Self-reported and objectively assessed knowledge of evidence-based practice terminology

- a survey among healthcare students

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9th EBHC International Conference, 2019
Background

- Self-reported scales\textsuperscript{1-4} and objective measurement tools\textsuperscript{5-11} are used to examine self-perceived and objective knowledge of evidence-based practice (EBP).

- Self-report of skills and abilities correspond poorly to objective performance\textsuperscript{12,13}.

- Few studies report correlations between self-reported and objectively measured competence in EBP\textsuperscript{14-17}.

- Agreement between self-perceived and objective knowledge of EBP terminology has not been widely investigated.

\textsuperscript{1} Johnston et al. 2003; \textsuperscript{2} McEvoy et al. 2010; \textsuperscript{3} Ruzafa-Martinez et al. 2013; \textsuperscript{4} Upton et al. 2016;
\textsuperscript{5} Fritsche et al. 2002; \textsuperscript{6} Tilson et al. 2010; \textsuperscript{7} Hendricson et al. 2011; \textsuperscript{8} Lewis et al. 2011; \textsuperscript{9} Spek et al. 2013; \textsuperscript{10} Ilic et al. 2014; \textsuperscript{11} Spurlock et al. 2015
\textsuperscript{12} Prince et al. 2008; \textsuperscript{13} Zell et al. 2014
\textsuperscript{14} Khan et al. 2001; \textsuperscript{15} Lai et al. 2011; \textsuperscript{16} Aguirre-Raya et al. 2016; \textsuperscript{17} Hagedorn Wonder et al. 2017
Aims

The aim of this study was to

1) examine agreement between self-reported and objectively assessed knowledge of EBP terminology among healthcare students
2) explore this agreement between students with different levels of EBP exposure
## Setting

**NORWAY**
- EBP national priority in educational healthcare programs
- Increase in EBP teaching past decade
- Bachelor (3 yrs): EBP not fully integrated in curricula
- Master: Stand-alone course in EBP and research methodology, level varied between programs

**CANADA**
- EBP increasingly part of individual standards of practice
- EBP teaching in curricula for two decades
- Bachelor (4 yrs): EBP integrated in theory and clinical courses, supported with e-learning and summative assessments
- Master: Stand-alone course in EBP and research methodology in first semester, with reinforcement in subsequent courses

EBP exposure was considered higher among all Canadian students and Norwegian master’s students than among Norwegian bachelor’s students

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Methods

Design
› Cross-sectional study

Sample
› Bachelors and Masters students from Norway (n=336) and Canada (n=154)

Measurement
› Questionnaire with 18 self-reported and 6 open-ended questions

Analysis
› Intraclass correlation coefficient (ICC) for absolute agreement
› Weighted quadratic kappa
Measurement

Measurement with three parts:

1. Demographic characteristics
2. Self-reported knowledge
   › 17 items from the Terminology domain of the EBP Profile questionnaire\(^1\)
   › 1 self-reported item on EBP
3. Objective knowledge
   › 6 open-ended questions

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\(^1\) McEvoy et al. Development and psychometric testing of a trans-professional evidence-based practice profile questionnaire. Med Teach. 2010
Scoring rubric

Five-level scoring rubric

› Developed by experts in EBP teaching
› Values from 1 «never heard the term» to 5 «understand and could explain to others»
› Consistency explored by two raters
Results

› Of all eligible, 291 (59%) answered
› Higher response rate in Norway (70%) than in Canada (37%)
› Mean age 26.4 years (range 19–51)
› Most females (87%)
› Higher proportion of Norwegians (80%)
› Higher proportion of students with low exposure to EBP and research methodology (64%)
Results_agreement

- Low overall agreement between self-reported and objectively assessed open-ended items of EBP\textsuperscript{2} Terminology domain (ICC = 0.29)
- Self-reported knowledge higher than assessed (p < 0.001)
- Large variations in agreement values between self-reported and assessed open-ended items
- Substantial agreement for two items
- Slight agreement for nine items
Agreement measures were equal for high (ICC = 0.11) and low (ICC = 0.11) EBP exposure
Limits

› Open-ended questions and scoring rubric were not evaluated for reliability and validity

› EBP terminology is only one facet of EBP knowledge

› Convenience sample of students from two educational institutions in two different countries

› Small sample size of high EBP exposed students
Bottom line

› We found low overall agreement between healthcare students' self-reported and objectively assessed knowledge of EBP terminology

› As a discriminatory tool, for the purpose of educational assessment, academic promotion or clinical certification, users should be aware that self-ratings would be higher than objectively assessed knowledge