Effects of nursing leadership on nurse burnout and care quality: A structural equation modeling analysis

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• Delivering high quality of care is essential to creating trusty health services, which prevent human suffering and ensure healthier societies and economies.

• As nurses are the main care providers, it is important to establish and sustain a health professional nursing workforce with the capacity and capability to meet the demands and needs of the population for high-quality care.
CHINESE HOSPITAL NURSING WORKFORCE STUDY

2009
- 181 hospitals across mainland China;
- 9698 nurses & 6494 patients.

2014
- 23 hospitals across Guangdong province;
- 2066 nurses & 1334 patients.

2018
- 36 hospitals across Guangdong province;
- 4833 nurses & 2180 patients.
THEORETICAL FRAMEWORK

Structure
- Organizational context
- Nurse work environment
- Staffing levels
- Workload
- Nurse factors (education, experience, employment…)
- ...

Process
- Nursing care left undone
- Communication with nurses
- Staff’s responsiveness
- Health education
- Pain management
- ...

Outcome
- Nurse outcomes (burnout, intent to leave, job satisfaction, occupational injury,…)
- Patient outcomes (safety, satisfaction)

(Donabedian, 1988)
The associations of occupational hazards and injuries with work environments and overtime for nurses in China

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ABSTRACT

Occupational hazards (OH) and occupational injuries (OI) may contribute to nurses needing sick time and a high financial burden for hospitals. There is little published literature about nurse-reported OH/OI and their relationships with work environment and working overtime in China. This study was designed to describe Chinese hospital registered nurses’ OH/OI and to explore the associations between work environments, working overtime, and nurse-reported OH/OI. This cross-sectional study was conducted in Guangzhou province in China in 2016. The sample included 1,517 nurses from 123 medical-surgical units in 20 hospitals. The Present Environment Scale of the Nursing Work Environment and nurses’ work environment were measured. Overtime was calculated by subtracting scheduled work hours from actual work hours. Six items were used to measure nurse-reported OH/OI. Descriptive statistics, Chi-square tests, and hierarchical logistic regression models were used to analyze the data. The percentages of nurses reporting OH/OI occurred in the year before the survey ranged from 47% to 60%. Nurses who worked in good (p < 0.05) unit work environments were less likely to experience OH/OI (Odds ratio OR=0.65–0.68, p < 0.05). Nurses who worked overtime (OR=1.13–1.21, p < 0.05) and in the two hospitals (OR=0.45–0.80, p =0.05) were more likely to experience OH/OI. We found that OH/OI were prevalent among hospital nurses in China. Overtime work environment and longer nursing overtime were associated with fewer nurse-reported OH/OI.

THE ASSOCIATION OF CHINESE HOSPITAL WORK ENVIRONMENT WITH NURSE BURNOUT, JOB SATISFACTION, AND INTENTION TO LEAVE

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Abstract

The purpose of this study was to describe nurse burnout, job satisfaction, and intention to leave, and to explore the relationship of work environment to nurse outcomes in a sample of 9,900 Chinese hospital nurses.

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The relationship between patient safety culture and adverse events: A questionnaire survey
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Hospital nursing organizational factors, nursing care left undone, and nurse burnout as predictors of patient safety: A structural equation modeling analysis

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Abstract

The objective of this study was to examine the association between unit nurse education level, unit nurse staffing, and hospitalized patient perception of hospital care in Guangdong province, China.

Methods

- Design: A cross-sectional study.
- Measures:
  a) Hospitalized patient perception of hospital care was measured by the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey.
  b) Unit nurse education level was measured by the proportion of nurses holding a bachelor’s or higher degree on the unit.
  c) Unit nurse staffing was measured by the nurse-patient ratio (dividing the number of nurses by the average patient number reported by nurses on the unit at unit level).

- Data Analysis: Structural equation modeling analysis (variables controlling: hospital level, unit nursing practice work environment, unit type, unit nurse average age, and patient age, gender, education level, health status, and length of stay).

Results

The model fit well [CFI = 0.947, TLI = 0.903, SRMR = 0.033, and RMSEA = 0.030 (90% CI: 0.025 – 0.039)].

Conclusions

Increasing nurse staffing and upgrading nurses’ education level may be potentially helpful to improve patients’ perception of hospital care.

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What is already known?

- Nurses were less likely to report poor nurse outcomes such as burnout and poor quality of care in hospitals with better hospital organizational structures.
- Nursing work environment seems to be one of the most important hospital organizational structures.
- Nursing leadership is critical in creating a positive and supportive work environment.
AIM OF THIS STUDY

• To explore the impact of nursing leadership on nurse burnout and quality of care.
METHOD

- A cross-sectional study in 2014.
- Nurses (N=1579) responsible for direct care on medical and surgical units.
- Measures:
  - Nursing leadership: Nurse Manager Ability, Leadership, and Support Subscale of the Practice Environment Scale of Nursing Work Index
  - Nurse burnout: Maslach Burnout Inventory-Human Services Survey
  - Quality of care: three independent items indicating nurses’ perception of overall quality of care
METHOD

- Structural equation modeling analysis.

Hypothesized model:

- Nursing leadership
  - Emotional exhaustion
  - Depersonalization
  - Personal accomplishment
- Quality of care
## Findings

Table 1 Nurses Demographic Characteristics ($N=1579$)\(^a\).

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>$n$ (%)</th>
<th>Characteristics</th>
<th>$n$ (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender (female)</td>
<td>1491 (98.9)</td>
<td>Age</td>
<td>612 (39.9)</td>
</tr>
<tr>
<td>Working years in nursing</td>
<td></td>
<td>18-</td>
<td></td>
</tr>
<tr>
<td>&lt;5</td>
<td>773 (51.8)</td>
<td>25-</td>
<td>466 (30.3)</td>
</tr>
<tr>
<td>5-</td>
<td>340 (22.8)</td>
<td>30-</td>
<td>244 (15.9)</td>
</tr>
<tr>
<td>10-</td>
<td>177 (11.8)</td>
<td>35-</td>
<td>106 (6.9)</td>
</tr>
<tr>
<td>15-</td>
<td>92 (6.2)</td>
<td>40-54</td>
<td>107 (7.0)</td>
</tr>
<tr>
<td>20-34</td>
<td>110 (7.4)</td>
<td>Education level</td>
<td></td>
</tr>
<tr>
<td>Secondary diploma</td>
<td>184 (11.9)</td>
<td></td>
<td></td>
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<tr>
<td>Advanced diploma</td>
<td>736 (47.7)</td>
<td></td>
<td></td>
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<tr>
<td>Baccalaureate degree and higher</td>
<td>624 (40.4)</td>
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\(^a\) Sample size for different characteristics varied due to missing data.
# FINDINGS

Table 2 Descriptions of nursing leadership, nurse burnout, and quality of care.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean±SD</th>
<th>Range</th>
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</thead>
<tbody>
<tr>
<td>Nursing leadership</td>
<td>3.15 ± 0.67</td>
<td>1-4</td>
</tr>
<tr>
<td>Nurse burnout</td>
<td></td>
<td></td>
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<tr>
<td>Emotional exhaustion</td>
<td>24.89 ± 11.17</td>
<td>0-54</td>
</tr>
<tr>
<td>Depersonalization</td>
<td>7.28 ± 5.86</td>
<td>0-30</td>
</tr>
<tr>
<td>Personal accomplishment</td>
<td>31.02 ± 9.75</td>
<td>0-48</td>
</tr>
<tr>
<td>Quality of care</td>
<td>2.70 ± 0.60</td>
<td>1-4</td>
</tr>
</tbody>
</table>
The findings of year 2014 supported our hypothesized model [CFI=.923, TLI=.908, SRMR=.057, and RMSEA=.057 (95% CI: .053-.061)].
The findings of year 2018 supported our hypothesized model [CFI=.930, TLI=.916, SRMR=.063, and RMSEA=.062 (95% CI: .060-.064)].

Figure 2. Final model of nursing leadership, nurse burnout, and quality of care. *p<.05, **p<.01.
3 IMPLICATIONS

- Efforts to improve nursing leadership would not only help relieve nurse burnout, but also benefit quality of care improvement.

- Nursing leadership may play an increasingly important role in improving nurse burnout and quality of care.
LIMITATIONS

Only nurse-reported quality of care.

Limited variance was explained by the model.

A causal relationship cannot be built based on a cross-sectional study.
The findings of year 2018 supported our hypothesized model [CFI=.957, TLI=.948, SRMR=.062, and RMSEA=.062 (95% CI: .060-.065)].

Figure 3. Final model of nursing leadership, nurse burnout, and quality of care.
*p<.05, **p<.01. aNursing leadership was measured with Leadership Practices Inventory Observer.
REFERENCES


REFERENCES


Thanks for your attention!