Evaluation of Selected Components of the Nurse Work Life Model Using 2011 NDNQI RN Survey Data

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Objectives

- Identify the relationship of components of the practice environment using Laschinger’s Nurse Worklife Model as a guiding framework.
Practice Environment

- Predicted Nursing Shortage\(^1\)
  - 285,000 by 2020
- NQF, CMS, & AHRQ recognize importance\(^2,3,4\)
  - Patient Outcomes
  - Nurse Perceived Quality of Care
  - Nurse Satisfaction

\(^1\) The Joint Commission, 2010
\(^2\) Aiken, Clarke, Sloane, Sochalski, & Silber, 2002;
\(^3\) Needleman, Buerhaus, Mattke, Stewart, & Zelevinsky, 2002;
\(^4\) Laschinger, 2008; Patrician, Shang, & Lake, 2010
Measurement of the Practice Environment

- Valid and reliable tools:
  - Practice Environment Scale (Lake, 2002)
  - Conditions of Work Effectiveness Questionnaire-II (Lachinger, et al., 2001)
  - Essentials of Magnetism-II (Kramer & Schmalenberg, 2008)
Nurse Worklife Model

- See Reference below for the model figure

Figure 1. From” Relationships of Work and Practice Environment to Professional Burnout: Testing a Causal Model” by M. Leiter and H. Laschinger, 2006, Nursing Research, p 139. Copyright 2006 by Lippincott Williams & Wilkins. Reprinted with permission.
The Question is . . .

- Do the components of the practice environment interact at the unit level as predicted using the Nurse Worklife Model framework?
Nurse Worklife Model
Literature Review

- Tested a causal model using SEM (Leiter & Laschinger, 2006)
- Extended NWLM to include nurse-reported adverse outcomes (Laschinger & Leiter, 2006)
- Evaluated the impact:
  - Structural empowerment on job satisfaction (Manojlovich & Lachinger, 2007)
  - Perceived quality on job satisfaction (Laschinger, 2008)
Job Satisfaction Literature Review

  - 17 studies – 44 important factors
  - Nurse manager important to structural factors
  - Work-related factors: autonomy, co-worker interactions, patient activities
Job Satisfaction Literature Review (cont’d)

- Unit level study: Unit type influence on job satisfaction (Boyle, Miller, Gajewsky, Hart & Dunton, 2006)

- Evaluation of healthy work environment: 717 units in 34 Magnet hospitals (Kramer, Maguire, & Brewer, 2011)
Research Question 1

- At the unit level, does RN-MD collaboration (*PES-Collegial RN-MD Relations*) and involvement in policy development (*PES-Participation in Hospital Affairs*) mediate the relationship between strong leadership (*PES-Nurse Manager Ability*) and a nursing model of care (*PES-Nursing Foundations for Quality Care*)?
Research Question 2

- At the unit level does RN-MD collaboration (PES-Collegial RN-MD Relations), involvement in policy (PES-Participation in Hospital Affairs) and a nursing model of care (PES-Nursing Foundations for Quality of Care) mediate the relationship between strong leadership (PES-Nurse Manager Ability) and staffing adequacy (PES-Staffing and Resource Adequacy)?
Research Question 3

- At the unit level, does RN-MD collaboration (PES-Collegial RN-MD Relations), involvement in policy development (PES-Participation in Hospital Affairs), staffing adequacy (PES-Staffing & Resource Adequacy), and a nursing model of care (PES-Nursing Foundations for Quality of Care) mediate the relationship between strong leadership (Nurse Manager Ability) and RN personal accomplishment (Job Enjoyment Scale)?
Methods

- Secondary analysis of 2011 unit level RN data
- Correlational Path Analysis testing for the mediators of Job Satisfaction using the NLWM framework.
- Hierarchical Regression used to identify the variation in job enjoyment using the PES subscales to represent components of the NLWM
Setting and Sample
N = 322,457 RNs in 3,583 Units
(medical, surgical, medical-surgical, stepdown, & critical care)

<table>
<thead>
<tr>
<th>Demographic*</th>
<th>Mean (SD)</th>
<th>Range</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>39.3(4.87)</td>
<td>25-75</td>
<td>N/A</td>
</tr>
<tr>
<td>Certification</td>
<td>N/A</td>
<td>0-100</td>
<td>16.7</td>
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<tr>
<td>BSN or Higher</td>
<td>N/A</td>
<td>0-100</td>
<td>55.4</td>
</tr>
<tr>
<td>Female</td>
<td>N/A</td>
<td>0-100</td>
<td>91.0</td>
</tr>
<tr>
<td>White</td>
<td>N/A</td>
<td>0-100</td>
<td>69.8</td>
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</tbody>
</table>

*Demographics are aggregated to the unit level
## Hospital Demographics

<table>
<thead>
<tr>
<th>Bedsize</th>
<th>N</th>
<th>(%)</th>
<th>Hospital Ownership</th>
<th>N</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;100</td>
<td>239</td>
<td>(6.7)</td>
<td>Not for Profit</td>
<td>2,979</td>
<td>(83.1)</td>
</tr>
<tr>
<td>100-199</td>
<td>697</td>
<td>(19.5)</td>
<td>Government Fed.</td>
<td>53</td>
<td>(1.5)</td>
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<tr>
<td>200-299</td>
<td>832</td>
<td>(23.2)</td>
<td>Government Non-Fed.</td>
<td>334</td>
<td>(9.3)</td>
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<tr>
<td>300-399</td>
<td>673</td>
<td>(18.8)</td>
<td>For Profit- Investor Owned</td>
<td>217</td>
<td>(6.1)</td>
</tr>
<tr>
<td>400-499</td>
<td>476</td>
<td>(13.3)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>500+</td>
<td>666</td>
<td>(18.6)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>3,583</td>
<td>(100)</td>
<td></td>
<td>3,583</td>
<td>(100)</td>
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</table>
# PES Subscale Definitions

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Definition (NWLM Component)</th>
<th>Items</th>
<th>Cronbach’s Alpha</th>
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</thead>
<tbody>
<tr>
<td>Collegial RN-MD Relations</td>
<td>Presence of collaborative working relationship <em>(RN-MD Collaboration)</em></td>
<td>3</td>
<td>.87</td>
</tr>
<tr>
<td>Nurse Participation in Hospital Affairs</td>
<td>Policy development and decisions about practice <em>(Policy Involvement)</em></td>
<td>9</td>
<td>.90</td>
</tr>
<tr>
<td>Staffing and resource adequacy</td>
<td>Staffing level is adequate to provide the care needed <em>(Staffing Adequacy)</em></td>
<td>4</td>
<td>.88</td>
</tr>
<tr>
<td>Nurse manager ability, leadership, and support</td>
<td>Nursing manager viewed as a leader who provides strong support <em>(Strong Leadership)</em></td>
<td>5</td>
<td>.90</td>
</tr>
<tr>
<td>Nursing Foundations for Quality of Care</td>
<td>Nursing practice is supported by high standards, professional nursing philosophy, education, expectation of competency, and measurement of quality <em>(Nursing Model of Care)</em></td>
<td>10</td>
<td>.88</td>
</tr>
<tr>
<td>Job Enjoyment</td>
<td>Measurement of job satisfaction <em>(Personal Accomplishment)</em></td>
<td>7</td>
<td>.92</td>
</tr>
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</table>
## Results

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Model 1: Foundations for Nursing Quality Care</th>
<th>Model 2: Staffing Resource Adequacy</th>
<th>Model 3: Job Enjoyment Scale</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Step 1</td>
<td>Step 2</td>
<td>Step 1</td>
</tr>
<tr>
<td>Practice Environment Scale (PES)</td>
<td>$\beta$</td>
<td>$\beta$</td>
<td>$\beta$</td>
</tr>
<tr>
<td>Nurse Manager Ability</td>
<td>.74**</td>
<td>.18**</td>
<td>.67**</td>
</tr>
<tr>
<td>RN-MD Collegiality</td>
<td></td>
<td></td>
<td>.19**</td>
</tr>
<tr>
<td>Participation in Hospital Affairs</td>
<td></td>
<td>.63**</td>
<td></td>
</tr>
<tr>
<td>Nursing Foundations for Quality Care</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Staffing Resource Adequacy</td>
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<td></td>
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</tr>
<tr>
<td>$R^2$</td>
<td>.54</td>
<td>.24</td>
<td>.44</td>
</tr>
<tr>
<td>Adj. $R^2$</td>
<td>.56</td>
<td>.80</td>
<td>.47</td>
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<tr>
<td>SE of Estimate</td>
<td>.14</td>
<td>.10</td>
<td>.28</td>
</tr>
<tr>
<td>$F$</td>
<td>4,360**</td>
<td>2,102**</td>
<td>2,937**</td>
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</tbody>
</table>

** $p < .001$
Unit Level Findings

- NLWM supported:
  - Partial mediation of Strong leadership (Nurse Manager Ability) effect on Nursing Model of Care (Nursing Foundations of Quality) and Staffing Adequacy (Staffing & Resource Adequacy)
  - Direct effect of Strong Leadership (Nurse Manager Ability) on Personal Accomplishment (Job Enjoyment)
  - 80% of variance in Job Enjoyment explained by the subscales in the model.
Findings

- 3 components of PES significant predictors of Job Enjoyment
  - Staffing and Resource Adequacy
  - Nurse Manager Ability
  - RN-MD Collaboration
Strengths

- Large national sample
- Standardized definitions
- Standardized data collection process

Limitations

- Selection Bias:
  - NDNQI higher percentage of Magnet facilities
  - Hospitals under 100 beds underrepresented
Recommendations

- Based on findings from both Kramer and Boyle:
  Measurement of the practice environment and job satisfaction at the unit level are important to understand the complexities within the work setting.
- Further study at the unit level needed in other areas of practice to evaluate the NWLM.
Acknowledgements

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