Creating Healthy Work Environments 2017

Characteristics of the Nursing Practice Environment Related to Creating Healthy Work Environments for Nurses

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Flow of the presentation

1. Background
2. Conduct of the study
   Participants, methods, & data analysis
3. Results
4. Discussion
5. Q & A
Background
Background

- The US and Japan are both projected to experience a shortage of Registered Nurses (RNs).

- Reasons:
  - Aging population (particularly as “baby boomers” become elderly)
  - Growing health-care needs

- Furthermore, in the US, the average age of employed RNs increased from 42.7 yrs. in 2000 to 44.6 yrs. in 2010 (ANA, 2017)*.

* (http://www.nursingworld.org/nursingshortage, 2017.02.01)
Background

• An advanced aging population demands increasing nursing services for the elderly in many countries.

→ Therefore, identifying organizational factors that affect the job retention of nurses is urgently needed.

• There is a positive relationship between a healthy work environment (HWE) and the retention of nurses in a hospital setting (Ritter, 2011).
Interdependence of HWE, Clinical Excellence and Optimal Patient Outcomes

(AACN Standards for Establishing and Sustaining HWE: A Journey to Excellence)

https://sakai.ohsu.edu/access/content/group/NRS-412B-RNBS-TB-Su12/Health%20Systems%20Analysis/HWEStandards.pdf (2017.02.01)
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HWE and Magnet status

• A healthy work environment and Magnet status have a strong connection (Ritter, 2011).

• **Magnet Hospital**: Although the US experienced a widespread hospital nursing shortage in the late 1970s, some hospitals were able to attract and retain staff nurses. Such hospitals were called “magnet” hospitals.

→ In 1981, the American Academy of Nursing began a national study to identify and evaluate “magnet” hospitals.
The Nursing Work Index (NWI) (Kramer & Hafner, 1989) was developed based on the characteristics of magnet hospitals, which succeeded in attracting and retaining nurses amid a shortage in the early 1980s.

By using the NWI items, the following were developed:

• The Revised Nurse Work Index (NWI-R) (by Aiken & Patrician, 2000)
• The Practice Environment Scale of the Nursing Work Index (PES-NWI) (by Lake, 2002)
<table>
<thead>
<tr>
<th>Measurement</th>
<th>Authors</th>
<th>Items and domains/subscales</th>
</tr>
</thead>
<tbody>
<tr>
<td>NWI</td>
<td>Kramer &amp; Hafner, 1989</td>
<td>65 items, 3 domains: (1) nursing job satisfaction; (2) perceived productivity; (3) perceptions of an environment conductive to quality nursing care</td>
</tr>
<tr>
<td>NWI-R</td>
<td>Aiken &amp; Patrician, 2000</td>
<td>57 items, 4 subscales: (1) autonomy; (2) control over the practice setting; (3) nurse-physicians relationships; (4) organizational support</td>
</tr>
<tr>
<td>PES-NWI</td>
<td>Lake, 2002</td>
<td>31 items, 5 subscales: (1) nurse participation in hospital affairs; (2) nursing foundations for quality of care; (3) nurse manager ability, leadership, and support of nurse; (4) staffing and resource adequacy; (5) collegial nurse-physician relation</td>
</tr>
</tbody>
</table>
The PES-NWI

- Endorsed by the National Quality Forum (NQF) as a nursing-care performance measure at the facility level
- Included as a screening indicator for hospital staffing effectiveness in the Joint Commission accreditation standards
- Adopted as a Nursing-sensitive index in the National Database of Nursing Quality Indicators (NDNQI)
The PES-NWI

The PES-NWI includes 5 subscales:

• Nurse participation in hospital affairs
• Nursing foundations for quality of care
• Nurse manager ability, leadership, and support of nurses
• Staffing and Resource Adequacy
• Collegial nurse-physician relations
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- Nurse participation in hospital affairs
- Nursing foundations for quality of care
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Facility-level phenomena

Unit-level phenomena
HWE and Subscales of the PES-NWI

Nurse participation in hospital affairs
Nursing foundations for quality of care
Nurse manager ability, leadership, and support of nurses
Staffing and resource adequacy
Collegial nurse-physician relations
HWE and Subscales of the PES-NWI

[ HWE ]
Effective decision making

Authentic leadership
Meaningful recognition
Appropriate staffing
True collaboration
Skilled communication
HWE and Subscales of the PES-NWI

[ HWE ]

Effective decision making
Authentic leadership
Meaningful recognition
Appropriate staffing
True collaboration
Skilled communication

[ PES-NWI ]

Nurse participation in hospital affairs
Nursing foundations for quality of care
Nurse manager ability, leadership, and support of nurses
Staffing and resource adequacy
Collegial nurse-physician relations
### HWE and Subscales of the PES-NWI

<table>
<thead>
<tr>
<th>[ HWE ]</th>
<th>[ PES-NWI ]</th>
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<tr>
<td>Effective decision making</td>
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<tr>
<td>True collaboration</td>
<td>Collegial nurse-physician relations</td>
</tr>
<tr>
<td>Skilled communication</td>
<td></td>
</tr>
</tbody>
</table>
Nurse Participation in Hospital Affairs

1. Career development/clinical ladder opportunity.
2. Opportunity for staff nurses to participate in policy decisions.
3. A chief nursing officer which is highly visible and accessible to staff.
4. A chief nursing officer equal in power and authority to other top-level hospital executives.
5. Opportunities for advancement.
6. Administration that listens and responds to employee concerns.
7. Staff nurses are involved in the internal governance of the hospital (e.g., practice and policy committees).
8. Staff nurses have the opportunity to serve on hospital and nursing committees.
9. Nursing administrators consult with staff on daily problems and procedures.
The PES-NWI

Nursing Foundations for Quality of Care

1. Active staff development or continuing education programs for nurses.
2. High standards of nursing care are expected by the administration.
3. A clear philosophy of nursing that pervades the patient care environment.
4. Working with nurses who are clinically competent.
5. An active quality assurance program.
6. A preceptor program for newly hired RNs.
7. Nursing care is based on a nursing, rather than a medical, model.
8. Written, up-to-date nursing care plans for all patients.
9. Patient care assignments that foster continuity of care, i.e., the same nurse cares for the patient from one day to the next.
10. Use of nursing diagnoses.
Nurse Manager Ability, Leadership, and Support of Nurses

1. A supervisory staff that is supportive of the nurses.
2. Supervisors use mistakes as learning opportunities, not criticism.
3. A nurse manager who is a good manager and leader.
4. Praise and recognition for a job well done.
5. A nurse manager who backs up the nursing staff in decision-making, even if the conflict is with a physician.
The PES-NWI

Staffing and Resource Adequacy
1. Adequate support services allow me to spend time with my patients.
2. Enough time and opportunity to discuss patient care problems with other nurses.
3. Enough registered nurses to provide quality patient care.
4. Enough staff to get the work done.

Collegial Nurse-Physician Relations
1. Physicians and nurses have good working relationships.
2. A lot of team work between nurses and physicians.
3. Collaboration (joint practice) between nurses and physicians.
The PES-NWI

Instructions:
For each item, please indicate the extent to which you agree that the item is PRESENT IN YOUR CURRENT JOB. Indicate your degree of agreement by circling the appropriate number.

1. Adequate support services allow me to spend time with my patients.

2. Physicians and nurses have good working relationships.

Strongly Agree  Agree  Disagree  Strongly Disagree
1  2  3  4

1  2  3  4

Subscale scores were calculated as mean scores after reversing the numbers so that Strongly Agree=4, Agree=3, Disagree=2, Strongly Disagree=1. Therefore, a higher score means a better nursing practice environment.
Previous studies of the PES-NWI demonstrated that its scores were significantly related to nurse outcomes, patient outcomes, and organizational variables such as nurse turnover (Warshawsky & Sullivan Havens, 2011; Ogata et al., 2011).
To explore how the nursing practice environment, including nurse managers’ leadership, is related to staff nurses’ self-rating of their health condition, their tendency to remain working in their hospitals, and their resignation behavior.
Conduct of the study
Participants, methods, & data analysis
Recruitment of Participants

• All 647 hospitals with ≥ 200 beds in Tokyo metropolitan area and other large cities such as Osaka and Yokohama were asked to participate.

→ Participants were 7,434 staff nurses working at 22 hospitals in those cities.
Methods: Mail surveys

First mail survey
- Nursing practice environment

Second mail survey
- Whether staff nurses resigned or not
  - Health condition
  - Intention to remain in or leave their hospitals

Time axis
- First mail survey: (September & October 2014)
- Second mail survey: (March 2015)
Methods: Mail surveys

Time axis

First mail survey

(September & October 2014)

• Nursing practice environment
• Health condition
• Intention to remain in or leave their hospitals

Second mail survey

(March 2015)

Whether staff nurses resigned or not
Staff nurses answered questions regarding:

• the PES-NWI
• their self-rated health condition
• items of the Kessler Psychological Distress Scale (K6)
• whether they would work at the same hospital next year or not
• their characteristics as nurses
...and so on.
First mail survey:

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- their characteristics as nurses

...and so on.
Second mail survey

Directors of Nursing reported the ID numbers* of nurses who had resigned.

* ID numbers ensured anonymity of nurses.
Second mail survey:

Directors of Nursing reported the ID numbers* of nurses who had resigned.

* ID numbers ensured anonymity of nurses.
1. Calculated **descriptive statistics** for individual attributes of nurses and organizations

2. Examined **relationships** between the PES-NWI scores and participants health condition, “intention to remain or leave,” and resignation behavior

**Data Analysis**

- **Nursing practice environment** (e.g., nurse managers’ leadership)
- **Staff nurses’**
  - Health condition
  - Tendency to remain working in their hospitals
  - Resignation
3. Performed logistic regression analysis:

**Independent variables**

Nursing practice environment (e.g., nurse managers’ leadership)

**Dependent variables**

- Staff nurses’
  - Health condition
  - Tendency to remain working in their hospitals
  - Resignation
Ethical considerations

Ethics committee approval was obtained in June 2014 from the Tokyo Medical and Dental University (Ethics Approval no.1674).
Results
Logistic regression analyses were done, with independent variables being the five sub-scales and composite of the PES-NWI, and:

- Nurses’ self-rated health condition (healthy = 1, unhealthy = 0)
- K6 (5 or more = 1, 4 or less = 0)*
- “Intention to retain or leave the hospital next year” (remain = 1, leave = 0)
- Whether or not they had resigned from the hospital (remain = 1, resign = 0).

*In all models of the logistic regression analysis, categories of nurse age were used as control variables.
Locations of the 22 hospitals

Kanto region: 14 hospitals (63.6%)

Kinki region: 3 hospitals (13.6%)
Locations of the 22 hospitals

Kanto region: 14 hospitals (63.6%)

Kinki region: 3 hospitals (13.6%)

Other regions: 5 hospitals (22.7%)
## Characteristics of the 22 hospitals

<table>
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<tr>
<th>Characteristic</th>
<th>Number (%)</th>
<th>N=22</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accreditation by Japan Council Quality Health Care</td>
<td>19 (86.4)</td>
<td>22 (100.0)</td>
</tr>
<tr>
<td>Number of beds (beds)</td>
<td>19 (86.4)</td>
<td>22 (100.0)</td>
</tr>
<tr>
<td>Bed Occupancy rate (%)</td>
<td>83.8 (8.2)</td>
<td></td>
</tr>
<tr>
<td>Fee category</td>
<td>7 : 1*</td>
<td></td>
</tr>
</tbody>
</table>

* The fee category, which in Japan is based on the ratio of patients to nurses, was the highest (7:1); other categories are (10:1), (13:1), and (15:1).
# Characteristics of nurse respondents

<table>
<thead>
<tr>
<th>Gender</th>
<th>number ( % )</th>
</tr>
</thead>
<tbody>
<tr>
<td>female</td>
<td>2,064 ( 93.6 )</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age</th>
<th>number ( % )</th>
</tr>
</thead>
<tbody>
<tr>
<td>early 20s</td>
<td>372 ( 16.9 )</td>
</tr>
<tr>
<td>late 20s</td>
<td>536 ( 24.3 )</td>
</tr>
<tr>
<td>30s</td>
<td>767 ( 34.8 )</td>
</tr>
<tr>
<td>40 and over</td>
<td>531 ( 24.1 )</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Age (years old)</th>
<th>mean ( SD )</th>
</tr>
</thead>
<tbody>
<tr>
<td>average age</td>
<td>33.3 ( 8.8 )</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Nurse experience (years)</th>
<th>total</th>
<th>at current hospital</th>
</tr>
</thead>
<tbody>
<tr>
<td>: total</td>
<td>10.0 ( 8.2 )</td>
<td>7.0 ( 6.9 )</td>
</tr>
</tbody>
</table>

1) Among the 3,066 participants (response rate: 41.2%), the 2,206 full-time nurses’ answers that had no missing values for the PES-NWI items and the ID numbers were analyzed (ratio of valid responses: 80.0%).
# PES-NWI subscale and composite scores

<table>
<thead>
<tr>
<th>Subscale or Composite</th>
<th>Cronbach's alpha</th>
<th>Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PES-NWI subscales</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nurse Participation</td>
<td>0.79</td>
<td>2.59 (0.41)</td>
</tr>
<tr>
<td>Nursing Foundations</td>
<td>0.80</td>
<td>2.65 (0.40)</td>
</tr>
<tr>
<td>Nurse Manager Ability</td>
<td>0.88</td>
<td>2.76 (0.59)</td>
</tr>
<tr>
<td>Staffing, Resource Adequacy</td>
<td>0.79</td>
<td>2.26 (0.54)</td>
</tr>
<tr>
<td>Nurse-Physician Relations</td>
<td>0.82</td>
<td>2.64 (0.55)</td>
</tr>
<tr>
<td><strong>PES-NWI composite</strong></td>
<td>0.82</td>
<td>2.58 (0.39)</td>
</tr>
</tbody>
</table>

1) Chronbach’s alpha: 0.71 ～ 0.84 (Lake, 2002)
## PES-NWI subscale and composite scores

<table>
<thead>
<tr>
<th>Subscale or Composite</th>
<th>Cronbach's alpha ¹</th>
<th>Mean</th>
<th>Magnet hospitals</th>
<th>Non-magnet hospitals</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PES-NWI subscales</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nurse Participation</td>
<td>0.79</td>
<td>2.59</td>
<td>2.76</td>
<td>2.44</td>
</tr>
<tr>
<td>Nursing Foundations</td>
<td>0.80</td>
<td>2.65</td>
<td>3.09</td>
<td>2.83</td>
</tr>
<tr>
<td>Nurse Manager Ability</td>
<td>0.88</td>
<td>2.76</td>
<td>3.00</td>
<td>2.68</td>
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<td>2.88</td>
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<td>Nurse-Physician Relations</td>
<td>0.82</td>
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<td>2.99</td>
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<td><strong>PES-NWI composite</strong></td>
<td>0.82</td>
<td>2.58</td>
<td>2.95</td>
<td>2.65</td>
</tr>
</tbody>
</table>

¹) Chronbach’s alpha: 0.71 ~ 0.84 (Lake, 2002)
Health condition: health status

Instructions:
Please evaluate and indicate your health status over the last 30 days by circling the appropriate number below.

Health status? 1 2 3 4 5

Healthy Mostly healthy
Mostly healthy nor unhealthy
Neither healthy nor unhealthy Mostly Unhealthy Unhealthy
Health condition of nurse respondents

Number

Healthy

Unhealthy

0

1,000

Healthy

Unhealthy

800

600

400

200

0
Health condition of nurse respondents

Number

Healthy 68.8%

Unhealthy
## Health condition of nurse respondents

<table>
<thead>
<tr>
<th></th>
<th>Number</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthy, almost healthy</td>
<td>1,517</td>
<td>68.8</td>
</tr>
<tr>
<td>K6 (≥5*)</td>
<td>921</td>
<td>41.7</td>
</tr>
</tbody>
</table>

### K6

- Mean: 4.86 (SD: 5.03)

* K6 (range: 0-24) is a screening measure of depressive tendency. For Japanese populations, a K6 score of 5 or greater indicates the high possibility of a diagnosis of depression.
**Health condition: items of the K6**

The following questions ask about how you have been feeling during the **past 30 days**. For each question, please circle the number that best describes how often you had this feeling.

**Q1. During the past 30 days, about how often did you feel …**

<table>
<thead>
<tr>
<th></th>
<th>All of the time</th>
<th>Most of the time</th>
<th>Some of the time</th>
<th>A little of the time</th>
<th>None of the time</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. ...nervous?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>b. ...hopeless?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>c. ...restless or fidgety?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>d. ...so depressed that nothing could cheer you up?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>e. ...that everything was an effort?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>f. ...worthless?</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>
Answer distribution of K6

N=2,206

- ...nervous?
- ...hopeless?
- ...restless or fidgety?
- ...so depressed that nothing could... cheer you up?
- ...that everything was an effort?
- ...worthless?
Total score of the K6
Total score of the K6

Cut off point (=5)
Total score of the K6

Cut off point (=5)

Number

41.7%
# Health condition of nurse respondents

<table>
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<tr>
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<th>N=2,206</th>
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<tr>
<td><strong>number ( % )</strong></td>
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<td>921 (41.7)</td>
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<td><strong>mean ( SD )</strong></td>
<td></td>
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<td>K6</td>
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* K6 (range: 0-24) is a screening measure of depressive tendency. For Japanese populations, a K6 score of 5 or greater indicates the high possibility of a diagnosis of depression.
Logistic Regression Analysis
The PES-NWI → Nurse outcomes

Nursing practice environment (e.g., nurse managers’ leadership)

?

Staff nurses’

Health condition

Tendency to remain working in their hospitals

Resignation
Logistic Regression Analysis
Dependent variable= self-rated health condition

N=2,185

<table>
<thead>
<tr>
<th>Variables 1)</th>
<th>Model I</th>
<th>Model II</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Odd’s ratio ( 95%CI )</td>
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<tr>
<td>Age 2) (20-24 y.o.)</td>
<td>1.13 (.83 - 1.53)</td>
<td>1.15 (0.85 - 1.57)</td>
</tr>
<tr>
<td>(25-29 y.o.)</td>
<td>1.33 (1.01 - 1.74) *</td>
<td>1.35 (1.03 - 1.76) *</td>
</tr>
<tr>
<td>(30-39 y.o.)</td>
<td>1.32 (1.03 –1.68) *</td>
<td>1.37 (1.08 - 1.74) *</td>
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<tr>
<td>PES-NWI subscales</td>
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<tr>
<td>Nurse participation</td>
<td>.78 (.55 – 1.11)</td>
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<td>Nursing foundations</td>
<td>1.24 (.85 – 1.82)</td>
<td></td>
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<tr>
<td>Nurse manager leadership</td>
<td>1.61 (1.31 – 1.97) **</td>
<td></td>
</tr>
<tr>
<td>Staffing</td>
<td>1.74 (1.41 – 2.16) **</td>
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</tr>
<tr>
<td>Nurse-physician relations</td>
<td>1.15 ( .94 – 1.42)</td>
<td></td>
</tr>
<tr>
<td>** P&lt;0.01, * P&lt;0.05</td>
<td></td>
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** P<0.01, * P<0.05

1) Dependent variable (Health condition) : nurses’ self-rated health condition (healthy = 1, unhealthy = 0)

2) Reference group is “more than 40 years old”.
## Logistic Regression Analysis

**Dependent variable = self-rated health condition**

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<td>Nurse manager leadership</td>
<td>1.61 (1.31 – 1.97) **</td>
<td>3.48 (2.68 - 4.53) **</td>
</tr>
<tr>
<td>Staffing</td>
<td>1.74 (1.41 – 2.16) **</td>
<td></td>
</tr>
<tr>
<td>Nurse-physician relations</td>
<td>1.15 ( .94 – 1.42)</td>
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</tr>
<tr>
<td><strong>PES-NWI Composite</strong></td>
<td>3.48 (2.68 - 4.53) **</td>
<td></td>
</tr>
</tbody>
</table>

**N=2,185**

**2) Reference group is “more than 40 years old”.**

**1) Dependent variable (Health condition) : nurses’ self-rated health condition (healthy = 1, unhealthy = 0)**

**2) Reference group is “more than 40 years old”**

**P**<0.01, *P**<0.05
Logistic Regression Analysis
Dependent variable= **K6 (5 or more = 1, 4 or less = 0)**

N=2,185

<table>
<thead>
<tr>
<th>Variables 1)</th>
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<tbody>
<tr>
<td></td>
<td>Odd’s ratio ( 95%CI )</td>
<td>Odd’s ratio ( 95%CI )</td>
</tr>
<tr>
<td>Age 2) (20-24 y.o.)</td>
<td>2.35 (1.76- 3.13) **</td>
<td>2.30 (1.73- 3.05) **</td>
</tr>
<tr>
<td>(25-29 y.o.)</td>
<td>1.25 ( .97 - 1.61)</td>
<td>1.24 ( .96 - 1.60)</td>
</tr>
<tr>
<td>(30-39 y.o.)</td>
<td>1.05 ( .83 –1.33)</td>
<td>1.03 ( .82 - 1.29)</td>
</tr>
</tbody>
</table>

**PES-NWI subscales**

| Nurse participation               | 1.30 ( .93 – 1.80)           |
| Nursing foundations               | .66 ( .46 – .95) *           |
| Nurse manager leadership          | .66 ( .54 – .80) **          |
| Staffing                          | .74 ( .60 – .90) **          |
| Nurse-physician relations         | .99 ( .82 – 1.12)            |
| PES-NWI Composite                 | .39 ( .30 - .49) **          |

** P<0.01, * P<0.05

1) Dependent variable (Health condition): K6 score (5 or more = 1, 4 or less = 0)

2) Reference group is “more than 40 years old”.
Logistic Regression Analysis
Dependent variable = K6 (5 or more = 1, 4 or less = 0)

N=2,185

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<td>.39 ( .30 - .49) **</td>
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** P<0.01, * P<0.05

1) Dependent variable (Health condition): K6 score (5 or more = 1, 4 or less = 0)
2) Reference group is “more than 40 years old”.
The PES-NWI → Nurse outcomes

Nursing practice environment (e.g., nurse managers’ leadership)

Staff nurses’
- Health condition
- Tendency to remain working in their hospitals
- Resignation
Resignation of the participants

In the next year, among 2,206 participants:
• 412 (18.7%) intended to leave their hospitals.
• On the other hand, 1,752 (79.4 %) intended to remain in their hospitals.
**Logistic Regression Analysis**

**Dependent variable= Intention to remain in hospital**

N=2,164

<table>
<thead>
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<td>.25 ( .18 - .35) **</td>
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<tr>
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<td>.48 ( .35 – .67) **</td>
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</tr>
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</table>

**PES-NWI subscales**

- **Nurse participation** .90 ( .59 – 1.36)
- **Nursing foundations** 1.92 (1.22 – 3.01) **
- **Nurse manager leadership** 1.42 (1.12 – 1.80) **
- **Staffing** 1.36 (1.06 – 1.75) *
- **Nurse-physician relations** 1.02 ( .80 – 1.29)
- **PES-NWI Composite** 3.42 (2.52 - 4.63) **

**Note:**

**P**<0.01, * P<0.05

1) Dependent variable: whether or not they would work at the same hospital next year (remain = 1, ; leave = 0)

2) Reference group is “more than 40 years old”.
Logistic Regression Analysis

Dependent variable = Intention to remain in hospital

N=2,164

<table>
<thead>
<tr>
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<td>Age 1) (20-24 y.o.)</td>
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**PES-NWI subscales**

- Nurse participation: .90 (.59 – 1.36)
- Nursing foundations: 1.92 (1.22 – 3.01) **
- Nurse manager leadership: 1.42 (1.12 – 1.80) **
- Staffing: 1.36 (1.06 – 1.75) *
- Nurse-physician relations: 1.02 (.80 – 1.29)

**PES-NWI Composite: 3.42 (2.52 - 4.63) **

** P<0.01, * P<0.05

1) Dependent variable: whether or not they would work at the same hospital next year (remain = 1, leave = 0)
2) Reference group is “more than 40 years old”.
The PES-NWI → Nurse outcomes

Nursing practice environment (e.g., nurse managers’ leadership)

Staff nurses’
- Health condition
- Tendency to remain working in their hospitals
- Resignation
Among 2,206 participants, **157 (7.1%)** had actually resigned from their hospitals by the end of fiscal year 2014, namely, March 31\textsuperscript{st}, 2015.
# Logistic Regression Analysis

**Dependent variable: resignation (=1)**

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<td>Age 2) (20-24 y.o.)</td>
<td>.85 ( .45 – 1.60)</td>
<td>.84 (0.45 - 1.59)</td>
</tr>
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<td>(25-29 y.o.)</td>
<td>.37 ( .23 – .61) **</td>
<td>.37 ( .23 - .60) **</td>
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<td>(30-39 y.o.)</td>
<td>.66 ( .40 –1.08)</td>
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<td>Nursing foundations</td>
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<tr>
<td>Nurse manager leadership</td>
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<td></td>
</tr>
<tr>
<td>Staffing</td>
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<td><strong>PES-NWI Composite</strong></td>
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<td>1.59 (1.03 - 2.45) *</td>
</tr>
</tbody>
</table>

**P** < 0.01, * P < 0.05

1) Dependent variable: whether or not nurse participants had left their hospitals (remain = 1, resign = 0)

2) Reference group is “more than 40 years old”.

N=2,206
Logistic Regression Analysis
Dependent variable = resignation (=1)

<table>
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<tr>
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**PES-NWI subscales**

| Nurse participation            | .94 ( .50 – 1.75) |
| Nursing foundations            | 1.86 ( .95 – 3.65) |
| Nurse manager leadership       | 1.22 ( .86 – 1.75) |
| Staffing                       | .81 ( .56 – 1.17)  |
| Nurse-physician relations      | .95 ( .67 – 1.36)  |

**PES-NWI Composite**

|                               | 1.59 (1.03 - 2.45) * |

** ** P<0.01, * P<0.05

¹) Dependent variable: whether or not nurse participants had left their hospitals (remain = 1, resign = 0)

²) Reference group is “more than 40 years old”.

N=2,206
Discussion
The PES-NWI subscale: Nurse Manager Ability, Leadership, and Support of Nurses

- “Nurse Manager Ability, Leadership, and Support of Nurses” is an important part of the nursing practice environment.
- Managers’ behaviors significantly affect staff nurses’ physical and mental health and their intention to remain in or leave their job.
- To create a healthy work environment for nurses, authentic leadership by managers that is respected by the staff nurses is vital.
“Appropriate staffing” is another important part of a healthy work environment.

Although “staffing and resource adequacy” was the lowest among 5 subscales of the PES-NWI and lower than scores of non-magnet hospitals (Lake, 2002), the scores were related to staff nurses’ health and their intention to remain in or leave their job.

“Staffing” is also an important factor for realizing a healthy work environment for nurses, along with nurse managers’ leadership.
Characteristics of original magnet hospitals relate to nurses’ resignation behavior

- No significant relationships between the subscales of the PES-NWI and whether nurses actually resigned from hospitals
- Composite was significantly related to their resignation behavior, i.e., “higher composite score = less likely to resign”.
- Comprehensive realization of the characteristics of original magnet hospitals would tend to reduce nurses’ resignation behavior.
For future research

• Relationship between nursing practice environment and actual resignations showed that an attractive practice environment was an important factor for retaining nurses in their hospitals.

• To assess a causal relationship among nursing practice environment and long-term retention of nurses, more longitudinal research is needed.
Conclusions
Conclusions

1. Nurse managers’ leadership and appropriate staffing were significantly related to nurses’ health condition, and their tendency to remain working in their hospitals.

2. A total score of the PES-NWI that reflected the characteristics of original 1980s magnet hospitals was significantly related to nurses’ resignation behavior.
Conclusions

1. Nurse managers’ leadership and appropriate staffing were significantly related to nurses’ health condition, and their tendency to remain working in their hospitals.

2. A total score of the PES-NWI that reflected the characteristics of original 1980s magnet hospitals was significantly related to nurses’ resignation behavior.

3. Realization of the characteristics of the PES-NWI means realization of a healthy work environment for nurses.
Nursing practice environment (e.g., nurse managers’ leadership) → Staff nurses’

Health condition
Tendency to remain working in their hospitals
Resignation
Thank you so much for your kind attention.

This research was funded by the JSPS KAKENHI Grant-in-Aid for Scientific Research (B), Grant Number JP 24390476 (principal researcher: Yasuko Ogata).
Q & A
References:


• Ogata, Y., Nagano, M., Fukuda, T., & Hashimoto, M. (2011). Byouto ni kinmusuru kangosyoku no syugyo keizoku iko to kango jissenkannkyo to no kanren [Job retention and nursing practice environment of hospital nurses in Japan applying the Japanese version of the Practice Environment Scale of the Nursing Work Index (PES-NWI)]. Nihon koshu eisei zasshi [Japanese journal of public health], 58(6), 409-419.
