MEASURING WHAT MATTERS:
A MULTI-SITE STUDY OF SELF-REPORTED AND OBJECTIVELY MEASURED NURSING EBP KNOWLEDGE

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Conflicts of Interest and Disclosures

The presenters have no real or perceived vested interests or conflicts of interest related to this presentation.

The study authors thank their home institutions for supporting this research and its dissemination. This study was supported in part by the Ethel Clark Fellowship (A. Wonder, PI) from the Indiana University School of Nursing.
Objectives

☐ Describe findings from nursing and other fields which suggest that self-assessment of knowledge and ability corresponds poorly with more objective measures of the same variables.

☐ Describe the findings of a multisite study of nurses’ EBP knowledge where there was little correspondence between self-reported and objectively measured EBP knowledge.

☐ Distinguish between scenarios when self-assessment may be accurate and useful, compared to scenarios where more objective approaches are necessary.
EBP is widely believed to be critical to delivery of high-quality, safe patient care.

Delivering evidence-based nursing care is dependent upon the nurse possessing a variety of EBP-related knowledge, skills, and abilities (KSAs).

In the US, two influential frameworks, from AACN (Baccalaureate Essentials) and QSEN, help identify key EBP / research KSAs for nurses.

Most research on nurses’ KSAs and beliefs about EBP relies on nurses’ self-reports (of practices) and self-assessment (of knowledge/ability)
Evidence from outside the discipline consistently shows that self-reports of knowledge, skills, or ability correspond poorly to objective measures of the same construct (Davis et al., 2006; Zell & Krizan, 2014).

Example: Asking subjects to self-assess their knowledge vs. administering an exam testing that knowledge.

Baxter and Norman (2011) examined the correspondence between self-assessed and objectively measured ability to respond to clinical crisis situations among $N = 27$ senior nursing students.

All but one correlation between students’ self-assessments and the objective measures were negative/inverse, and frequently became stronger (more negative) over time.
Zell & Krizan (2014)

- Zell and Krizan (2014) meta-synthesized data from 22 different meta-analyses ($N = 357,547$ subjects) comparing self-assessments with objective measures across a range of tasks.

- The overall correlation between self-assessment and objective measures was $r = .29$ (.11).
  - Correspondence between subjective and objective measures is even smaller when tasks are less familiar or more complex.
Current Study: Methods

- Multi-site, cross-sectional, descriptive design.
- IRB approval obtained prior to study commencement.
- Data collected over 12 weeks in 2015 from practicing nurses at 2 Mid-western US, Magnet®-designated hospitals (part of a single network).
- Subjects completed study instruments in proctored sessions using either paper forms or secured computers. Upon completion, subjects received a $10 incentive gift card.
Current Study: Measures

- Demographic and personal characteristics were collected first, including variables such as age, years of RN experience, educational level, and current practice role, among others.

- Evidence-based Practice Questionnaire (EBPQ; Upton & Upton, 2006), a 24-item self-report inventory examining 3 areas of EBP: EBP knowledge/skills, attitudes toward EBP, and practice/use of EBP.

- Evidence-based Practice Knowledge Assessment for Nursing (EKAN; Spurlock & Wonder, 2015), a 20-item multiple choice test developed under the Rasch model. Items vary in difficulty and were sampled from AACN and QSEN EBP/research domains.
Data were collected from $N = 163$ subjects. Complete data (across all measures) were available from $N = 151$ subjects. This sample size was the basis for all measurement-related data analyses.

- 95% Caucasian/White; 92% female.
- Age: $M = 40.9$ years (Range: 23-66 years)
- Years of RN Experience: $M = 14.6$ ($SD = 10.8$) years
- Education: 57.7% BSN; 22.1% MSN.
Current Study: Results

Subjects' \((N = 151)\) Mean EBP Measure Scores, by Highest Nursing Degree

- EBPQ-Practice
- EBPQ-Attitudes
- EBPQ-Knowledge
- EKAN Sum Score

- 7 point scale: 1 = never to 7 = frequently
- 7 point scale: bipolar statements
- 7 point scale: 1 = poor to 7 = best

Sum score: 20 points possible
Current Study: Results

- Means (SD) from each subscale of the EBPQ and EKAN are depicted below.
- Each subscale of the EBPQ was statistically significantly correlated with the other subscales.
- Correlations between the EBPQ subscales and EKAN were small and positive; none reached statistical significance.

<table>
<thead>
<tr>
<th>Variable</th>
<th>M (SD)</th>
<th>1</th>
<th>2</th>
<th>3</th>
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</thead>
<tbody>
<tr>
<td>1. EKAN Sum Score</td>
<td>10.58 (2.87)</td>
<td>-</td>
<td></td>
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<tr>
<td>2. EBPQ—Knowledge/Skills</td>
<td>4.68 (0.81)</td>
<td>0.122</td>
<td></td>
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<tr>
<td>3. EBPQ—Attitude</td>
<td>5.51 (0.98)</td>
<td>0.123</td>
<td>0.398**</td>
<td>-</td>
</tr>
<tr>
<td>4. EBPQ—Practice/Use</td>
<td>4.48 (1.37)</td>
<td>0.017</td>
<td>0.595**</td>
<td>0.350**</td>
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* = p < 0.05
** = p < 0.01
Responses on the belief item “I am sure I can deliver evidence-based care” and each EBPQ subscale scores were positively and statistically significantly correlated ($r = .228 - .413, p < .01$), but not with EKAN sum scores ($r = -.066, p = .418$).
# EKAN Score Comparisons

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<tr>
<td>Bachelor of Science in Nursing (BSN) students from two programs in the Midwest US</td>
<td>Practicing RNs at two Magnet® designated hospitals in Midwest US</td>
<td>Associate degree in Nursing (ADN) students from 5 schools across the US</td>
<td>BSN through Doctor of Nursing Practice (DNP) students in 7 schools across US</td>
<td></td>
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<tr>
<td>Sample Size</td>
<td>200</td>
<td>151</td>
<td>149</td>
<td>754</td>
</tr>
<tr>
<td>Mean (SD) EKAN Score</td>
<td>10.4 (2.34)</td>
<td>10.58 (2.87)</td>
<td>8.77 (2.09)</td>
<td>9.57 (3.73)</td>
</tr>
<tr>
<td>EKAN Correlation w/ “EBP Sure” Question</td>
<td>.135, ns</td>
<td>-.066, ns</td>
<td>.037, ns</td>
<td>.069, ns</td>
</tr>
<tr>
<td>EKAN Correlation w/ EBPQ</td>
<td>n/a</td>
<td>.017 - .023, ns</td>
<td>-.020 - .098, ns</td>
<td>.15 - .21, ns</td>
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* current study; ** preliminary data analysis
Consistent with findings in other fields, results from the current study suggest there is little correlation between self-assessment of knowledge/ability and more objective measures of the corresponding construct.

Nurses’ education level is positively associated with EKAN sum scores, but not with self-reported EBP knowledge/skills, practice/use, or attitudes.

Objective measures should be used whenever possible to more directly measure constructs of interest.
The term “self-report” is not synonymous with “self-assessment”:

- Self-reports (of practices, beliefs, etc.) may be the only method of measurement possible for some constructs, and may or may not be influenced by self-bias.
- Self-assessments likely include some level of self-bias (e.g., positive self bias) in addition to measurement of the underlying construct.

When biases are likely to impact the quality and precision of measurements, researchers should choose more objective measures which are less likely to be so influenced.

The field could benefit from development of new measures with robust validity and reliability evidence, collected in an ongoing fashion, over time and across research teams.
References


Questions/Contact

Additional Information
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EKAN
- http://nursingmeasure.org