Outcomes linked to a hospital-based, virtual nursing research basics course

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Objectives

By the end of this presentation, attendees will

1. describe one reason why nursing knowledge and outputs related to research are important to the profession
2. describe two benefits to offering a virtual nurse research class to nurses working in the acute care setting
Background & Problem

• Patient outcomes improve when RNs engage in research activities (Melnyk et al., 2017; Wu et al., 2018)

• Pre-licensure undergraduate programs recognize the importance of research; however, programs are not designed to engage students in research activities to foster competency in this skill (American Association of Colleges of Nursing [AACN], 2018).

• American Nurse Credentialing Center’s (ANCC) Magnet® recognition is an internationally recognized program.
  • New knowledge, innovations, and improvements (NK)
    • 1 Ongoing study
    • 2 Closed studies

How do we prepare nurses to do this Research?
Research Basics 101 Program

Step 1: HealthStream Modules (25-45 minutes each)
- Clinical Scholarship
- Finding and Evaluating the Evidence
- The Research Question
- Research Methods
- Data Collection and Analysis

Step 2: A Virtual 4-Hour Class (Offered Monthly)
- Applying research principles from start to finish
- Librarian & Library Resources
- IRB
- 7 CEUs
To measure the impact of a research basics course on self-reported nurse confidence, knowledge, and participation in clinical scholarship outputs.
Evaluation Plan Approach

T1
• Pre-Modules
• Baseline Evaluation
  • Demographics
  • Confidence
  • Knowledge
  • EBP/Research Use

T2
• Post-Modules Evaluation
  • Confidence
  • Knowledge

T3
• Post-Virtual Class Evaluation
  • Confidence
  • Knowledge

T4
• 6-Month Follow-up Evaluation
  • Confidence
  • Knowledge
  • EBP/Research Use
### Evaluation Forms

<table>
<thead>
<tr>
<th>Demographics (5)</th>
<th>Confidence (13)</th>
<th>Knowledge (18)</th>
<th>EBP/Research Use (9)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Years of Experience</td>
<td>• Likert Scale</td>
<td>• True/False</td>
<td>• Multiple Choice/All that apply</td>
</tr>
<tr>
<td>• Region Location</td>
<td>• “Not at all – completely confident”</td>
<td>• Multiple Choice</td>
<td>• Shared Gov.</td>
</tr>
<tr>
<td>• Why are you taking the course</td>
<td>• Steps in research process:</td>
<td>• QI/EBP/Research</td>
<td>• Implementation of QI/EBP/Research</td>
</tr>
<tr>
<td>• Nurse Role</td>
<td>• Clinical Inquiry</td>
<td>• PICOT</td>
<td>• Journal Articles</td>
</tr>
<tr>
<td>• Race/Ethnicity</td>
<td>• PICOT</td>
<td>• Literature Review/Synthesis</td>
<td>• Conference attendance</td>
</tr>
<tr>
<td></td>
<td>• Literature Review/Synthesis</td>
<td>• Implementing</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Implementing</td>
<td>• Data Analysis</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Data Analysis</td>
<td>• Dissemination</td>
<td></td>
</tr>
</tbody>
</table>

**Steps in research process:**
- Clinical Inquiry
- PICOT
- Literature Review/Synthesis
- Implementing
- Data Analysis
- Dissemination

**EBP/Research Use (9):**
- Multiple Choice/All that apply
- Shared Gov.
- Implementation of QI/EBP/Research
- Journal Articles
- Conference attendance
Results

104 nurses completed the course by October 2022
n = 19 matching baseline to 6-months

Years of Experience:
mean = 14
SD 13
Range (1-39)
Results

Reason for Taking the Class

- Other: 4
- I'm in school and thought it would benefit me: 5
- I need CEUs: 4
- I want to do/interested in research: 11
- For clinical ladder/professional portfolio points: 7

Role

- Nurse Leader: 1
- Direct Care Nurse: 15
- Educator/Professional Development Specialist: 1
- APRN: 2
<table>
<thead>
<tr>
<th>Confidence Questions</th>
<th>Baseline</th>
<th>6-Months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Describing the research process from start to finish</td>
<td>1.8</td>
<td>2.9</td>
</tr>
<tr>
<td>Asking a research question about your clinical practice</td>
<td>2.2</td>
<td>3.0</td>
</tr>
<tr>
<td>Distinguishing between different types of clinical inquiry (EBP/QI/Research)</td>
<td>2.1</td>
<td>2.9</td>
</tr>
<tr>
<td>Formulating a PICO(T) question</td>
<td>2.2</td>
<td>2.9</td>
</tr>
<tr>
<td>Performing a literature search in an electronic database</td>
<td>2.5</td>
<td>3.3</td>
</tr>
<tr>
<td>Critiquing and synthesizing the research evidence</td>
<td>1.9</td>
<td>2.3</td>
</tr>
<tr>
<td>Understanding the role of IRB in research</td>
<td>1.7</td>
<td>2.9</td>
</tr>
<tr>
<td>Labeling study variables as independent or outcome (dependent)</td>
<td>1.8</td>
<td>2.2</td>
</tr>
<tr>
<td>Describing the difference between a problem statement, purpose statement, and a research question</td>
<td>1.9</td>
<td>2.2</td>
</tr>
<tr>
<td>Differentiating between quantitative and qualitative research</td>
<td>2.5</td>
<td>3.2</td>
</tr>
<tr>
<td>Identifying the difference between descriptive and inferential statistics</td>
<td>1.3</td>
<td>2.1</td>
</tr>
<tr>
<td>Interpreting statistical results from a research study</td>
<td>1.3</td>
<td>2.2</td>
</tr>
<tr>
<td>Identifying an appropriate venue for disseminating study results</td>
<td>1.5</td>
<td>2.6</td>
</tr>
</tbody>
</table>

Baseline mean = 1.9
6 month mean = 2.9  p<0.001
<table>
<thead>
<tr>
<th>Knowledge Questions</th>
<th>Baseline (n) % correct</th>
<th>6-Months (n) % correct</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical Scholarship includes (check all that apply):</td>
<td>(9) 47%</td>
<td>(9) 47%</td>
</tr>
<tr>
<td>The integration of best research evidence with clinical expertise, and patient values is considered</td>
<td>(18) 95%</td>
<td>(16) 84%</td>
</tr>
<tr>
<td>To develop new knowledge or test existing knowledge is considered</td>
<td>(18) 95%</td>
<td>(17) 89%</td>
</tr>
<tr>
<td>When the goal is to improve quality outcomes in a particular setting, you are doing</td>
<td>(17) 89%</td>
<td>(18) 95%</td>
</tr>
<tr>
<td>The P in PICOT means</td>
<td>(18) 95%</td>
<td>(19) 100%</td>
</tr>
<tr>
<td>The I in PICOT means</td>
<td>(18) 95%</td>
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</tr>
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<td>(18) 95%</td>
<td>(19) 100%</td>
</tr>
<tr>
<td>The O in PICOT means</td>
<td>(17) 89%</td>
<td>(18) 95%</td>
</tr>
<tr>
<td>The T in PICOT means</td>
<td>(19) 100%</td>
<td>(18) 95%</td>
</tr>
<tr>
<td>Which of the following reflects a PICO question?</td>
<td>(13) 68%</td>
<td>(16) 84%</td>
</tr>
<tr>
<td>The Providence online library is only available on the INTRAnet at work?</td>
<td>(14) 74%</td>
<td>(18) 95%</td>
</tr>
<tr>
<td>A systematic review or meta-analysis of randomized control trials is considered what level of evidence?</td>
<td>(12) 63%</td>
<td>(13) 68%</td>
</tr>
<tr>
<td>All quasi-experimental research produces the same quality of evidence?</td>
<td>(17) 89%</td>
<td>(17) 89%</td>
</tr>
<tr>
<td>Identifying Research</td>
<td>(11) 58%</td>
<td>(10) 53%</td>
</tr>
<tr>
<td>Identifying EBP</td>
<td>15) 79%</td>
<td>(14) 74%</td>
</tr>
<tr>
<td>Identifying QI</td>
<td>(15) 79%</td>
<td>(14) 74%</td>
</tr>
<tr>
<td>Which of the following describes a qualitative research approach?</td>
<td>(8) 42%</td>
<td>(13) 68%</td>
</tr>
<tr>
<td>Which of the following describes a quantitative approach?</td>
<td>(9) 47%</td>
<td>(14) 74%</td>
</tr>
</tbody>
</table>
## Results

<table>
<thead>
<tr>
<th></th>
<th>Baseline</th>
<th>6-months</th>
</tr>
</thead>
<tbody>
<tr>
<td>External Dissemination of Research</td>
<td>n = 1, 5%</td>
<td>n = 3, 16%</td>
</tr>
<tr>
<td>Participation in EBP</td>
<td>n = 4, 21%</td>
<td>n = 6, 32%</td>
</tr>
</tbody>
</table>
Conclusion

We found a statistically significance increase in confidence levels between baseline and 6 months post class.

Although not statistically significant, we found an increase in knowledge in 9 of the 18 questions.

Limitations:
Small Sample size
We created the knowledge questions
Implication for practice

Educating nurses on the research process and boosting confidence may increase nurse research outputs including increase implementation and dissemination.

Future work includes continued tracking and evaluating the program and modifying the questionnaire as valid and reliable tools become available.
References


American Nurses Association. (n.d.). Magnet® model - Creating a Magnet® culture. American Nurses Credentialing Center


Acknowledgements

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Questions?

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