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ABSTRACT

**Background:** Recruitment and retention strategies have emphasized the importance of healthy workplace communities to support and sustain the nursing workforce. Unit leadership that creates empowering workplace conditions plays a key role in establishing positive workplace settings which increases work effectiveness, and, ultimately, decreases job dissatisfaction.

**Objectives:** To test a multi-level model examining the effect of both contextual and individual factors on individual nurse job satisfaction. At the unit level, structural empowerment and support for professional nursing practice were hypothesized to be predictors of unit level effectiveness. At the individual level, core self-evaluation (CSE), and psychological empowerment were modeled as predictors of nurse job satisfaction one year later. Cross-level unit effects on job satisfaction were also examined.

**Design:** This study employed a longitudinal survey design with 545 staff nurses from 49 units in Ontario, Canada. Participants completed a mail survey at two points in time (response rate of 40%) with measures of structural empowerment, support for professional nursing practice, work effectiveness, core self-evaluation, psychological empowerment and job satisfaction. Multilevel structural equation modeling was used to test the model.

**Results:** Nurses shared perceptions of structural empowerment on their units indirectly influenced their shared perceptions of unit effectiveness (Level 2) through perceived unit support for professional nursing practice, which was associated with significantly higher ratings of unit effectiveness. Unit effectiveness was also strongly related to individual nurse job satisfaction one year later. At Level 1, higher CSE was associated with increased psychological empowerment, and subsequently higher job satisfaction.
Conclusions: The results suggest that nurses’ job satisfaction is influenced by a combination of individual and contextual factors demonstrating utility in considering both sources of nurses’ satisfaction with their work in creating effective nursing work environments.

Keywords: Empowerment, Support for Practice, Unit Effectiveness, Core Self-Evaluation, Job Satisfaction

Effects of unit empowerment and perceived support for professional nursing practice on unit effectiveness and individual nurse well-being: A time-lagged study

1. Background

Nurses are a valuable resource, and yet the healthcare profession faces a severe workforce shortage (Buerhaus, 2008; Griffin, 2005). Therefore efforts to retain highly qualified nurses have become high priority. With a large cohort of nurses approaching retirement, every effort must be made to ensure that nurses’ work environments are positive, promoting commitment to their place of employment and job satisfaction (Laschinger, Grau, Finegan & Wilk, 2010). Research has shown that work environments that empower nurses to practice according to their professional standards are associated with high job satisfaction, lower turnover rates, and better patient outcomes (Aiken, Smith & Lake, 1994; Laschinger, Finegan & Wilk, 2009). Thus managerial efforts are needed to ensure that nursing workplaces are designed to promote professional nursing practice to ensure positive nurse and patient outcomes.

Kanter’s (1977; 1993) model of structural empowerment is a useful model for examining nursing work environments. Structural empowerment refers to employee access to work conditions that make it possible to accomplish work goals in a meaningful way. Structurally empowering work environments have been linked to greater feelings of professional autonomy (Laschinger, Almost & Tuer-Hodes, 2003), perceptions that work environments are supportive of professional nursing practice (Laschinger, 2008), and greater control over nursing practice (Laschinger & Havens, 1996). However, while it is generally agreed that the quality of worklife
can vary across work units for a variety of reasons, little research has investigated how contextual conditions within units influence both organizational and individual worker outcomes. The purpose of this study is to examine the extent to which both contextual and intrapersonal factors influence nurses’ perceptions of unit effectiveness and subsequent job satisfaction.

Based on research suggesting that structurally empowering work places may be fundamental to work environments that support professional nursing practice and ultimately nurses’ workplace wellbeing, we used Kanter’s structural empowerment theory (1977) to test a multi-level model of workplace empowerment wherein we examined both unit level and individual influences on nurses’ job satisfaction. Specifically, we tested the effect of unit level structural empowerment and support for professional nursing practice (contextual effects) on unit work effectiveness and subsequent individual nurses’ experiences of job satisfaction one year later. We also examined the effect of intrapersonal psychological resources, core self-evaluation (CSE) and psychological empowerment, on nurses’ subsequent job satisfaction.

1.1. Theoretical framework

Kanter’s (1977, 1993) model of workplace empowerment includes four organizational structures that comprise overall empowerment: access to information, access to support, access to resources necessary to do the job, and access to opportunities to learn and grow. Access to information refers to knowledge of organizational values, goals and policies, and refers to possession of knowledge and expertise required to work effectively. Access to support refers to the availability of feedback and guidance from supervisors, peers and subordinates (e.g., helpful advice from colleagues). Access to resources refers to access to funds, supplies, and physical time required to accomplish organizational goals. Access to opportunity refers to the availability of challenges, and rewards, and professional development opportunities within the workplace to increase knowledge and skills. According to Kanter, work environments that provide access to
these organizational conditions empower employees to accomplish their work in meaningful ways (structural empowerment).

1.2. Related Research

1.2.1. Structural Empowerment

Research has linked structural empowerment to important organizational factors, such as job satisfaction, commitment, work productivity, and effectiveness (Laschinger, Finegan, Shamian & Wilk, 2001; Laschinger, Finegan & Wilk, 2009; Laschinger & Havens, 1996, 1997; Laschinger et al., 2012. However, only a select few studies have examined the contextual effects of structural empowerment, that is, the shared experience of empowerment on particular units. In older studies, Seibert, Silver and Randolph (2004) linked unit-level structural empowerment to individual-level job satisfaction and Kirkman and Rosen (1999) found that work team empowerment was predictive of team member psychological empowerment. In a more recent study, Laschinger, Finegan & Wilk (2009) found that higher shared perceptions of structural empowerment were related to higher individual nurse commitment to the organization. Together, these studies demonstrate the importance of studying contextual effects of structural empowerment on individual nurse job-related outcomes.

1.2.2. Support for Professional Nursing Practice

Healthcare management practices that provide strong support and resources for professional nursing practice through visible leadership, staffing adequacy, nurse participation in decisions, nurse/physician collaboration, and a strong nursing model of care, attract and retain nurses (Aiken, Sochalski & Lake, 1997) and have lower levels of burnout and job dissatisfaction (Vahey, Aiken, Sloane, Clarke & Vargas, 2004). Havens and Aiken (1999) purport that these attributes not only allow nurses to participate in decisions about how their work is carried out,
but allow them to fully utilize their nursing skills. Thus, nurses are provided with the organizational support necessary to exercise professional judgment and knowledge, and are therefore equipped to respond to urgent patient situations with confidence. Empirical evidence has shown that magnet hospitals produce more positive patient outcomes, including lower mortality rates and higher patient satisfaction (Aiken et al., 2008). Nurse outcomes are also more positive. Nurses working in magnet hospitals reported higher levels of job satisfaction, support from administrators, and overall nurse well-being (Aiken & Sloane, 1997; Warshawsky & Havens, 2011). Several studies have linked structural empowerment to nurses’ perception of ‘magnet like’ characteristics in their work environment (Laschinger, Almost & Tuer-Hodes, 2003; Manojlović & Laschinger, 2007; Armstrong, Laschinger, & Wong, 2008).

1.2.3. Work Effectiveness

Effective work environments in nursing are important to the quality of care that nurses are able to provide and thus the quality of care patients receive (Aiken et al., 2011; Hoffmeyer, 2003; Kowalski et al., 2010, Laschinger, 2008; Laschinger & Leiter, 2006). High quality care is an important determinant of nurses’ satisfaction with their work and their jobs, and, when compromised, often leads to nurses leaving their positions to find more suitable working conditions that support their standards of professional practice (Aiken, Smith, & Lake, 1994). Effective work units are able to accomplish the safe and high quality care which result in better patient outcomes and greater satisfaction with care (Aiken et al., 2011; Aiken, Clarke, Sloane, Sochalski, & Silber, 2002; Aiken et al., 1994; Needleman, 2003). A recent study showed that nurses’ assessments of high quality care are accurate predictors of patient outcomes and are therefore important to take into consideration when monitoring patient care quality in hospitals in addition to ‘objective measures’ of patient care quality (McHugh & Stimpfel, 2012).

1.2.4. Core Self-Evaluation (CSE)
Core self-evaluation plays an important role in how individuals evaluate themselves in terms of their personal worth and capabilities, and influences how individuals interpret and respond to experiences in their work environment (Judge, Erez, Bono & Thoresen, 2003). CSE is comprised of four personality constructs: self-esteem; locus of control; general self-efficacy; and emotional stability and is associated with job-related outcome variables including job and life satisfaction and job performance (Bono & Judge, 2003; Judge et al., 2002; Judge et al., 2002). Laschinger et al. (2007) found that higher core self-evaluation reported by nurse managers was significantly related to higher levels of structural empowerment.

1.2.5. Psychological Empowerment

Psychological empowerment is defined as an intrapersonal process which is determined by an individual’s personal experiences and beliefs about their work role (Thomas & Velthouse, 1990). Laschinger et al. (2001) found that structural empowerment was a pre-cursor to psychological empowerment, such that higher levels of one predicted higher levels of the other. Psychological empowerment is comprised of four dimensions: meaning, competence, self-determination, and impact (Spreitzer, 1995). Meaning refers to the fit between an individual’s values, beliefs, and behaviors, and what they are required to do at work. Competence refers to feelings of self-efficacy that enable an individual to perform work activities effectively. Self-determination refers to an individual’s sense of choice over initiating or pursuing work-related actions. Impact refers to perceived influence over issues/events at work. Research has linked psychological empowerment to job-related outcomes, such as job performance and job satisfaction (Carless, 2004; Hechanova et al., 2006; Liden, Wayne & Sparrowe, 2000; Manojloovich & Laschinger, 2002, Seibert, Silver & Randolph, 2004).

1.2.6. Job Satisfaction
Job satisfaction in nursing is an important retention factor which has consistently shown to be related to professional autonomy, positive relationships with supervisors and co-workers, job stress and burnout, organizational commitment, and turnover intentions (Blegen, 1993; Giallonardo et al., 2010; Halfer & Graf, 2006; Kovner et al., 2009; Laschinger, 2012; Laschinger et al., 2001; Ulrich et al., 2010). Research in Canada, the USA, and England revealed that a large proportion of nurses and report dissatisfaction with their jobs which threatens the quality of patient care (Aiken et al., 2010). A major source of job dissatisfaction among nurses is working in settings that prevent them from practicing according to professional standards (Irvine & Evans, 1995). The link between job satisfaction and turnover has also been well established, therefore understanding contextual and individual factors that predict job satisfaction is important.

In summary, previous research has highlighted the importance of workplace factors, and to a lesser extent intrapersonal factors, in determining nurse job satisfaction and, ultimately, turnover. However, only a select few studies have examined the contextual effects of structural empowerment on unit and individual nurse job-related outcomes, and even fewer studies have examined the combined effects of contextual and individual factors on nurses’ job satisfaction over time. By examining how contextual and personal factors impact on nurses’ satisfaction with their jobs, the role of unit managers in creating empowering work conditions that support professional practice and promote job satisfaction, can be better understood, thereby addressing the nursing shortage.

2. **Methods**

2.1 **Specific aim**

The aim of this study was to test a multi-level model of structural empowerment derived from theory and research (see Fig. 1). Research at the individual level of analysis has shown that
higher levels of perceived structural empowerment and supportive professional practice environments are related to increased job performance and increased job satisfaction (Laschinger, Almost & Tuer-Hodes, 2003; Laschinger, Wong & Grau, 2012; Manojlovich & Laschinger, 2002; Vahey, Aiken, Sloane, Clarke and Vargas, 2004). However, unit level empowerment has been shown to be a valid construct which predicts both unit level and individual levels work outcomes such as organizational commitment (Laschinger et al., 2009). We argued that structural empowerment and supportive professional practice environments would operate at the group or unit level of analysis, and would have a positive influence on unit level work effectiveness. We reasoned that if structural empowerment was high, support for professional practice would be in place, and would thus increase work effectiveness as a unit. We also hypothesized that the contextual factors (unit support for practice and unit effectiveness) would have important cross level effects on job satisfaction at the individual level one year following the first survey. At the individual level of analyses, we hypothesized that CSE would be positively related to psychological empowerment because high employee CSE is associated with a more positive and proactive view of their world. Higher levels of psychological empowerment were expected to be related to higher nurse job satisfaction over a 1 year time frame.
2.2. Participants

We tested the model with staff nurses (n=545) from 49 units in Ontario, Canada who responded to a mail survey at two points in time, one year apart (2006-2007). The overall response rate for matched cases was 40%. Following ethical approval, questionnaires were distributed by mail using a modified version of Dillman’s Tailored Design Methodology (Dillman, 2007) to improve return rates. A reminder letter was sent three weeks after the initial mailing followed by another questionnaire package three weeks later. Nurses returned questionnaires to the School of Nursing Research Unit. A cluster sampling design was used to test the model.

The average respondent was 42 years old, with 17 years of experience in nursing. Most (75.3%) worked in medical-surgical areas or critical care and were diploma prepared (79.1%) (See Table 1).
2.3. *Instrumentation*

Standardized questionnaires were used to measure study variables. Scale items were summed and averaged to yield scores reflecting a high level of the construct. Table 2 contains the descriptive statistics, Cronbach alpha reliabilities, and the correlations among study variables. Structural Empowerment. The Conditions for Work Effectiveness Questionnaire-II (CWEQ-II) (Laschinger et al., 2001) was used to measure the six dimensions of empowerment: informal power, formal power, access to opportunity, access to resources, access to information, and access to support. This scale consists of 19 items. When combined, they provide an overall structural empowerment score (Laschinger et al., 2001). Items are rated on a five-point scale ranging from 1 (none) to 5 (a lot). In the current research the Cronbach alpha for the overall scale was .89 consistent with previous research, with an overall Cronbach alpha of .87 (Laschinger et al., 2001).
Supportive Professional Practice Environments (SPPE). The Practice Environment Scale (Lake, 2002) was used to measure five attributes of supportive professional nursing practice environments: Nurse Participation in Hospital Affairs; Nursing Foundations for Quality of Care; Nurse Manager Ability, Leadership, and Support of Nurses; Staffing and Resource Adequacy; and Collegial Nurse-Physician Relationships. This scale contains 31 items and is rated on a 4-point Likert type scale ranging from 1 (strongly disagree) to 4 (strongly agree). Lake (2002) established construct validity through factor analysis and a Cronbach’s alpha of .82 for the overall scale. In our study, the Cronbach alpha was .93 for the total scale.

*Unit Effectiveness.* Items from the Shortell Culture Scale (Shortell, Rousseau, Gillies, Devers & Simons, 1991) were used to measure nurses’ judgments of the ability of the unit to meet unit treatment goals. Shortell reported acceptable reliability and established evidence of convergent and discriminant validity. In the current study, the aggregated overall unit effectiveness scale contains 7 items and is rated on a 5-point Likert type scale ranging from 1 (strongly disagree) to 5 (strongly agree). The Cronbach’s alpha in this study was .83.

*Core Self-Evaluation.* The Core Self-evaluation (CSE) Scale (Judge, Erez, Bono, & Thoresen, 2003) was used to measure the four CSE dimensions: self-esteem, generalized self-efficacy, emotional stability, and locus of control. This scale contains 12 items and is rated on a 7-point Likert type scale ranging from 1 (strongly disagree) to 7 (strongly agree). Cronbach alpha for the total scale ranged from .81 to .87 across six data sets and a confirmatory factor analysis revealed a unitary factor structure (Judge et al., 2003). In terms of predictive validity, the CSE scale correlated with job satisfaction ($r = .49-.59$), job performance ($r = .26-.27$), and life satisfaction ($r = .53-.66$), and, more importantly, predicted outcomes better than scales measuring the four individual traits. In our study, the Cronbach alpha was 0.78.
Psychological Empowerment. The Psychological Empowerment Scale (Spreitzer, 1995) was used to measure the four components of psychological empowerment construct: meaningful work, competence, autonomy, and impact. This scale contains 12 items and is rated on a 5-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). Spreitzer (1995) established evidence of convergent and divergent validity in a study of managers and non-management personnel. In a confirmatory factor analysis Laschinger et al. (2001) further validated the proposed factor structure. In the current study, Cronbach alpha for the entire scale was .83.

Job Satisfaction. A 4-item measure of job satisfaction adapted from The Job Diagnostic Survey (Hackman & Oldham, 1975) was used. Items are rated on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Cronbach alpha for this scale was .79.

<table>
<thead>
<tr>
<th>Variable</th>
<th>M</th>
<th>SD</th>
<th>α</th>
<th>Level 1 (nurses)</th>
<th>Level 2 (unit)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Job satisfaction</td>
<td>3.37</td>
<td>.85</td>
<td>.78</td>
<td>.29</td>
<td>.34</td>
</tr>
<tr>
<td>2 Core self-evaluation</td>
<td>5.30</td>
<td>.75</td>
<td>.78</td>
<td>.29</td>
<td>.34</td>
</tr>
<tr>
<td>3 Psychological empowerment</td>
<td>3.90</td>
<td>.48</td>
<td>.83</td>
<td>.43</td>
<td>.34</td>
</tr>
<tr>
<td>4 Unit structural empowerment</td>
<td>18.88</td>
<td>.60</td>
<td>.89</td>
<td>.52</td>
<td>.14</td>
</tr>
<tr>
<td>5 Unit support for professional practice</td>
<td>2.69</td>
<td>.46</td>
<td>.93</td>
<td>.68</td>
<td>.42</td>
</tr>
<tr>
<td>6 Unit effectiveness</td>
<td>4.10</td>
<td>.58</td>
<td>.83</td>
<td>.52</td>
<td>.30</td>
</tr>
</tbody>
</table>

Note: All correlations were significant at the .01 level.

2.4. Data Analysis

We tested our model using multilevel structural equation modeling techniques (Muthén & Muthén, 2006). This analysis allowed for a test of both unit level and individual level predictors of job satisfaction as well as cross level effects. By specifying a model for each level of the data, multilevel modeling models the non-independence of observations due to cluster sampling (Muthén & Muthén, 2006).

To ensure that we could in fact aggregate the measures of Level 2 variables, structural empowerment, supportive practice environment (SPE) and unit effectiveness (UE) we calculated three aggregation justification indices recommended by Bliese, Halverson & Schriesheim (2002). The ICC(1), a measure of the amount of variance explained by between-units differences, was
.30 for S.E., .26 for SPE and .13 for UE (above the .12 cut-off point). The ICC(2), a measure of interrater reliability within groups, was .82 for SE, .79 for SPE, and .58 for UE (above the .60 cut-off point). Finally, the average $r_{wg}$, a measure of the average within-group interrater agreement across groups (James, Demaree, & Wolf, 1993) was .96 for SE, .97 for SPE and 94 for UE (above the .60 cut-off point). These analyses justified aggregation of these measures to the unit level based on Bliese et al.’s (2002) criteria.

The model was estimated using the multilevel structural equation modelling Mplus 6.0 program (Muthén & Muthén, 2010), which integrates random effects and other continuous latent variables within a single analysis model. We first determined the between group variability in Level 1 job satisfaction hypothesized to be influenced by the unit level variables. The intraclass correlation coefficient (ICC) indicated that the ratio of the between unit variance to the total variance in this variable was substantial (0.14), justifying cross-level analysis. We then ran an intercepts-as-outcomes model with both individual level and group level predictors to assess whether these predictors could account for the variance in job satisfaction.

3. Results

The results revealed reasonably adequate fit of the hypothesized multilevel model to the observed covariance structure ($\chi^2 = 15.98$, df = 3, Comparative Fit Index = .92, Tucker-Lewis Index = .75, Root Mean Squared Error of Approximation = .09) (See Figure 1). Based on theoretical considerations and empirical research a direct path was added from core self-evaluation to job satisfaction which resulted in an acceptable model fit ($\chi^2 = 5.18$, df = 2, Comparative Fit Index = .98, Tucker-Lewis Index = .91, RMSEA = .05) (See Figure 2).
As predicted, at the unit level (Level 2), structural empowerment had a significant effect on unit support for professional practice (β = .76, p<.001), which in turn had a significant effect on unit level effectiveness (β = .40, p<.001). As predicted, at the individual level (Level 1), CSE had a significant positive effect on psychological empowerment (β = .34, p<.001), which in turn, had a significant positive influence on T2 job satisfaction (β = .24, p<.001). CSE also had a significant direct positive effect on job satisfaction (β = .13, p=.001). In terms of cross level effects, unit effectiveness had a strong direct effect on individual level nurses’ job satisfaction one year later (β = .89, p< .001). However, the hypothesized direct effect of unit level supportive practice environment on T2 job satisfaction was not significant (β = .14, p=.13), rather its effect was indirect through unit effectiveness (β = .35, p< .05).

Individual level predictors explained 9% of the Level 1 variance in job satisfaction and the unit level predictors explained 91% of Level 2 variance in job satisfaction. The results suggest that, in addition to individual-level effects, unit-level variables add to the understanding of nurses’ individual responses to their workplace.
4. Discussion

The results supported a model in which nurses’ job satisfaction was predicted by a combination of individual and contextual factors. At the unit level, higher levels of structural empowerment were associated with greater support for practice at the unit level, and ultimately higher ratings of unit effectiveness. These findings support previous cross sectional results linking structural empowerment to supportive professional practice environments (Laschinger, Almost & Tuer-Hodes, 2003; Manojlovich & Laschinger, 2002; Laschinger & Havens, 1997). Although supportive practice environments did not directly influence individual nurses’ satisfaction after one year on their units, it had an indirect effect through perceived unit effectiveness. This makes sense because a critical component of nurses’ job satisfaction has been shown to be related to their perceived ability to practice according to professional standards.
(Irvine & Evans, 1995; Balogun et al., 1996). Consistent with results obtained from single level studies, our findings support the notion that an empowering climate on nursing units is crucial in creating work environments that support professional nursing practice and increase unit effectiveness (Laschinger et al., 2007), thereby increasing feelings of job satisfaction among nurses. These findings add to previous work linking unit level empowerment to nurses’ job satisfaction (Laschinger et al., 2011) by illustrating the role of unit support for professional nursing practice as a mediating mechanism. The results suggest that contextual characteristics of nursing units play an important role in shaping how nurses on those units experience their work.

At the individual level of analysis, psychological empowerment partially mediated the relationship between CSE, a personal strength variable, and job satisfaction. In other words, nurses with higher CSE were more likely to be more psychologically empowered which, in turn, increased their satisfaction with their jobs over the one year time frame. When nurses felt their work was meaningful, that they had autonomy or control over their work, and felt competent and able to make an impact, they were more satisfied with their work. These results are consistent with Judge et al.’s (2003) contention that CSE influences the way individuals interpret and react to their organizational environment, which in turn results in positive employee work attitudes and behaviours. CSE was an important variable in our study in that it not only was associated with higher psychological empowerment, but also directly affected nurses’ job satisfaction. Thus, managerial strategies to develop CSE seem to be important for building psychological empowerment and job satisfaction, in addition to efforts to create empowering work units that support professional practice.

4.1 Limitations

As is often the case in longitudinal studies, not all nurses participated in both waves of the survey, therefore the findings must be viewed with caution. However, separating the
proposed causes from the hypothesized effect by time strengthens the evidence for the relationship between these variables found in previous cross-sectional research. Common method variance is always a concern when using self-reports from single sources, although Spector (2006) argues that the issue of method variance is overstated, especially when well established validated questionnaires are used.

5. Implications

In conclusion, our findings demonstrate utility in considering both contextual and individual factors in understanding nurses’ job satisfaction. To date, very few studies have utilized multi-level approaches to the study of nurse job-related outcomes. This study provides a more comprehensive theoretical understanding of how unit empowerment affects both unit and individual level outcomes. Even so, additional research is needed to obtain a more holistic understanding of the mechanisms through which empowerment at the work-group level influences unit and individual outcomes. Having said that, the current findings suggest that the quality of the work environment at the unit level is not only important in improving quality of patient care at the unit level, but also plays an important role in improving nurses’ individual workplace well-being. These findings suggest evidenced-based strategies to guide nurse managers in their efforts to address the current nursing workforce shortage by creating work unit conditions that support professional nursing practice and ultimately retain valuable nursing resources within the health care system.

References


