Important Factors Associated with the Research Utilization Competency of Nurses in Japan

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Nursing research

Systematic inquiry designed to develop trustworthy evidence about issues of importance to the nursing profession, including nursing practice, education, administration, and informatics. (Polit et al, 2012)

Research utilization in nursing practice

Quality improvement of nursing practice
Current state of research utilization by nurses in Japan

• Nurses are aware of the importance of research utilization in nursing practice
• But they are also aware of the difficulty of reading the literature and utilizing research findings in nursing practice.

Research utilization in nursing practice is an important issue for Japan
Four Phases of the Research

Phase 1
To conceptualize the research utilization in nursing practice through a qualitative study.

Phase 2
To develop a Scale for Self-assessment of Research Utilization Competency based on the results of the qualitative study in phase 1.

Phase 3
To clarify the current state of research utilization competency by Japanese nurses using the scale developed in phase 2.
Frequently, 15, 4%

Sometimes, 192, 45%

Seldom, 218, 51%

Japanese nurses should improve their research utilization competency

Related to the research utilization competency P<.001
Four Phases of the Research

Phase 1
To conceptualize the research utilization in nursing practice through a qualitative study.

Phase 2
To develop a Scale for Self-assessment of Research Utilization Competency based on the results of the qualitative study in phase 1.

Phase 3
To clarify the current state of research utilization competency by Japanese nurses using the scale developed in phase 2.
Purpose of the Phase 4

• To explore important factors associated with research utilization competency of nurses in Japan.
Conceptual Framework

Nursing Characteristics
- Types of Unit
- Years of Clinical Experience
- Job Title
- .................. 8 variables

Learning Characteristics
- Active Participation in Continuing Education
- Reading Professional Journals
- Hours of Study / Week
- .................11 variables

Research and Research Utilization
- Experience of Conducting Nursing Research
- Active Involvement in Research Effort in the Workplace
- ..................4 variables

Work Environment
- In-Service Education
- Support from Superiors
- .................5 variables

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Research Utilization Competency
Conceptual Framework

Nursing Characteristics

Research and Research utilization

Learning Characteristics

Work Environment

Examining characteristics related to research utilization competency of nurses

Identifying important characteristics related to research utilization competency of nurses

Discussing the educational issues
Methods

**Instruments**

- The Self-Evaluation Scale on Research Utilization Competency for Clinical Nurses (SRUC)
- The Nurses’ Attributes Questionnaire (NAQ)
The Self-Evaluation Scale on Research Utilization Competency for Clinical Nurses (SRUC)

• Measures the research utilization competency in nursing practice.
• Includes 6 subscales and consists of 35 items on a 5-point Likert scale.
• Items on the SRUC describe the behaviors needed to utilize research findings in nursing practice as identified by a qualitative study.
• The reliability and validity of the SRUC are well-established.
The Self-Evaluation Scale on Research Utilization Competency for Clinical Nurses (SRUC)

1. Searching for research findings that would improve nursing practice and assessing the quality of those findings

2. Deciding the appropriateness of utilizing research findings in nursing practice from different perspectives

3. Promoting the incorporation of new methods of nursing with the agreement of those concerned

4. Adjusting environment for incorporation of new methods of nursing

5. Adopting and spreading new methods of nursing while assessing their effectiveness

6. Solving problems arising from changes in nursing practice
The Nurses’ Attributes Questionnaire (NAQ)

- To Examine 28 variables related to characteristics of nurses.
- The content validity of the NAQ was ensured through a pilot study and a panel of experts.
Directors of Nursing in 200 Hospitals in Japan were asked by mail to participate in the study. 38 hospitals agreed to participate.

- Instrument packets were distributed to 860 nurses working in the 38 hospitals.
- Nurses returned the completed packets in self-addressed envelopes.

Data were statistically analyzed.
Ethical Considerations

• The study proposal was submitted to and approved by the IRB of the National Center for Global Health and Medicine, Japan.
Results and Discussion

860 nurses received an instrument packet

447 (52.0%) nurses returned the instruments by mail

Responses from 403 were valid and these responses were analyzed
### Demographic Characteristics of the Participants

**N=403**

<table>
<thead>
<tr>
<th>Sex</th>
<th>Female 383 (95.0%)</th>
<th>Male 19 (4.7%)</th>
<th>Unknown 1 (0.2%)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Age</th>
<th>mean=38.2, SD=8.7</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Years of clinical experience</th>
<th>mean=15.7, SD=8.5</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Job Title</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Head nurse</td>
<td>44 (10.9%)</td>
</tr>
<tr>
<td>Assistant head nurse</td>
<td>58 (14.4%)</td>
</tr>
<tr>
<td>Staff nurse</td>
<td>281 (69.7%)</td>
</tr>
<tr>
<td>Others &amp; Unknown</td>
<td>20 (4.9%)</td>
</tr>
</tbody>
</table>
Score Distribution of SRUC

N=403

95.7 (SD=21.4)

Total Score of RU

frequency
Relationship Between SRUC Scores and Nurses’ Characteristics: Univariate Analysis

**Nursing Characteristics**
- Job Title
- Teaching or Instructing Other Nurses

**Research and Research Utilization**
- Opportunity to Think about Research Utilization
- Knowledge of Nursing Research
- Perceived Importance of Research
- Research Experience
- Having Given Research Presentations
- Participation in Research Efforts in the Workplace
- Utilization of Research in Nursing Practice

**Learning Characteristics**
- Participation in Continuing Education
- Reading Professional Journals
- Hours of Study/Week
- Number of Conferences Attended/Year
- Opportunity to Study Nursing Research After Becoming a Nurse
- Opportunity to Study Research Utilization after Becoming a Nurse

**Work Environment**
- In-Service Education
- Support for Research from Superiors
- Collaboration with Colleagues to Conduct Research
- Frequency of Discussions with Colleagues about Research

**Research Utilization Competency**
Relationship between SRUC Scores and Nurses’ Characteristics: Univariate Analysis

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**Research Utilization Competency**
Figure 1. Job Title and SRUC Scores

** Figure 1. Job Title and SRUC Scores **

- **Head Nurses**: N=44
- **Associate Head Nurses**: N=58
- **Staff Nurses**: N=281

** p<.01   *** p<.001
Figure 2. Teaching or Instructing Other Nurses and SRUC Scores

Yes
N=231

No
N=171

*** p<.001
Figure 3. Participation in Continuing Education and SRUC Scores

**Active**
N=286

**Inactive**
N=115

*** p<.001

N=286

N=115

*** p<.001
Figure 4. Reading Professional Journals and SRUC Scores

- Frequently: N=49
- Sometimes: N=254
- Seldom: N=100

*** p<.001
Figure 5. Hours of Study/Week and SRUC Scores

- More than 3 hours: N=55
- 1-2 hours: N=134
- Less than 1 hour: N=214

** p<.01   *** p<.001
Figure 6. Number of Conference Attended/Year and SRUC Scores

**More than 3 times**

- N=55

**2 times**

- N=55

**1 time**

- N=55

**0 times**

- N=55

*** p<.001
Figure 7. Opportunity to Study Nursing Research After Becoming a Nurse and SRUC Scores
Figure 8. Opportunity to Study Research Utilization After Becoming a Nurse and SRUC Scores
Figure 9. Opportunity to Think About Research Utilization and SRUC Scores

*** p < .001
Figure 10. Knowledge of Nursing Research and SRUC Scores

- Much: N=33
- Not Much: N=188
- A Little: N=132
- Very Little: N=55

* p<.05  *** p<.001
Figure 11. Perceived Importance of Research and SRUC Scores

**Very Important**
- N = 100

**Important**
- N = 149

**A Little Important**
- N = 113

**Not So Important**
- N = 38

**Not Important**
- N = 2

*** p<.001
Figure 12. Research Experience and SRUC Scores

Had
N=352

Not Had
N=49

*** p<.001
Figure 13. Having Given Research Presentation and SRUC Scores

- More than 3 times: N=100
- 2 times: N=99
- 1 time: N=102
- nothing: N=101

Significance levels:
- * p<.05
- ** p<.01
- *** p<.001
Figure 14. Participation in Research Efforts in the Workplace and SRUC Scores

- Actively: N=109
- Neither: N=139
- Inactively: N=155

* p<.05  *** p<.001
Figure 15. Utilization of Research in Nursing Practice and SRUC Scores
Figure 16. In-Service Education and SRUC Scores

- Extensive: N=158
- Neither: N=184
- Not Substantial: N=52

**p<.01  ***p<.001
Figure 17. Support for Research from Superior and SRUC Scores

*** p<.001
Figure 18. Collaboration with Colleagues to Conduct Research and SRUC Scores

** N=213
Neither N=165
No N=24

** p<.01
Figure 19. Frequency of Discussing with Colleagues about Research and SRUC Scores

Frequently
N=66

Neither
N=166

Rare
N=171

*** p<.001
Important Factors Related to SRUC scores: Stepwise multiple regression analysis

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- Job Title
- Teaching or Instructing Other Nurses

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Research Utilization Competency

Independent variables

Dependent variable
Research Utilization Competency

- Knowledge of Nursing Research: $\beta = 0.248^{***}$
- Participation in Research Efforts in the Workplace: $\beta = 0.157^{**}$
- In-Service Education: $\beta = 0.165^{***}$
- Numbers of Conferences Attended /Year: $\beta = 0.163^{**}$

- Opportunity to Study Research Utilization After Becoming a Nurse: $\beta = 0.116^{*}$
- Frequency of Discussions with Colleagues about Research: $\beta = 0.107^{*}$

$R^2 = 0.363$
Research Utilization Competency

- Numbers of Conferences Attended /Year: $\beta = .163^{**}$
- In-Service Education: $\beta = .165^{***}$
- Participation in Research Efforts in the Workplace: $\beta = .157^{**}$
- Knowledge of Nursing Research: $\beta = .248^{***}$
- Opportunity to Study Research Utilization After Becoming a Nurse: $\beta = .116^*$
- Frequency of Discussions with Colleagues about Research: $\beta = .107^*$

$R^2 = .363$
Research Utilization Competency

- Numbers of Conferences Attended /Year
  - In-Service Education: β = 0.165***
  - Participation in Research Efforts in the Workplace: β = 0.157**
  - Knowledge of Nursing Research: β = 0.248***

- Opportunity to Study Research Utilization After Becoming a Nurse: β = 0.163**

- Frequency of Discussions with Colleagues about Research: β = 0.116*

R² = 0.363
Research Utilization Competency

- Numbers of Conferences Attended /Year
  - In-Service Education: \( \beta = .165^{***} \)
  - Participation in Research Efforts in the Workplace: \( \beta = .157^{**} \)
- Opportunity to Study Research Utilization After Becoming a Nurse: \( \beta = .163^{**} \)
- Knowledge of Nursing Research: \( \beta = .248^{***} \)
- Frequency of Discussions with Colleagues about Research: \( \beta = .116^{*} \)

\[ R^2 = .363 \]
Conclusions

• There are 6 factors crucial to research utilization competency, and having sufficient knowledge of nursing research is the most important.

• Participation in continuing education or attending academic conferences and being in a work environment in close contact with research are crucial to improving research utilization competency.

• One topic for the future is whether or not current basic nursing education and continuing education are adequate for nurses to obtain sufficient knowledge of nursing research.

• Another topic is to assess whether or not work environments are appropriate in terms of their close contact with research.