequate support services allow me to spend time with patients.”

One of the earliest studies (from 1990) was focused only on the process aspect of perceived adequacy of staffing. In it, staff nurses were asked to identify factors that enabled them to provide quality patient care even when the numbers of staff were not adequate. The following 6 factors, labeled “work force extenders,” resulted from the analysis of the responses from 1747 staff nurses working in a large and varied number of hospitals across the country:

- Working with other nurses’ who are clinically competent
- Closed units with no floating policies
- Limited use of agency nurses
- Few new graduates
- High proportion of registered nurses
- Selective hiring practices

Although the body of knowledge with respect to nurse staffing structures and their effect on process and outcomes is growing, we still do not have a staffing model that accurately relates staffing structures to the process of perceived adequacy of staffing and to desired quality patient outcomes. The missing parts of the equation are an agreed-upon list of factors that affect staff nurses’ perceptions that staffing is or is not adequate and an accurate and standardized way of measuring perceived adequacy of staffing. Numbers of staff are important and essential. But even with sufficient numbers, staff nurses may still perceive that staffing is inadequate. Or, with the same numbers, one day staffing is perceived as adequate and the next day as inadequate. Factors affecting these perceptions and their measurement must be identified for a staffing model to be complete and useful.

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Some progress has been made. In 2001, staff nurses in magnet hospitals identified perceived adequacy of staffing as one of the 8 essentials of a healthy (job satisfying and productive) work environment and work began on development of an instrument, labeled the Essentials of Magnetism (EOM), to measure all 8 of these essentials. This work included development of a perceived adequacy of staffing (PAS) subscale designed to validly and consistently measure the factors that staff nurses identified as affecting their perceptions of adequacy of staffing. In 2005, the AACN published its 6 standards for establishing and maintaining healthy work environments. Standard 4, appropriate staffing, addresses the need to match nurses’ competencies with patients’ needs, adopt effective delivery systems, provide adequate support services, and have systems to evaluate outcomes so that data can be used to assess patients’ outcomes and systems’ effectiveness. This standard clearly looks at more than numbers of staff. As with all of the essentials of a healthy work environment, only staff nurses can confirm whether staffing structures are working effectively and efficiently.

In the next section, we share with you our journey of searching for first a comprehensive and then a universal, most salient list of factors that influence perceived adequacy of staffing and the measurement of these factors. This quest is not based on a single research study but rather is a synthesis of the methods (What We Did), results (What We Learned), and conclusions and interpretation (Decisions Made) of several studies and inquiries done between 2001 and the present. Details of the studies can be found in the references cited.

### Comprehensive List of Factors Affecting Perceived Adequacy of Staffing

#### What We Did

In 2001, when we interviewed 279 staff nurses in 14 magnet hospitals, the work force extenders identified by staff nurses a decade earlier prompted us to ask the question: “What, if anything, enables you to give quality patient care even if the numbers of staff are inadequate?”

#### What We Learned

Interviewee responses were grouped by similarity into the following 9 factors that positively affected nurses’ perceptions of adequacy of staffing. To differentiate, we termed these “enablers” of perceived adequacy of staffing.

1. Working as a team
2. Skilled, experienced, and knowledgeable nurses
3. Making autonomous clinical decisions
4. Computerized documentation and order entry
5. Collaborative multidisciplinary relationships, including physicians
6. Control of nursing practice and the practice environment
7. Motivated assistive personnel with additional training and a team mentality
8. Degree of patient acuity
9. Adequate support services

Another discovery was that when answering the question, “Is your staffing usually adequate?” staff nurses almost always countered with the question: “Adequate for what?” Responses included

- The kind of care I was taught in school where you could never do enough for a patient.
- Enough for minimum standards? For safe care?
- Enough for the delivery system we’re supposed to be using?
- Enough for quality or safe care? These are 2 different things, you know.

About 92% of staff and 91% of nurse managers and physicians report that they are adequately staffed to provide quality care more than 75% of the time.

Factors affecting staff nurses’ perceptions of adequate staffing and their measurement must be identified for a staffing model to be complete and useful.
Decisions Made

Because so many perceptual factors, some different, some the same, were identified as work force extenders in 1990 and as work enablers in 2001, we decided to follow the advice of Youngblut and Casper, leaving it up to respondents to process their own factors into the equation for perceived adequacy of staffing. Global single-item measures allow the subject to define the concept in a way that is personally meaningful, providing a measure that can be responsive to individual differences. Global single-item indicators require that subjects consider all aspects of a phenomenon, ignore aspects that are not relevant to their situations, and differentially weight the other aspects according to their values and ideals. Additionally, a modifier would be included in the global-item indicator so that staff nurses would know the appropriate referent in considering their response. The single-item indicator we developed was “The nurses on my unit feel that, most of the time, we are adequately staffed to give quality patient care.” Nurses were asked to rate their degree of agreement on a 4-point Likert scale with 4 = strongly agree, 3 = agree, 2 = disagree, 1 = strongly disagree.

Global Measurement of Perceived Adequacy of Staffing

What We Did

The EOM instrument with the single global-item indicator to measure perceived adequacy of staffing was administered to 2355 nurses in 16 magnet hospitals and to 1965 nurses in 10 comparison hospitals. We used this type of sample because magnet designation recognizes excellence in nursing that includes excellence in staffing structures and models. We hypothesized that nurses in magnet hospitals would score higher on the staffing item than would nurses in comparison hospitals.

What We Learned

We goofed! The 6 work force extenders and the 9 enablers may have been too many, but the single-item indicator also did not cut the mustard! In the 16 magnet hospitals, only 61% of the staff perceived that they were very adequately staffed for quality care. In the comparison hospitals, 51.5% indicated that they were very adequately staffed for quality care. Although this percentage difference is significant, of concern was the fact that 9 of the magnet hospitals had mean scores on this single-item indicator ranging from 1.85 to 2.1 on a 4-point scale (4 = well staffed), meaning they were not staffed to provide quality patient care most of the time. Such a mean score is certainly not indicative of adequate staffing, let alone the excellent staffing expected in magnet hospitals. Hospitals permitted us to query some of the staff with respect to what they were thinking when they answered the staffing question. The response was universal: “When you ask me whether or not we are adequately staffed, the only thing I think about is numbers.”

Decisions Made

Do a separate study to identify, from the 6 extenders and the 9 enablers, the most universal and salient factors affecting nurses’ perceived adequacy of staffing and use these as items on the staffing subscale of the EOM to measure staff nurses’ perceptions of the factors affecting adequacy of staffing.

Most Universal and Salient Factors Affecting Perceived Adequacy of Staffing

What We Did

In 2004, we used the previously identified work force extenders and enablers to construct a 15-item PAS subscale. The subscale was submitted to a panel of 32 judges in a variety of hospitals with instructions to comment on sentence structure, redundancies, and inclusiveness of the items. Based on the feedback from the judges, a revised 11-item PAS subscale was resubmitted to the judges and their final feedback affirmed that we had the most relevant and appropriate items. The 11-item subscale was administered to 729 nurses in 7 geographically spread academic and community hospitals; 3 were magnet, and 4 were comparison hospitals.

What We Learned

Results indicated that 6 factors —enough budgeted positions, teamwork, flexible delivery system, staffing adequate for quality care, staffing adequate for safe care, and staffing adequate for nurse job satisfaction—were most frequently cited by most of the respondents as affecting their perceptions of adequate staffing. The remaining 5 factors —support services, ancillary services, paid time off, inexperienced nurses, and reinforcing others performance—were dropped from
the PAS subscale of the EOM.16 Written-in comments and follow-up inquiries indicated that respondents were ambivalent about the “inexperienced nurse” item. They usually translated the term to mean “new graduate” and voiced ambivalence about the item:

- New grads are not a problem on all units—we don’t have any in [the intensive care unit]—but when you have them, the numbers of staff can be the same, but you definitely feel short staffed.
- I hate to say that new grads make us feel short staffed, but they do. You have to help them plus do your own work. But they are our future, our salvation, and well worth the investment.

Decisions Made

Put the 6 universal, most salient factors on the PAS subscale of the EOM. Eliminate inexperienced nurses on the basis of the study results but also because it is not as universal a factor as some units in some hospitals have new graduates and others do not.

Did It Work?

Are we now getting a clear, consistent, accurate, universal picture of how staff nurses perceive and judge the adequacy of the staffing on their units?

What We Did

To answer this question, we used the revised PAS subscale of the EOM to test 10,514 staff nurses in 18 magnet and 16 comparison hospitals.20 We also conducted qualitative interviews with 244 staff nurses, 105 nurse managers, and 97 physicians from 8 magnet hospitals who were working on 101 clinical units on which staff nurses had previously scored above the National Magnet Hospital Profile20 on the EOM, confirming that they had excellent unit work environments that included adequate staffing.14 In addition to qualitative questions regarding the process of perceived adequacy of staffing, interviewees were asked to estimate the percentage of time that they were able to provide quality care to patients on their units.

What We Learned

Through a secondary analysis of data published in an earlier article of ours,20 we found differences in the responses from nurses in magnet and comparison hospitals on all 6 of the factors related to perceived adequacy of staffing as measured on the PAS subscale of the EOM. The EOM is a 4-point “strongly agree” to “strongly disagree” scale. When the “agree” and “strongly agree” responses are combined, 65% of the staff nurses in the 18 magnet hospitals indicated that, most of the time, their unit was adequately staffed to provide quality care to patients. In the comparison hospitals, 43% of the staff nurses responded in like manner. As expected, the percentage figures for providing safe patient care in both magnet and comparison hospitals were higher than the percentage figures for providing quality care. Nurses in magnet hospitals indicated a much more positive staffing picture than did nurses in comparison hospitals on all but the “delivery system” item, where the responses were virtually the same (Table 1).

Analysis of the interview question regarding the percentage of time that staff reported they could give quality care to patients (Table 2) indicated that nurse managers perceived that...
the unit was staffed for quality care a larger percentage of the time (70%) than did staff nurses (63%) or physicians (56%). However, this difference is eradicated when the top 2 categories in Table 2 (75%-89.9% and 90%-100%) are combined. Ninety-two percent of the staff and 91% of the nurse managers and physicians report that they are adequately staffed to provide quality care to patients more than 75% of the time. This result is quite outstanding. However, it must be remembered that the units from which these professionals were selected for interviewing were strategically selected because staff nurses on these units had confirmed, through scores on the EOM, that they had healthy work environments, so the sample is somewhat biased toward the “top of the top.”

Additional analysis of the interview data indicated that the 2 most universal and salient factors affecting staff nurses’ perceptions that they were adequately staffed to give quality care were (1) who you work with (team players, clinically competent, cohesiveness of work group, and “we know each other”) and (2) recognition of patient acuity (administration takes into account the increasing acuity level of our patients when allocating positions to our unit). Both of these factors also appear on the PAS subscale of the EOM.

Decisions Made
The PAS subscale of the EOM, with its 6 mitigating factors, was more accurate for measuring perceived adequacy of staffing than was the single-item indicator. Staff nurses in magnet hospitals report considerably better staffing than their counterparts in comparison hospitals, the spread increasing from 10% in 2004 to a 22% difference between the 2 groups in 2006. Moreover, the better staffing for quality care was spread out over all of the participating magnet hospitals. The addition of the mitigating factors to the PAS subscale enables identification of areas where action can be taken to improve nurses’ perceptions of adequate staffing. We also need to consider revising the wording of the “job satisfaction” and the “budgeted position—patient acuity” items to better reflect the descriptions and responses provided by the interviewees and the written-in comments on the EOM.

What This Means to You
At a time when staffing shortages are only predicted to get worse, magnet hospitals seem to be able to maintain staff members’ perception of adequate staffing. This accomplishment is probably due to both actual numbers of staff as well as attention to the factors that affect workers’ perceptions of adequacy of staffing. Perceived adequacy of staffing can be improved by focusing on the clinical competence of staff, building cohesive teams, giving staff the freedom to alter delivery systems as necessary, and recognizing the unit level of patient acuity through allocated positions. Inclusion of these factors in the staffing model may well lead to an increase in perceived adequacy of staffing even if the numbers of staff do not increase markedly.

Since the restructuring of the 1990s, nursing care delivery systems seem to be in a state of disarray: primary nursing, modified primary, patient-centered care, total patient care for 8-, 10-, or 12-hour shifts, and new and old team nursing. Approximately 50% of the staff in both magnet and comparison hospitals indicated that the delivery system changes not only on a day-to-day basis, but from shift to shift, and also within shifts. “Someone has to cover the patients of the 7 to 3 nurses until 7:00 PM when the night 12’s come on.” The choice of a care delivery system is dependent upon availability and competence of staff and may need to be modified because of the myriad flexible shifts and changing staff composition. Given the realities of staffing systems and models today, appropriate unit-specific delivery structures may need to be developed because without structure, the process of delivering care becomes even more chaotic.

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Table 2 Perception of adequate staffing for quality care by professional role

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<thead>
<tr>
<th>Percentage of time quality patient care is provided</th>
<th>Staff nurse</th>
<th>Nurse manager</th>
<th>Physician</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-49.9</td>
<td>1.3%</td>
<td>1.1%</td>
<td>0%</td>
</tr>
<tr>
<td>50-74.9</td>
<td>6.8%</td>
<td>5.4%</td>
<td>9.1%</td>
</tr>
<tr>
<td>75-89.9</td>
<td>29.4%</td>
<td>23.9%</td>
<td>35.2%</td>
</tr>
<tr>
<td>90-100</td>
<td>62.6%</td>
<td>69.6%</td>
<td>55.7%</td>
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<tr>
<td>Totala</td>
<td>100.0%</td>
<td>100.0%</td>
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a Differences between total numbers of interviewees and these numbers are due to missing data.
The number of budgeted positions for registered nurses allocated to a unit is important to staff nurses’ perceptions that staffing is or is not adequate. Having sufficient budgeted, allocated positions, “the number of people we are supposed to have,” is the single most clear evidence that management recognizes the acuity level of our patients and the number and kind of people you need to care for these patients. Nurses call the situation of not having enough budgeted positions “short staffing us on the front end.”

The body of scientific knowledge regarding staffing structures, adverse patient outcomes and more recently, the structures and processes that affect patient outcomes, has grown. More study is needed to determine the range of effective hours of care by registered nurses needed for desired processes and patient outcomes. What kind of delivery system allows maximum effectiveness of nursing staff? What percentage of baccalaureate nurses on a unit produces the best outcomes for patients? The goal for the proportion of baccalaureate nurses has been set at 70% for academic teaching centers and at 55% for community hospitals. On what are these percentages based? Why is the percentage for community hospitals smaller? Are these percentages producing the desired effects?

Many questions remain to be answered in the development of cost-effective models for staffing to provide quality care. However, one thing that the results of the various studies presented in this article make clear is that numbers alone do not tell the whole story. Staff nurses’ perceptions of the factors in the work environment that affect adequacy of staffing must be assessed and measured and included in the model. These factors will affect the success of any model.

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References

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