Nine Structures and Leadership Practices Essential for a Magnetic (Healthy) Work Environment

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Improving clinical nurse work environments is a major challenge faced by nurse executives today. To meet this challenge, nurse leaders must implement the "right" structures and best leadership practices so that clinical nurses can engage in the work processes and relationships that are empirically linked to quality patient outcomes. What are these "right" structures and best leadership practices? Meta-analyses of 2 sets of publications were used to identify organizational structures and best leadership practices essential to a healthy work environment, that is, a work environment that enables them to engage in the work processes and relationships needed for quality patient care outcomes. The first set was 12 publications from 7 professional organizations/regulatory bodies that advocated forces, hallmarks, and standards for a healthy work environment. The second set was 18 publications from the Essentials of Magnetism structure–identification studies, in which the aggregated results from 1300 interviews with staff nurse, manager, and physician "experts" were compared with the agency results. Broadening the categories and final aggregation yielded the 9 most important and influential structures essential to a quality work environment. Suggestions for implementing these structures are provided. **Key words:** *healthy work environment, work processes related to HWE*

IMPROVING clinical nurse work environments in acute care hospitals is a major challenge facing nurse executives today. Research has consistently demonstrated links between nurse work environments, desired patient outcomes such as decreased mortality in failure-to-rescue (FTR) situations,[1-3] patient safety,[4] length of stay,[5] patient satisfaction,[6] and nurse outcomes such as increased job satisfaction,[7,8] retention, and turnover.[9] A *work environment* is a set of interconnecting surroundings, circumambiencies, and conditions that determine, influence, and guide growth and action.[10] A healthy clinical practice work environment is one in which leaders provide the *structures*, practices, systems, and policies that enable clinical nurses to engage in the work *processes* and relationships essential to safe and quality patient care *outcomes*.[8] This *structure-process-outcome* paradigm, used for more than 40 years to evaluate and improve healthcare systems,[11] provides an overarching conceptual framework useful in analyzing current conditions and in developing strategies to improve work environments in acute care hospital settings where the majority of professional nurses practice. Desired patient and nurse *outcomes* are well known and have been studied

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extensively. Clinical nurses in 14 Magnet hospitals have identified 8 work *processes* and relationships essential to a healthy work environment (HWE). The purpose of this article is to analyze and aggregate HWE citations from 2 sources: those recommended in 12 publications by 7 professional agencies and those cited in 18 publications by more than 1300 nurses, managers, and physicians considered to be HWE experts because they were working on clinical units with confirmed HWE. Thematic categories resulting from these agency and expert meta-analyses will then be synthesized into a single list of the most important and essential HWE *structures*. Identification of these essential *structures* should provide nurse and healthcare organization leaders with the information needed to engage in informed benchmarking and gap analysis essential to quality improvement and to creation of healthy and professional practice work environments.[12]

CONCEPTUAL FRAMEWORK AND PROBLEM STATEMENT

The major premises in the Donabedian paradigm are that the basic approaches to assessment of quality of care are *structure*, *process*, and *outcome*; all 3 are essential, but "process is a more direct measure of quality than is either structure or outcome."[13(p81)] Identification of causation as well as areas needing improvement must proceed in an orderly fashion. Direct, empirical linkages can be established either through the identification of work *processes* enabled by organizational *structures* or through the measurement of the links between work *processes* and *outcomes*.[13] The assessment of *structure-outcome* relationships, bypassing *processes*, is an indirect measure that can and has resulted in faulty findings and interpretations.

Some examples will illustrate this principle. An interdisciplinary team of physicians and nurses, studying the impact of intensive care unit (ICU) *structures*—physical layout, number of physicians, frequency of rounds on a unit, nurse-patient ratio, technology available—on the *outcome*, "acuity-adjusted" patient mortality found that decreased mortality was due not to the unique ICU *structures* but most directly to the *processes* of nurse-physician collaboration and clinical autonomy enabled by these ICU *structures*. Only in those ICUs where *structures* produced improved collaboration and autonomous decision making were there significant *outcomes*—decreases in "acuity-adjusted" mortality.[14] Twenty years later, Boyle[1] reported similar findings in a study of possible linkages between the *structural* characteristics of clinical units and nurse-sensitive patient indicator *outcomes.* The mixed and often conflicting results found in studies examining the impact of staffing *structures* (staffing levels, skill mix) on *outcomes* such as patient mortality/adverse events further demonstrates the errors and erroneous conclusions that can result from studies of indirect *structure-outcome* relationships.[2,15-17] Aiken et al[2] posited that it was the nursing surveillance and nurse's ability to intervene before a patient's condition deteriorated so severely that it could not be reversed (need-to-rescue [NTR] *process*) that explains linkages between higher nursing skill mix (*structure*) and lower rates of FTR (*outcome*).

Problem statement

The identification of structures/best leadership practices essential to the work processes needed for an HWE has been difficult because the large majority of empirical nursing studies are *structures* and *outcomes* (S-O) studies. In a 2007 comprehensive meta-analysis of 48 articles[18] that included 30 correlational, 5 descriptive, and 2 experimental studies related to the effects of nursing leadership behaviors on HWE, all but 2 were indirect S-O studies. *Structures* most frequently studied were leadership styles and attributes; *outcomes* studied were nurse job satisfaction. Attention must be given to measures of work processes and the direct relationship between *processes* and *structures* (S-P) and between *processes* and *outcomes* (P-O). Empirical

support for these direct relationships must be established if nurse and other healthcare administrators and leaders are to be guided by the "culture of evidence" that is the hallmark of today's science of administration.[19]

Work processes related to HWE: Identification and measurement

Three groups of processes/relationships related to the work of nurses in hospitals were found in the literature. The earliest work in the identification of essential work *processes* found in the literature was the 1976 P-O study of Phaneuf.[20] This study was based on the conceptualization that a quality nurse work environment was one that promoted performance of the 7 legal nursing functions—follow physicians' orders, observe symptoms and reactions, supervise caretakers, supervise patients, report and record, promote emotional/physical health of the patient, and execute procedures and techniques. Phaneuf developed a 50-item nursing audit instrument to measure these "*processes* of nursing care." The *outcome*, quality patient care, was the degree of correspondence between items on the tool and patient care received as reflected and documented by retrospective patient medical record audit. Although, initially, the tool with its excellent validity and reliability was widely used, continued use was hampered by its cost and labor-intensiveness.

In a 2001 P-O study, clinical nurses in 14 Magnet hospitals identified 8 work *processes* and relationships essential to safe and quality patient care outcomes.[21] These 8 work processes—collegial-collaborative RN-MD-ID relationships, practice of clinical autonomy, working with clinically competent peers, supportive nurse manager relationships, perceived adequacy of staffing, control of nursing practice, maintenance of a patient-centered culture, and support for education—have since been confirmed as essential by clinical nurses in 81 additional Magnet and Magnet-aspiring hospitals in 34 states and by nurses in 13 home healthcare agencies in 9 states.[22] In 2003, the Institute of Medicine identified

these work processes as the "production processes needed in nurses' work environments to safeguard patients."[23(p315)] The Essentials of Magnetism (EOM) instrument was developed to measure the 8 processes/relationships.[9,24] Process measurement differs from the measurement of structures. The latter are usually assessed by the "extent of presence" of the policy, system, structure, leadership attribute, or practice. For example, on a 4-point scale from "strongly agree" to "strongly disagree," indicate your agreement with scale items such as "Nurses need more autonomy in their daily practice." "Nurses have a good deal of control over their own work" respondents must use personal definitions of concepts/constructs and can indicate only their perception of presence/availability of the concept. Processes require the measurement of the steps or components that comprise the process. For example, a necessary component of autonomous decision making is understanding the effects of unique and overlapping spheres of practice on types (independent or interdependent) of decision making. The groups of processes that comprise an HWE must be measured together because they are interrelated; none are optional.[9,24,25] Collaborative RN-MD relationships are essential to autonomous practice, particularly in the "NTR" domain; competent performance is the basis both for these relationships and for autonomous practice. To accurately measure the 8 essential work processes, interviews and participant observations were conducted to identify the steps/components for each processes and the relative importance of each step. Steps were then translated into calculated weighted scale items and psychometric properties of the EOM established.[9,24] Studies demonstrate positive linkages between the EOM essential work *processes* and nurse and patient *outcomes* for 7 of the 8 processes[9,24,26-38]; control of nursing practice is positively related to nurse *outcomes* only.[9,24,32,37,39,40]

A third group of work processes is embedded in the themes identified by 36 experienced (24 mean years' experience) and

educated (97% BSN and 47% MSN) clinical nurse experts, scholars, and mentors who were interviewed relative to the elements essential for an optimal clinical practice work environment.[41] They identified the following 4 elements: (1) valuation of scholarly nursing practice enables the balance of scholarly caregiving and professional development; (2) seamless support at all levels of the organization enables scholarship and caregiving processes; (3) structural supports are instrumental in promoting professional growth at all levels of career development; and (4) there must be reciprocal willingness on the part of nurses to use the support provided (P-S).

No other set or group of processes essential to an HWE was found in the literature, but studies of single-work *processes* and their linkage to 1 or more *structures* or *outcomes* seems to be increasing. Mark[42] reports that *structures* such as the age of nurse and the number of beds on the unit affect the *process*, staff nurses' perception of adequate staffing. Positive relationships between structural and psychological empowerment (*structures*) and work *processes* such as clinical autonomy,[43] decisional involvement,[44] and control over nursing practice[45,46] have been reported. Effects of skillful engagement (perception of high levels of structural empowerment) as a mediating *process* between nurse characteristics and attributes (*structures*) and the *outcomes*, job satisfaction and intent to leave, were investigated by Keller-Unger.[47] In a 7-month ethnographic, participant observation study, the effects of different ICU structures/cultures (medical and surgical) on the end-of-life decision-making *process* were identified.[48]

METHODS

The meta-analytic methodology of Heberlein and Baumgartner[49] was used to identify the structures/best leadership practices essential for an HWE. Published literature and Web sites, supplemented by e-mail queries when necessary to enhance the accuracy of categorization, were the sources used. In meta-analyses, data from each source are coded (first independently by 2 investigators, then jointly, then independently aggregated, and finally jointly aggregated) and quantitative comparisons are made across studies. The meta-analytic approach provides "a clearer, more parsimonious review" than does qualitative analysis, and because results are quantitative, the researcher gets a sense of the dominance, importance, and potential impact of one variable compared with others.[49(p448)]

Agency sample

Meta-analyses were conducted on 12 publications/Web sites that described professional models, hallmarks, forces, standards, microsystems, and principles of healthy, magnetic, and professional nursing practice work environments advocated/recommended by the American Nurses Credentialing Center,[13,50,51] the American Association of Colleges of Nursing,[52,53] the American Association of Critical-Care Nurses,[25,54,55] the American Organization of Nurse Executives,[56] the 70-member Nursing Organization Alliance,[57] the Joint Commission on Accreditation of Healthcare Organizations,[58,59] and the Institute of Medicine,[23] hereafter referred to collectively as the agencies.

Expert sample

Meta-analyses were conducted on 18 publications emanating from a series of EOM structure-identification studies in which clinical "experts" on high EOM-scoring units in high EOM-scoring hospitals were interviewed to ascertain structures that enabled or supported the 8 essential processes.[21,27–40,60-62] In these P-S studies, EOM scores from more than 50 000 clinical nurses in 157 hospitals were used to select hospitals with the healthiest staff nurse–confirmed work environments. Within each "high-scoring" hospital, clinical nurses ($n = 721$), nurse managers ($n = 382$), and physicians ($n = 249$) from clinical units scoring above the hospital's mean on the EOM scales were interviewed to ascertain the structures and best leadership

practices that promoted the 8 essential work processes/relationships. Sample interview questions were as follows: "What does your nurse manager/the administration in this hospital do to help you develop collaborative relationships with physicians; that enables you to make autonomous clinical decisions?" Participant observations were also conducted to further define the structures and best leadership practices described by the interviewees.

RESULTS

From agency meta-analysis

The sources of agency environment-improving citations were the literature, consultation, and advice from experts in the field, or advice and canvassing of the agencies' constituencies. An exception to this was the 14 Forces Magnetism (FOM). In the original 1983 Magnet hospital study,[63] 4 *outcomes*—good place to practice nursing (reputation for giving quality patient care), good place to work (nurse job satisfaction), can recruit and retain professional nurses (attraction and retention)—were used to designate 41 hospitals as having magnetic work environments. Data from regional interviews with directors of nursing and a staff nurse from each hospital to elicit programs leading to nurse job satisfaction, quality patient care, effective recruitment, and retention were grouped into 19 categories of structures, systems, and policies,[63(pp14-37)] which were then condensed into the 14 FOM used today.[12,50]

Of the 96 citations emanating from the meta-analysis of the agency publications, 95% were organizational structures and best leadership practices. Two FOM, interdisciplinary relationships and autonomy, although often viewed as work processes, are defined and exemplified as *structures*.[12] For example, *autonomy* when defined as an environment in which nurses are given command of their expert knowledge and granted authority to make independent decisions in a multidisciplinary context[12,50] is a *structural* definition. When defined as freedom to act on what you know in order to make independent decisions in the nursing sphere and interdependent decisions in that sphere of practice where nursing overlaps with other disciplines, it is a *process* definition.[29,30,35] Another FOM, quality care, is evidenced as an *outcome* and a *structure*.[12] Institute of Medicine recommendations were analyzed as grouped in the executive summary[23] because many of the recommendations related to the same structure. Two critical care standards are described and evidenced as *processes* and *structures*.[25] One of the American Organization of Nurse Executives initiatives,[56] Preparing for Magnet Designation, was omitted from the meta-analysis because it is repetitive of the 14 FOM.

Seven of the 96 environment-improving citations were cited by only 1 agency. Only the Colleges of Nursing cited the presence and use of "technological advancements in clinical care" as an essential structure.[52] Only the American Nurses' Credentialing Center cited "image of nursing" and "nurses are permitted and expected to incorporate teaching in all aspects of their practice" as structures essential to a quality work environment.[12,50,51]

On the basis of the frequency of citation, the dominant and most important "environment-improving" organizational structures recommended by the 7 agencies were as follows:

1. Quality of nurse leadership, attributes of leader, active in professional organizations. Management style is visionary, visible, open, and rich, and includes skilled communication.
2. Opportunities for education, professional growth, development, and advancement. Budget for education includes tuition reimbursement, continuing education, and certification. Workforce capability is maximized.
3. Nurse staffing structures that provide adequate number of human resources and flexible scheduling.

4. Flat, decentralized, and organizational structure that promotes unit-based and shared decision making.

5. Collaborative, interdisciplinary relationships demonstrated through evidence such as committee membership and minutes.

6. Culture of Interdisciplinary collaboration, teamwork, and safety exists and is nurtured

7. Personnel policies include salary and benefits competitive for geographical area, consultation, resources, and advancement programs such as career ladders.

8. Quality improvement infrastructure and environment, including research and evidence-based practice (EBP) initiatives.

9. Meaningful recognition structure is operative, includes the recognition of nurses' contributions and the value of these contributions; reward/pay for performance.

From expert meta-analysis

Meta-analyses were done on the 18 publications[21,27–40,60–62] emanating from the EOM structure-identification studies, in which more than 1300 expert interviewees identified and described structures/best leadership practices that facilitated the 8 staff nurse–identified essential work processes. The 88 citations were analyzed and aggregated into 38 structures/best practices categories. The number of citations ranged from 10 for working with clinically competent peers to 16 for the clinical autonomy process. Some citations, for example, "walk the talk" and "practice what you preach," were cited in connection with several work processes—control of practice, collegial RN-MD-ID relationships, supportive nurse manager relationships, and a patient-centered culture of excellence. Competent nurse performance was cited as the basis for perceptions of adequate staffing, autonomous clinical decision making, establishment of RN-

MD-ID relationships, and control of practice. Specific behaviors indicative of supportive nurse manager relationships were cited for almost every essential work process.[31,38]

On the basis of frequency, the citations most instrumental in enabling clinical nurses to enact the work processes essential for high-quality patient care were as follows:

1. Nurse managers who share power, request evidence used to make autonomous decisions, hold staff accountable in positive, constructive ways for decisions made, promote groups cohesion and teamwork, and resolve conflicts constructively.

2. Structures that support EBP teams such as committees, programs, initiatives, and 'boot camps', and interdisciplinary protocol development.

3. Administration demonstrates approval for nurses to make autonomous decisions, interdisciplinary collaboration, and for leadership/participation in council activities.

4. Programs that help us develop effective teamwork. Teamwork helps us take care of very difficult patients under difficult circumstances. Closed units and no floating help to develop teamwork.

5. Staffing structures need adequate numbers of nurses but also must recognize and consider RN competence, level of patient acuity, flexible scheduling, and flexible care delivery systems.

6. Availability and support for educational programs including degree education, continuing education, and certification. National programs on campus or "in city." Time off, financial reimbursement, and enough competent people so that nurses can attend without risk to patients.

7. Regular, interdisciplinary patient care rounds, review and critique sessions, and critical pathway and protocol development.

8. Structure for regulation and determination of nursing practice by nurses at

all levels in the organization; must be both input and decision making; shared power

9. Development of and "living" a patient-centered culture in which values are known, subscribed to, and transmitted to newcomers.

CONCLUSIONS

The meta-analyses indicate considerable agreement between agencies and experts in structures and best leadership practices identified as essential to HWEs, that is, environments wherein clinical nurses can execute the work processes and establish the relationships essential to the provision of quality patient care. Agency citations were more global; clinical experts were more specific in their descriptions of facilitating structures. Agencies also tended to address all 4 goals of healthcare organizations—quality patient care, employee job satisfaction, fiscal viability, and meeting the needs of community/constituency, whereas experts focused mainly on the productivity of quality care and professional work satisfaction.

Essential structures and best leadership practices

The categories resulting from the agency and expert meta-analyses were broadened and aggregated into 9 organizational structures essential to an HWE (Table 1).

Quality leadership at all levels

Attributes and best practices used to describe top nursing leaders were authentic, executive, powerful, and active in professional organizations. Management style is visionary and visible and includes rich and skilled communication.[31,38,64-66]

Experts were almost completely focused on attributes and best practices of nurse managers. It has been well documented that nurses leave their managers, not their job or the hospital.[64,65] Effective nurse manager performance is key to the empowerment of

Table 1. Structures/best leadership practices essential for healthy work environments

Quality leadership at all levels in the organization

Availability of and support for education, career, performance, and competence development

Administrative sanction for autonomous and collaborative practice

Evidence-based practice education and operational supports

Culture, practice, and opportunity to learn interdisciplinary collaboration

Empowered, shared decision-making structures for control of the context of nursing practice

Generation and nurturance of a patient-centered culture

Staffing structures that take into account RN competence, patient acuity, and teamwork

Development and support of intradisciplinary teamwork

staff that is essential to work effectiveness, autonomous decision making, and promotion of the collegial/collaborative nurse-physician and ID relationships essential to quality patient outcomes.[38,66] In addition to empowerment, experts identified "walk the talk," promotion of cohesive work teams, constructive conflict resolution, judicious and regular use of feedback, use of evidence in autonomous decision making, representing the position and views of staff nurses to others, and being assessable, approachable, and safe to talk to as universally supportive nurse manager role behaviors.[31,38]

Availability of and support for education, performance and competence development, career development, and advancement

Educational programs available included on-site RN-BSN programs, continuing education, and certification. Support included financial help, paid time off, and replacement staff. Competence development was

supported by unit educators, online tutorials, and assistance with the development of competent performance in the 2 areas of work complexities unique to hospital nursing practice—the "simultaneity complexity" and coping with the largest work group of any profession, occupation, trade, or craft.[34] The simultaneity complexity of caring for multiple patients, in multiple locations and with multiple/different needs, simultaneously is unique to the nursing profession and to hospital nursing practice[34,67,68] and presents the greatest problem. This complexity requires constant awareness, surveillance, and concern for multiple patients, as well as tolerance of interruptions in one client-practitioner relationship so that services can be provided to another.[67-71]

Administrative sanction/approval for autonomous and collaborative practice

Consistently and continuously over the years, there have been strong recommendations from nurses, physicians, and organizations that nurses engage in autonomous decision making for the benefit of the patient. In 1980, the American Nurses Association proclaimed that clinical autonomy and RN-MD collaborative relationships are true partnerships in which power is held and valued by both participants with recognition and acceptance of separate and combined spheres of activity, responsibility, and accountability.[72(p7)] One of the first steps of the American Nurses Association and American Medical Association National Joint Practice Commission[73] was to urge the collaborative development of *Scope of Practice* documents that are integral to the interdependent decision making essential to autonomous decision making.[74] In 1990, Fagin[75] published the Venn diagram of unique and overlapping spheres of practice essential to collaboration and autonomy. In 2004, the Institute of Medicine recommended that a higher level of clinical autonomy be given to staff nurses and that they be trusted and supported in using the outcomes of EBP initiatives to make patient care decisions.[23] In 2006, physicians and staff

nurses rated autonomous decision making as the highest indicator of competent staff nurse performance.[34]

The major domains of autonomous decision making are "patient advocacy" and "NTR. While most advocacy events are in the unique sphere of nursing practice, NTR events generally involve the overlap spheres of practice, thus challenging interdependent evidence-based decision making. Quality patient care demands NTR autonomous decision making from professional nurses. Failure to rescue, the outcome directly related to NTR, accounts for 62% (200 000 patients in 1 year alone) of all patient safety incidents.[76] Need to rescue is among the 3 highest adverse events identified in 39 million Medicare hospitalizations and is the only 1 of 6 patient safety indicators showing no improvement in the past 6 years.[76]

Staff nurses consistently report that they want to, and are expected to, but receive little or no support for autonomous practice.[77-81] Nurses in Magnet hospitals score somewhat higher in clinical autonomy but still report little support and only a moderate level of such practice.[29,30,35,61] Support for collaborative nurse-physician decision making and practice is increasing but is still problematic in many hospitals.[27,28,36]

The dominant support cited by the expert sample for autonomous and collaborative practice was administrative sanction/approval in the form of incorporating components of autonomy and collaborative decision making into departmental documents/practices such as definitions of the professional nurse, scope of practice, performance appraisals, and clinical advancement criteria.[30] Some hospitals developed clinical ladder criteria that specified independent decision making in the nursing unique sphere of practice as the first step, with interdependent decision making in overlapping spheres of practice as the criteria for the higher steps.[30,35] Others differentiated advancement steps by willingness to accept the risks involved in autonomous practice and by the degree of interdisciplinary collaboration and participation in central interdisciplinary patient rounds. These structural supports and

best practices were specifics related to the meaningful recognition citation advocated by the agencies.

EBP education and operational supports

Evidence-based practice and decision making are facilitated by organized, formally constituted structures for learning, mentoring, and executing EBP initiatives. Examples of these structures include patient problem (pain management, electrolyte imbalance, elimination, groin bleeds)-based nursing EBP teams, EBP councils, inter- or intradisciplinary "boot camps" to facilitate instruction and acquisition of EBP skills, interdisciplinary protocol development teams, or an EBP component to graduate nurse residency program with residents required to conduct and present results of their EBP projects.[30,41] These EBP structures, often a component of the quality improvement infrastructure, were serviced by qualified mentors, librarians and information technologists.

Promotion of interdisciplinary collaboration

This structure focused on 2 components: (1) learning how to collaborate and (2) culture and other structures that championed collaboration. Collegial decision making was cited as the ultimate goal, but it was frequently noted that "that's a long way off." Collegial (equal trust, power, and respect) or collaborative (mutual trust, power, and respect) planning, practice, and decision making are based on the understanding that the care required by hospitalized patients today is too complex for any one professional group to plan and do.[28,36] Structures cited as promoting ID collaboration were regular, interdisciplinary patient care rounds that included the active participation of clinical nurses, review and critique sessions, critical pathway and protocol development, and ID boot camps where collaboration was learned and practiced while engaged in EBP endeavors. The following 2 examples from interviewees in the

structure-identification studies illustrate these principles:

It's the quality of participation in interdisciplinary rounds—not just standing there, but presenting and yes, sometimes, arguing the uniquely nursing insights and representing the patient's viewpoint in the plan of care. It's what we depend upon nurses to do. (36: MD)

It is in these rounds and work groups that nurses, physicians, and members of other disciplines learn to appreciate the competence of one another, learn what each profession brings to quality patient care, learn how each group defines their sphere of practice and where spheres of practice overlap, learn how to work interdependently and make interdependent decisions and how to collaborate and practice as colleagues. (36: NM)

Structural empowerment for control of the context of nursing practice

This was usually achieved through structures/systems such as shared leadership/governance councils and forums. Both the councilor and congressional models were in evidence.[40] To be effective, active and potential participants must be psychologically empowered. Agencies postulated that flat, decentralized structures promoted such empowerment.[12] Experts emphasized that the structure must be based on the concept of "shared rather than finite power," permit access to people in power, and allow for input and decision making on issues of importance. Widespread participation was sought and valued; individual differences and potential contributions of all were recognized by acknowledging the value of behind-the-scene participation.[37,39,40]

Generation and nurturance of a patient-centered culture

Cultural values of teamwork collaboration, accountability, family-centeredness, respect, and integrity are integral components of a patient-centered culture.[37] Effective transmission of cultural values requires attention to the establishment of norms through which cultural values are translated into action.[37,81]

Staffing structures that consider competence of the RN, acuity level of patients, flexible scheduling, care delivery system, and the degree of teamwork

Nurses must have the freedom to modify care delivery systems on the basis of numbers and competence of staff available. Cohesive intradisciplinary teamwork expands perceptions of adequacy of staffing.[26,62]

Support development and maintenance of intradisciplinary teamwork

Teamwork increases productivity, contributes to professional work satisfaction, promotes quality patient care, increases patient safety and patient satisfaction,[82-84] and is a primary factor affecting nurses' perceptions of adequacy of staff.[26] The number of different people with whom nursing staff works, particularly on general units, greatly exceeds in size that noted for any other work group.[83] Across industries, the typical size of a work group is about 7 or 8, whereas in nursing, work groups range from 40 to 120 or more.[82] In addition to numbers, other impediments to team development are floating and rotating shifts. Although there has been little research examining the relationship between shifts worked, consistent scheduling, and level of teamwork,[82] experts identified closed units, unit-specific policies on floating shifts, and a total-hospital team development program such as the one described by DiMeglio et al[84] as effective structures leading to the development of cohesive teams. Teamwork figured prominently in clinical nurses' solution to the "multiple patient/simultaneity complexity" unique to hospital nursing.[26,34,62]

Suggestions for implementing essential structures

"Leaders need to invest in high-quality nursing care, provide resources to support nurses' ongoing contributions to patient safety, and bolster quality improvement programs that link work processes to nurse-sensitive quality indicators."[85] The purpose of this research was to identify the organizational structures and best leadership practices essential to an HWE. These structures can then serve as a guide for the performance improvement process, benchmarking, and gap analysis needed to achieve HWEs.

Performance improvement process

All quality or performance improvement endeavors follow essentially the same process: Define the goal or map out the process that is not working; premeasurement and assessment (Where do we stand now?); benchmark and/or gap analysis utilizing appropriate internal and external referents (What needs to be improved?); development of strategic plans for implementing improvement structures, systems, programs (Where do we want to go?); and postassessment and measurement (Has the goal been achieved?). The DMAIC (define, measure, analyze, improve, and control) model adds the additional step of controlling and monitoring performance; this constitutes the beginning of the process all over again.[86]

All models agree on the necessity of assessing status before and after the implementation of potential solutions. Measurement tools selected must coincide with the goal to be achieved. For example, a frequent outcome measure in studies of unit work environments is organizational and professional nurse work satisfaction.[7,32,87] These 2 types of job satisfaction are not the same, although they are frequently measured as if they were. Professional work satisfaction, that is, nurses' perceptions of the quality of the job based on professional fulfillment[7,87] is described by staff nurses as "feeling good about doing a good job," "making a difference for the patient," and "satisfaction from giving professional nursing care."[29] Organizational job satisfaction, defined as nurses' opinions of the job derived from organizational affiliation, is measured by variables such as workload requirements, benefits, pay, and professional status.[7,87] Maslow's hierarchy of needs theory provides

the framework for this distinction.[7] Professional work satisfaction focuses on higher-level needs; organizational job satisfaction focuses on basic needs of staff such as adequate restroom breaks and safe work environment. Understanding nurses' perceptions of basic work requirements such as appropriate workload, and availability of supplies, materials, and resources, is a fundamental prerequisite to addressing higher-level needs such as the participation in practice councils and autonomous and collaborative practice.[7] If the goal is the creation of safe, adequate work environment, organizational job satisfaction tools are appropriate; if the goal is an HWE leading to quality care, then professional work satisfaction must also be assessed.

Benchmarking and gap analysis

The structure-process measurement distinction is crucially important in the analysis stage of performance improvement. The analysis of scores from tools that measure structures permits benchmarking to determine root causes and potential solutions. Process measurement permits both benchmarking and gap analysis. *Benchmarking* is the process of comparing data (usually the total score on a measurement tool) from the organization at different points in time, or comparing data from the organization to other sources or referents. *Gap analysis* is the process of comparing distance between performances of one group of nurses with performance of a referent group on each step or component of the process. Both benchmarking and gap analysis aid goal-setting and performance measurement, but gap analysis also allows the identification of specific programs, interventions, and strategies needed to close the gap[18,86] and is particularly useful in assessing effective implementation of structures—where you are, where you want to go, and how far you have come. Burke describes a hospital-wide benchmarking, gap analysis, and performance improvement process in a thrice-designated Magnet hospital in

an article titled "When bad things happen to good hospitals."[88]

Limitations of meta-analytic study

A shortcoming of meta-analytic study is that the group of research/studies/publications that form the basis for meta-analysis may not all be equal, that is, one study may contain a larger sample, a higher response rate, and a more prestigious sponsorship than another so that perhaps results of that study should be given more weight. Although quantification is a goal of the meta-analytic methodology, weighting is not included.[49] This may constitute a limitation with respect to the results of the study presented here. The Nursing Organizations Alliance represents 70 member agencies and more than 700 000 nurses. Perhaps, the structures proposed by the alliance ought to be weighted more heavily than the standards proposed by a single agency. Or, maybe criteria proposed by service agencies ought to be weighted heavier than those proposed by educators. Other reasons why results from one agency might theoretically be weighted heavier than another are the prestige and power of the sponsor and the currency and recency of the proposed environment-improving criteria. None of these factors were considered in this meta-analysis, and, as such, they constitute a limitation.

Summary

The importance of understanding the factors in the hospital work environment that influence patient and nurse outcomes and the relationship between these structures, nurse work processes, and patient and nurse outcomes cannot be overemphasized; unfortunately, there is limited research evaluating interventions to improve nurse work environments.[89] Nurse leaders can do much to remedy this situation by implementing the 9 essential structures/best leadership practices and the performance improvement process presented in this article.

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