The Nursing Worklife Model: Extending and Refining a New Theory

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Aims We tested a modification of Leiter and Laschinger's Nursing Worklife Model by examining the impact of structural empowerment on professional work environment factors that lead to nursing job satisfaction.
Background The original model explains how five magnet hospital practice domains described by Lake (2002) interact to influence nurses' work lives by either contributing to or mitigating burnout.
Methods A non-experimental design was used. Five hundred randomly selected nurses in Michigan were surveyed (response rate 66%, $n = 332$). Instruments included the Conditions for Work Effectiveness Questionnaire-II, the Practice Environment Scale of the Nursing Work Index, and the Index of Work Satisfaction. Path analysis was used to test the model.
Results The final model fit the data well ($\chi^2 = 96.4$, d.f. = 10, NFI: 0.90, CFI: 0.43, RMSEA: 0.18), supporting both hypotheses.
Conclusions The expanded Nursing Worklife Model demonstrates the role of empowerment in creating positive practice conditions that contribute to job satisfaction.

Keywords: empowerment, job satisfaction, nursing, nursing leadership, work environment

Introduction

The hospital practice environment has a significant effect on nursing and patient outcomes (Aiken *et al.* 2001, Laschinger *et al.* 2001a,b). Many of the theoretical frameworks used to explain or predict relationships linking the environment, nursing and outcomes (Mark *et al.* 1996, Aiken *et al.* 1997, Mitchell *et al.* 1998, Doran *et al.* 2002) are based on the classic structure-process-outcome paradigm (Donabedian 2005). While these models provide clear direction for researchers and health care professionals interested in the path from environment through process to outcome, they do not conceptualize the environment in enough detail so that those who are interested in building work

settings supportive of nursing can use the model as a template. In this article, we describe an alternative theoretical framework that provides a rich depiction of the relationships between domains in the work environment, and then present how we tested an extension of the model on a sample of over 200 nurses.

The Nursing Worklife Model was developed to explain how organizational and nursing unit influences affect nurses' lives in the workplace by either contributing to or mitigating burnout (Laschinger & Leiter 2006, Leiter & Laschinger 2006). The model is based on five practice domains of the hospital practice environment that have been associated with magnet hospital properties and nurses' perceptions of professional practice environments (Lake 2002). The five practice

domains are: staff nurse participation in hospital affairs; use of a nursing model as the basis for care on a nursing unit; nurse manager ability, leadership and support; staffing and resource adequacy; and collegial nurse–physician relations. The model configures these domains in such a way that the underlying mechanisms by which one domain influences another are demonstrated, providing guidance to those who are interested in shaping the hospital environment to enhance the quality of nurses' work lives.

Theoretical framework

The Nursing Worklife Model is an emerging theoretical model, based on five hospital practice domains, which describes the relationships between nursing work environments and patient safety outcomes (Laschinger & Leiter 2006, Leiter & Laschinger 2006). Five work life factors identified by Lake (2002), as characteristics of professional nursing practice environments, interact with each other and affect the outcomes through the burnout/engagement process.

In the model, *leadership* is conceptualized as the driving force of the work environment variables, in that it strongly influences other aspects of the work environment. *Leadership* has a direct effect on *staff nurses' participation in hospital affairs*, *staffing and resource adequacy*, and *collegial nurse/physician relationships*. Leadership also has an indirect influence on use of a nursing model as the basis for care on the unit

(*vs.* a medical model) through these variables. The quality of collegial nurse/physician relationships mediates the relationship between leadership and use of a nursing model for care and between leadership and nurses' participation in hospital affairs. Leadership has an impact on burnout (emotional exhaustion and performance accomplishment) through staffing and resource adequacy and use of a nursing model of care. When staffing is insufficient to provide a high quality care, nurses are more likely to be exhausted. Use of a nursing model also directly affects the staffing adequacy and personal accomplishment. This implies that a nursing-based model of care would ensure adequate nurse staffing levels to meet the nursing needs of clients and allow nurses to provide a high quality professional nursing care. Adequate staffing and resources, in turn, would result in greater feelings of accomplishment by the nurses and should translate into better nurse and patient outcomes. Exhaustion mediates the relationship of the work environment characteristics with depersonalization, which mediates exhaustion's relationship with personal accomplishment.

Based on a review of the literature, as well as our own research, we posited that poor staffing levels, inadequate resources, and poor nurse/physician relations would all directly cause nurses to be dissatisfied with their jobs, and that a non nursing-based model of care would indirectly contribute to dissatisfied nurses by not placing a high priority on staffing and resource adequacy (Figure 1).
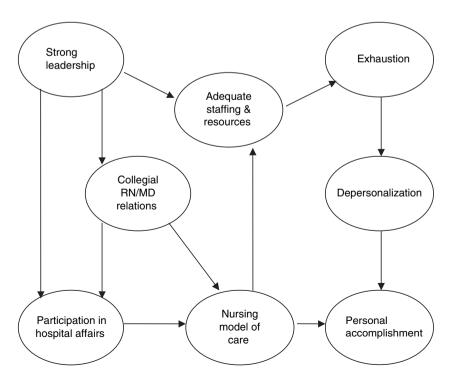

Figure 1
The Original Nursing Worklife Model.

Background

In nursing, the hospital practice environment has been commonly conceptualized from the perspective of either structural empowerment (Laschinger 1996) or magnet hospital properties (Aiken *et al.* 1997). Both structural empowerment and magnet hospital properties are concepts developed through qualitative studies. Envisioning the hospital environment in terms of magnet hospital properties was most recently described by Lake (2002) as already explained above, although the original qualitative study that coined the term 'magnet hospitals' was performed 20 years ago (McClure *et al.* 1983). Structural empowerment is a construct developed by Kanter (1993) in a qualitative study of industrial managers that describes four environmental social structures necessary for effective employee functioning. According to Kanter, when the organization provides opportunity and power through information, resources, and support, employees are more effective on the job, and furthermore, feel good about what they do (Kanter 1993). An extensive programme of research on structural empowerment has consistently demonstrated strong links between the four environmental sources of power and various nursing outcomes, including nursing job satisfaction (Laschinger *et al.* 2001a,b, Manojlovich & Laschinger 2002). Both structural empowerment and magnet hospital properties share similar characteristics (Laschinger *et al.* 2003) and together may provide a better insight into possible prescriptions for workplace improvement for nursing.

There is adequate evidence in the literature to support the inclusion of nursing job satisfaction and empowerment in the Nursing Worklife model. Many variables have been associated with nursing job satisfaction. In a recent study, it was shown that nurses were more likely to experience both job dissatisfaction and burnout when there were inadequate staffing levels (Aiken *et al.* 2002), which supported the direct link posited between staffing adequacy and job satisfaction. Poor nurse/physician relations have been linked to nursing job dissatisfaction (Larrabee *et al.* 2003) as has poor nurse/physician communication (Manojlovich 2005), which supports the posited direct relationship between collegial nurse/physician relations and job satisfaction. The use of a nursing model as the basis for care, often referred to as a professional practice model, has been associated with greater nursing job satisfaction as well (Hastings 1995, Pierce *et al.* 1996).

Kanter's (1993) study of empowerment and the extensive research programme on empowerment in nursing derived from Kanter (Laschinger 1996) have as a central theme the role of managers in structuring the work environments for staff effectiveness and satisfaction. Nurse leaders have to access empowerment structures themselves, to be able to use their influence to facilitate staff access to information, support, resources and opportunities (Laschinger & Shamian 1994). Staff nurses then respond to empowered leaders' behaviours by perceiving greater access to empowerment structures themselves (Laschinger *et al.* 1999). Thus, theoretical and empirical evidence suggests that structural empowerment must be in place before it can be accessed by nurse leaders and channelled further to their staff. Nurses who perceive greater empowerment are more satisfied with their jobs (Manojlovich & Laschinger 2002), report greater work effectiveness (Laschinger & Havens 1997), and also report superior communication with physicians (Manojlovich 2005). These studies suggest that once nurses are empowered, they use organizational and nursing unit domains more effectively, and as a result, have greater job satisfaction.

The purpose of this study was to test a modification of Leiter and Laschinger's Nursing Worklife Model. We tested two possible extensions. First, the study investigated whether the Nursing Worklife Model could be extended to explain the nursing outcome of job satisfaction, instead of burnout. Secondly, the study investigated whether structural empowerment could be added to the model. Therefore, we tested two hypotheses in this study:

- The Nursing Worklife Model will explain nursing job satisfaction.
- The addition of structural empowerment to the Nursing Worklife Model will help to explain additional variance in nursing job satisfaction.

Methods

Design and sample

The original study used a cross-sectional survey design to query a random sample of 500 nurses in Michigan, during the summer of 2004. The nurses' names were drawn from a list of acute care nurses provided by the Michigan Nurses Association. The nurses were surveyed on their perceptions of the practice environment (using both the CWEQ-II and PES-NWI) and nursing job satisfaction. Methods described by Dillman were included in an effort to improve response rates (Dillman 2000). The Institutional Review Board at the University of Michigan granted approval to conduct the study.

Data analysis was performed by using the SPSS (version 11.0) and Analysis of Moment Structures

(AMOS) statistical software programmes, version 5.0 (ACITS 1999). Descriptive analyses of the study sample and variables were conducted. Inferential statistics included correlations, reliability assessments of study instruments, and path analysis. SPSS was used to conduct the subscale analyses, while path analysis, a causal modelling technique, was used to test the theoretical model presented. The level of significance chosen for this study was 0.05.

Instruments

The CWEQ-II, developed by Laschinger *et al.* (2001a,b) consists of 19 items in six subscales based on Kanter's theory of structural empowerment (Kanter 1993). The six subscales are: Opportunity, Information, Support, Resources, the Job Activities Scale II (JAS-II), and the Organizational Relationships Scale II (ORS-II) (Laschinger 2002b). The first four subscales consist of 12 items (three for each of Kanter's (1993) four empowerment structures), and have demonstrated high internal consistency (Laschinger 2002a). The CWEQ-II also measures two additional sources of power, and therefore includes a three-item measure of formal power (the Job Activities Scale, version II), and a four-item measure of informal power (the Organizational Relationships Scale, version II). A total empowerment score is created by summing all the six subscales (score range: 6–30). Two overall measures of global empowerment are also included in a total of 21 items. The tool uses a five-point Likert-type scale. For this study, the alpha coefficient was 0.90. Content and construct validity of the CWEQ-II have both been established.

The PES-NWI was developed by Lake (Lake 2002) as a more focused measure of the practice environment than the revised Nursing Work Index (NWI-R). Lake drew on over 20 years' of research into magnet hospitals to develop and test her tool. The PES-NWI uses a four point Likert-type scale and consists of five subscales thought to address the key domains in the hospital environment that support professional nursing practice: nurse participation in hospital affairs; use of a nursing model as the basis for care on a unit; nurse manager ability, leadership and support of nurses; staffing and resource adequacy; and collegial nurse–physician relations, for a total of 33 items (Lake 2002). According to Lake, the first two subscales seem to reflect the hospital-wide environment, whereas the remaining three subscales may represent environmental factors at the level of the nursing unit (Lake 2002). The National Quality Forum (NQF) has recommended that the PES-NWI be used as a system-level organizational

effectiveness tool that is influenced by nursing care and performance. Subscale internal consistency coefficients range from 0.71 to 0.84, with an overall Cronbach's alpha reported as 0.82 (Lake 2002). For this study, the alpha coefficient was 0.93. Construct validity has been established, and confirmatory factor analysis supports the five subscale structure of the tool.

Nursing job satisfaction was measured by the Index of Work Satisfaction (IWS), Part B. The IWS uses a seven-point Likert type scale and consists of 41 items-embedded in seven subscales. Subscales measure nurses' satisfaction with autonomy, pay, professional status, interaction with nurses, interaction with physicians, task requirements, and organizational policies (Stamps 1997). Many studies have used the IWS and reported subscale Cronbach alpha reliabilities ranging from 0.35 to 0.90, with total scale reliabilities of 0.82 to 0.90 (McGillis Hall 2003). For this study, Cronbach's alpha was 0.92. Content validity (Kovner *et al.* 1994) and construct validity through factor analysis (Stamps 1997) have been established.

Results

In the parent study, 332 of the 500 mailed surveys were returned for a 66.4% response rate. Of those, 316 surveys were usable. However, the completed sample for this study consisted of only nurses who identified themselves as staff nurses or having roles involving patient contact (i.e. patient educator, clinician), in order to achieve as homogeneous a sample as possible. All cases with missing data were deleted, so that the final sample for analysis consisted of 276 nurses who worked in hospitals.

Descriptive statistics and correlations

The nurses in the final sample ranged in age from 23 to 63 years ($M = 42.9$), had spent an average of 13 years in their institution, with an average of over 8 years in their positions, and had an average of 17 years' experience in nursing. The nurses were mainly female (95%), and Caucasian (91.1%). Most staff nurses had either an associate (41%) or baccalaureate (39.1%) degree in nursing, while the remainder were diploma (10.4%), or master's prepared (9.1%). The majority worked full-time (66.2%).

A correlation matrix was generated between the subscales of the two practice environment scales, and is presented in Table 1, along with mean and standard deviation scores. Although all relationships were highly significant ($P < 0.01$) and positive, they varied in their

Table 1

Means, Standards Deviations, and Correlations for Latent Variables ($n = 276$). All correlation coefficients are significant at $P < 0.01$ level (one-tailed)

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
Total empowerment	19.08	3.32	–	0.58	0.66	0.77	0.59	0.80	0.61	0.59	0.58	0.44	0.48	0.49	0.60
Opportunity subscale	4.01	0.72		–	0.22	0.38	0.22	0.40	0.28	0.30	0.28	0.20	0.16	0.27	0.26
Information subscale	2.93	0.92			–	0.41	0.23	0.43	0.34	0.32	0.42	0.28	0.20	0.35	0.37
Support subscale	2.95	0.91				–	0.35	0.58	0.41	0.56	0.48	0.31	0.35	0.36	0.44
Resources subscale	2.99	0.77					–	0.43	0.21	0.38	0.36	0.28	0.66	0.39	0.47
Formal power subscale	2.86	0.82						–	0.39	0.49	0.48	0.35	0.35	0.38	0.50
Informal power subscale	3.42	0.68							–	0.37	0.37	0.44	0.29	0.26	0.47
Nursing leadership	2.53	0.68								–	0.69	0.36	0.48	0.52	0.53
Participate in hospital affairs	2.47	0.50									–	0.38	0.47	0.67	0.54
Collegial RN/MD relation	2.69	0.55										–	0.43	0.49	0.61
Staffing adequacy	2.54	0.61											–	0.47	0.59
Nursing model of care	2.82	0.39												–	0.50
Job satisfaction	30.07	4.91													–

strength of association. The strongest association was between the resources subscale of the CWEQ-II and the staffing and resource adequacy subscale of the PES-NWI ($r = 0.66$, $P = 0.001$). This finding would be expected, as both subscales tap into the same construct. The formal power subscale of the CWEQ-II was most highly correlated with the nurse participation subscale of the PES-NWI ($r = 0.48$, $P = 0.001$). This finding is consistent with Kanter's assertion that power is accrued through formal organizational positions (Kanter 1993), as would be needed to have nurses participate in hospital affairs. The informal power subscale of the CWEQ-II was most strongly related to the collegial relations subscale of the PES-NWI ($r = 0.44$, $P = 0.001$), consistent with Kanter's notion of the importance of informal relationships to empowerment (Kanter 1993). The resources subscale of the CWEQ-II was most highly correlated with the nursing foundations subscale of the PES-NWI ($r = 0.39$, $P = 0.001$), suggesting that hospital resources may be necessary to foundations for quality care. The support subscale of the CWEQ-II had the strongest relationship with the nurse manager subscale of the PES-NWI ($r = 0.56$, $P = 0.001$), indicative of the conceptual overlap between these two subscales.

Model testing

To test the first hypothesis, that the Nursing Worklife Model would explain nursing job satisfaction, a model was generated in AMOS, beginning with nursing leadership and then, through both direct and indirect paths, finishing with nursing job satisfaction. According to the Nursing Worklife Model, leadership is the sole exogenous variable, highlighting its pivotal role in influencing the work environment for nurses. Leadership contributes directly to participation in hospital affairs, staffing adequacy, and collegial relations. Staffing adequacy and collegial relations in turn contribute to job satisfaction, while participation in hospital affairs contributes to foundations for quality care. Leadership contributes indirectly to nursing job satisfaction via paths through staffing adequacy and collegial relations. Collegial relations contribute directly to participation in hospital affairs, foundations for quality care, and job satisfaction; while foundations for quality care contribute to job satisfaction indirectly through staffing adequacy. All the paths specified were statistically significant, and the model fit the data well [χ^2 (6, $N = 276$) = 54.7, $P < 0.01$, NFI: 0.93, CFI: 0.37, RMSEA: 0.17], supporting the first hypothesis. The first model explained 49% of the variance in job satisfaction ($R^2 = 0.49$).

A second model was generated to test the hypothesis that the inclusion of structural empowerment would contribute additional explanatory power to the model for nursing job satisfaction. The second tested model began with structural empowerment as the exogenous variable, contributing directly to both nursing leadership and nursing job satisfaction. The rationale for beginning the model with empowerment was based on both theoretical grounds and empirical evidence demonstrating that empowering social structures have to be present first, before the nursing leaders can access them. The remaining relationships in the model did not change. Again, all path coefficients were statistically significant, and the R^2 value increased from 0.49 to 0.53, signifying that the second model explained 53% of the variance in job satisfaction. This model also fit the data well providing support for the second

Table 2
Unstandardized (*b*) and standardized (β) coefficients, and critical ratios (CR) for the Final Tested Model (all values significant at *P* < 0.01)

Path	*b*	β	CR
Empowerment → leadership	0.12	0.59	12.17
Leadership → collegial RN/MD relations	0.32	0.39	6.92
Leadership → participate in hospital affairs	0.46	0.62	13.13
Collegial RN/MD relations → participate in hospital affairs	0.15	0.16	3.50
Participate in hospital affairs → nursing model of care	0.46	0.59	12.71
Collegial RN/MD relations → nursing model of care	0.16	0.23	4.97
Nursing model of care → staffing adequacy	0.48	0.31	5.27
Leadership → staffing adequacy	0.29	0.32	5.55
Staffing adequacy → job satisfaction	2.26	0.29	6.67
Collegial RN/MD relations → job satisfaction	3.25	0.39	8.93
Empowerment → job satisfaction	0.48	0.34	7.73

hypothesis [χ^2 (10, $N = 276$) = 96.4, $P < 0.01$, NFI: 0.90, CFI: 0.43, RMSEA: 0.18]. In summary, both hypotheses were supported by the results. Table 2 displays both unstandardized and standardized coefficients, as well as critical ratios for the final tested model. The revised Nursing Worklife Model, including both structural empowerment and nursing job satisfaction, is presented in Figure 2. Standardized path coefficients have been inserted onto each path in the model, making it easier to see the strengths of the relationships between the various paths.

Discussion

The results from this study extend our knowledge about how work environment characteristics affect hospital nurses. The Nursing Worklife model may be applicable to other facets of nurses' working lives, besides burnout, personal accomplishment, or job satisfaction. For example, work effectiveness and self-efficacy for nursing practice are potentially two outcomes of nurses' work lives that may result from empowered nurses being able to access all five practice domains. Additional research to extend the model further is required.

While other research has linked work environment characteristics to nurses' job satisfaction (Manojlovich 2005), there are a couple of additional unique contributions that the current study makes to the job satisfaction literature. First, the study results more fully describe how distinct elements of professional practice environments are interrelated and have the capacity to predict job satisfaction. Second, while the original Nursing Worklife model was based on a large sample of Canadian nurses, this study sampled American nurses,
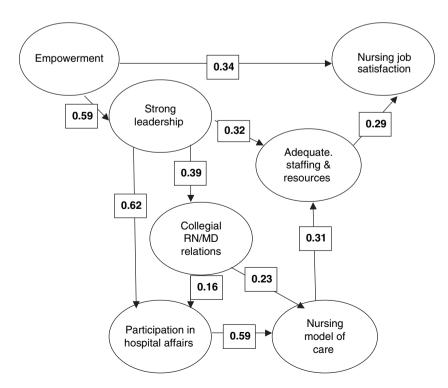

Figure 2
The Revised Nursing Worklife Model. Standardized regression coefficients for each path are in bold.

who practise in a very different type of health care system. The fact that the configuration of direct and indirect relationships of the five domains of the practice environment was significant for both groups of nurses suggests that nurses in both countries have similar perceptions about what factors they need to be able to provide quality patient care. In a large international study, Aiken *et al.* (2001) also found that nurses reported similarities in work environment characteristics across countries.

In this study, nursing leadership functioned as the driving force behind the other practice domain factors, as it did in the original Nursing Worklife study (Laschinger & Leiter 2006). The pivotal importance of nursing leadership to the other practice domains underscores the organizational importance of nursing leadership and calls into question hospital executives' decisions to increase nurse managers' span of control. Cathcart *et al.* (2004) found that as managers' span of control increased, employee engagement decreased, suggesting possibly a similar mechanism for findings reported here. That is, as nurse leaders' support decreased, staff became more disengaged and unable to access the practice domains, which might have contributed to dissatisfaction with the job. Disengagement is one aspect of burnout, the outcome in the original Nursing Worklife Model (Laschinger & Leiter 2006). Although burnout and job satisfaction were not tested together in this study, previous investigations have found a link between the two (Laschinger *et al.* 2001c).

The research presented here can be immediately applied by astute nurse managers. The configuration of the practice domains suggests that there are points at which empowered nursing leaders can intervene to improve nurses' job satisfaction. When nurse managers make a point to put empowering conditions in place, they are seen as good leaders who are available and supportive of nurses in their work. The revised Nursing Worklife Model can be used as a template, because in demonstrating how the five practice domains are related to each other in a systematic way, the model can help nurse managers reduce burnout and improve job satisfaction of their staff. For example, the model suggests three areas where nursing leadership can have a direct impact on nurses' work lives: through promoting nurses' participation in hospital affairs, collaborative nurse/physician relations, and staffing and resource adequacy.

Nurse leaders can advocate for the presence of staff nurses on hospital-wide committees. The original Magnet Hospital study (McClure *et al.* 1983) as well as more recent Magnet Hospital studies (McClure & Hinshaw 2002) have reinforced the importance of staff nurses'

presence in hospital affairs to both nurse satisfaction and quality nursing care. Nurse leaders contribute to collaborative nurse/physician relations by supporting their staff in developing relationships with physicians (Schmalenberg *et al.* 2005). Specific examples of how nurse leaders can promote more collaborative nurse/physician relations are provided by Schmalenberg and colleagues. Nurse leaders can also facilitate staff participation in devising staffing schedules and flexible staffing ratios. Self-scheduling has been associated with greater job satisfaction (Robb *et al.* 2003) and calculating the optimal nurse staffing ratios has been described in the literature (Bordoloi & Weatherby 2000).

The addition of structural empowerment to the model places more tools in the hands of nurse leaders. By accessing information, support, and resources at the organizational level, and by providing opportunities for their nursing staff, nurse leaders are empowered, and better able to manipulate the practice domains and shape them for more effective nursing practice. Laschinger and Shamian (1994) include strategies that nurse leaders can use to increase structural empowerment for their staff.

Several limitations to this study have been identified. First, as a cross-sectional study, it is not possible to make cause and effect statements about the relationships that were uncovered. However, the use of a causal modelling technique somewhat mitigates this limitation. Longitudinal study is needed to track the sequencing of work domains and measure changes over time. Secondly, the model explored here is only one possible configuration of the five worklife domains. While the analysis confirms that the model is consistent with the data, other configurations cannot be ruled out. However, this is the second study to confirm this particular sequence of practice domains and it was performed in a very different work environment, suggesting that the model is worthy of ongoing testing and analysis. Future research might entail a qualitative study to capture the richness and subtle nuances of nurses' experiences related to empowerment, job satisfaction, and their perceptions of the work environment. Ideally, through the use of quantitative and qualitative methods in the same study via triangulation, the most comprehensive understanding of relationships may emerge.

In conclusion, the Nursing Worklife model can be used as a template to assess the impact of five professional practice domains in the hospital environment on nurses' job satisfaction as well as burnout. The model demonstrates a specific series of paths, beginning with empowerment, that depend on nursing leadership to reach the target of job satisfaction.

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