Evaluation of a Novel Evidence-Based Practice Mentorship Program in a Pediatric Quaternary Care Setting

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Background

Problem Statement
Evidence-based practice (EBP) is a problem solving mechanism utilizing existing evidence to inform clinical decision making in order to deliver high quality care, reduce costs and achieve optimal patient outcomes. A 2012 survey at Boston Children’s Hospital revealed an opportunity to improve nurses’ knowledge and implementation of EBP. It prompted development of educational strategies to build and sustain an institutional culture of EBP.

Intervention
The novel EBP mentorship program (EBPMP) was designed to be a flexible, economical and self-directed initiative whereby participants:

- Received mentorship from internal EBP experts
- Utilized a workbook to guide them through the self-directed program
- Moved through steps of the EBP process and received exposure to EBP resources from within and outside of the institution
- Completed supplemental readings and ten education modules
- Carried out an EBP project that addressed an important clinical practice question
- Disseminated their findings internally and externally

Project Aim
This research project evaluated the effect of EBPMP on nurse participants’ value, implementation and knowledge of EBP, as well as their mentorship experience, using a mixed methods design.

Methods

Quantitative Analysis
Quantitative analysis of pre and post EBPMP using Quick-EBP-VIK survey results. Quick-EBP-VIK is a 19-item instrument that measures nurses’ value, implementation and knowledge of EBP. It is intended to identify EBP learning needs among nursing staff for hospital educators to develop and customize EBP curriculum.

Qualitative Analysis
Qualitative content analysis of EBPMP using individual or group semi-structured interviews near the end of the yearlong program.

EBPMP Cohort 1
Comparison of Quick-EBP-VIK average domain scores for an institution wide survey conducted in 2012 and Cohort 1 in 2016 pre and post EBPMP.

Quick-EBP-VIK Pre-Post EBPMP
13 nurse mentees participated and completed the pre EBPMP survey, and 12 completed the post EBPMP survey. T-test comparisons were used to examine changes in pre and post participation means with a p value < 0.05 used for statistical significance.

<table>
<thead>
<tr>
<th>Items</th>
<th>Pre EBPMP (N=13)</th>
<th>Post EBPMP (N=12)</th>
<th>t Value</th>
<th>Mean (SD)</th>
<th>Mean (SD)</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td></td>
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<tr>
<td>EBP enables me to provide high quality care</td>
<td>4.00 (1.04)</td>
<td>4.00 (1.04)</td>
<td>0.483</td>
<td></td>
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<tr>
<td>Environment values change in practice based on EBP</td>
<td>4.15 (0.60)</td>
<td>4.15 (0.60)</td>
<td>0.171</td>
<td></td>
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<tr>
<td>Nursing leadership values EBP</td>
<td>4.23 (0.49)</td>
<td>4.23 (0.49)</td>
<td>0.174</td>
<td></td>
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<tr>
<td>I am able to change nursing practice by using EBP</td>
<td>4.15 (0.60)</td>
<td>4.15 (0.60)</td>
<td>0.150</td>
<td></td>
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<tr>
<td>I believe all EBP is important to my nursing practice</td>
<td>4.00 (1.04)</td>
<td>4.00 (1.04)</td>
<td>0.916</td>
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<tr>
<td>Knowledge</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Regarding steps of EBP</td>
<td>2.31 (0.75)</td>
<td>2.31 (0.75)</td>
<td>0.117</td>
<td></td>
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<tr>
<td>How to form the PICO question</td>
<td>2.15 (0.83)</td>
<td>2.15 (0.83)</td>
<td>0.137</td>
<td></td>
<td></td>
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<tr>
<td>About ranking the hierarchy of evidence</td>
<td>2.38 (0.80)</td>
<td>2.38 (0.80)</td>
<td>0.050</td>
<td></td>
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<tr>
<td>Performing a literature search using an online database</td>
<td>2.46 (0.87)</td>
<td>2.46 (0.87)</td>
<td>0.058</td>
<td></td>
<td></td>
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<tr>
<td>Critically appraising a systematic review</td>
<td>2.45 (0.83)</td>
<td>2.45 (0.83)</td>
<td>0.050</td>
<td></td>
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<tr>
<td>Critically appraising a qualitative research study</td>
<td>2.31 (0.83)</td>
<td>2.31 (0.83)</td>
<td>0.058</td>
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<tr>
<td>Implementation</td>
<td></td>
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<tr>
<td>Frequency of literature searches performed</td>
<td>1.62 (0.96)</td>
<td>2.31 (1.11)</td>
<td>2.109</td>
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<tr>
<td>Frequency of critical appraisal of literature search evidence</td>
<td>1.42 (0.51)</td>
<td>2.08 (0.29)</td>
<td>0.000</td>
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<td>Frequency of having performed steps of EBP</td>
<td>2.15 (0.46)</td>
<td>2.67 (0.15)</td>
<td>1.439</td>
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<td>Frequency of having developed a PICO question</td>
<td>2.31 (0.75)</td>
<td>2.67 (0.15)</td>
<td>0.000</td>
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<tr>
<td>Frequency of having shared the EBP process/knowledge</td>
<td>1.62 (0.96)</td>
<td>2.67 (0.15)</td>
<td>0.000</td>
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<tr>
<td>Frequency of having used EBP resources to propose changes</td>
<td>2.31 (0.75)</td>
<td>2.67 (0.15)</td>
<td>0.000</td>
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<tr>
<td>Frequency of EBP results having resulted in a change</td>
<td>2.31 (0.75)</td>
<td>2.67 (0.15)</td>
<td>0.000</td>
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Individual or Group Interviews
Individual and group interview data elicited four themes: 1. Nurse mentees valued the necessity of the EBP process, the need to facilitate this process, and impact of their individual EBP projects 2. Time was seen as a significant barrier to conducting EBP 3. Nurse mentees desired more mentor interaction 4. The perceived mentee-mentor experience was positive and highly supportive during the most difficult EBP steps, including performing the literature critique and hierarchal categorization

Findings and Next Steps
- EBPMP significantly increased nurse mentees’ knowledge of EBP within all items, indicating its utility as an educational model.
- EBPMP can be implemented within an environment where value of EBP has been established though an ongoing need for knowledge and implementation exists.
- EBP steps involving literature critique and hierarchical categorization were the most time consuming and difficult activities of the curriculum.
- Overwhelming positive responses from the nurse mentees highlight its critical importance as part of a multifaceted approach.
- Recommended EBPMP modifications:
  - Include mechanisms for mentees to implement change
  - Strengthen strategies to address EBP barriers such as time and resources
  - Optimize mentor interaction through on line forums, didactic sessions and workshops
  - Consider options for utilization of a limited mentor pool in response to increasing mentor enrolment
  - Explore the mentor experience
  - Track mentee dissemination and practice changes over time

Acknowledgements
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