



Evidence Summary

Low Level Evidence Suggests That Librarian-Led Instruction in Evidence Based Practice is Effective Regardless of Instructional Model

A Review of:

Swanberg, S. M., Dennison, C. C., Farrell, A., Machel, V., Marton, C., O'Brien, K. K., ... & Holyoke, A. N. (2016). Instructional methods used by health sciences librarians to teach evidence-based practice (EBP): a systematic review. *Journal of the Medical Library Association: JMLA*, 104(3), 197-208. <http://dx.doi.org/10.3163/1536-5050.104.3.004>

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Abstract

Objective – To determine both the instructional methods and their effectiveness in teaching evidence based practice (EBP) by librarians in health sciences curricula.

Design – Systematic review.

Setting – A total of 16 databases, Google Scholar, and MLA Annual Meeting abstracts.

Subjects – There were 27 studies identified through a systematic literature search.

Methods – An exhaustive list of potential articles was gathered through searching 16

online databases, Google Scholar, and MLA Annual Conference abstracts. Inclusion and exclusion criteria were identified to inform the literature search and determine article eligibility. Duplicates were removed and the remaining search results were divided into sets and assigned to two reviewers who screened first by title/abstract and then by full-text. A third reviewer addressed disagreement in article inclusion. Data extraction, using a validated method described by Koufogiannakis and Wiebe (2006), and critical appraisal, using the Glasgow checklist (1999), were performed concurrently.

Main Results – After removal of duplicates 30,043 articles were identified for initial

title/abstract screening. Of the 637 articles assessed for full-text screening 26 articles and 1 conference proceeding ultimately met all eligibility criteria. There was no meta-analysis included in the synthesis. There were 16 articles published in library and information science journals and 10 in health sciences journals. Of those studies, 22 were conducted in the United States. A wide range of user groups was identified as participants in the studies with medical students and residents representing the highest percentage and nursing and other allied health professional programs also included. While there was variation in sample size and group allocation, the authors estimate an average of 50 participants per instructional session. Included studies represented research undertaken since the 1990s. All studies addressed at least one of the standard EBP steps including obtaining the best evidence through a literature search (27 studies), developing a clinical question (22 studies), and critical appraisal (12 studies). There were 11 studies which addressed applying evidence to clinical scenarios, and 1 study which addressed the efficacy and efficiency of the EBP process. The majority of studies indicated that literature searching was the primary focus of EBP instruction with MEDLINE being the most utilized database and Cochrane second. Other resources include databases and clinical decision support tools.

Teaching methods, including lecture, small group, computer lab, and online instruction, varied amongst the studies. There were 7 studies which employed 1 instructional method while 20 employed a combination of teaching methods. Only one study compared instructional methods and found that students obtained better scores when they received online instruction as compared with face-to-face instruction. The difference, however, was not statistically significant.

Skills assessments were conducted in most of the studies utilizing various measurements both validated and not validated. Given the variation in measurement tools a cross-study analysis was not possible. The most common assessment methods included self-reporting

and pre- and post-surveys of participants' attitudes and confidence in EBP skills.

Randomization was utilized in 10 studies, and an additional 3 studies had a "clearly defined intervention group." There were 10 blinded studies and 15 studies utilized cohorts with pre- and post- intervention assessments. There were 25 studies which included descriptive statistics and many also included inferential statistics intended to show significance. Differences between groups were assessed with parametric measures in 9 studies and non-parametric measures in 15 studies. Good to high statistical significance on at least 1 measurement was achieved in 23 studies. Given the absence of effect sizes, the level of differences between study groups could not be determined.

Conclusion – Numerous pedagogical methods are used in librarian-led instruction in evidence based practice. However, there is a paucity of high level evidence and the literature suggests that no instructional method is demonstrated to be more effective than another.

Commentary

As one of the 15 questions/research priorities identified by the MLA Delphi Study (Eldredge, Ascher, Holmes & Harris, 2012) this study filled a clear gap in the literature while also addressing the need for more rigorous comparative studies in EBP instruction. With an increasing focus on demonstrating value and impact, the role of the librarian in curricular outcomes – particularly those outcomes as defined by accreditation – needs to be evidence based. More rigorous studies would provide compelling evidence to support the importance of librarian-provided EBP instruction in medical education. The methodology for this systematic review is sound, however the variability of the available studies makes overall comparison and significance difficult to determine.

The search strategy was robust and included 16 databases as well as Google Scholar. It would be interesting to know which included

studies came from which databases. While the choice of databases seems exhaustive it could also be considered excessive. Would librarians, for example, expect to see such a list from others in a systematic review? That said, the choice of databases seems to reflect the international collaboration of authors on this project, which is positive and inclusive. The authors chose to search abstracts from only one conference. While the MLA Annual Meeting is large and representative, perhaps EAHIL, EBLIP, and CHLA may have also been considered.

Initial screening of the first 500 results from Google Scholar and the 2009-2014 MLA Annual Meeting abstracts yielded recent results. However, a publication date limit was not utilized in the database searches and therefore the overall results included articles covering two decades. One must consider, for example, that studies from the 1990s are not necessarily comparable to studies from the 2010s given changes in search methods, online advances, assessment methods, etc. How EBP is taught largely depends on how EBP is practiced and one may argue that certainly the literature searching aspect of EBP has changed significantly over time.

The results are presented clearly and the discussion is insightful and provocative. In addition to the results described above, the authors gleaned valuable information from the studies including the fact that librarian authors

tended to publish in library and information science journals while medical faculty published in medical journals. This is interesting considering that librarians in all 27 studies held an instructor role with duties that included curriculum development, teaching, and assessment.

References

- Eldredge, J. D., Ascher, M. T., Holmes, H. N., & Harris, M. R. (2012). The new Medical Library Association research agenda: Final results from a three-phase Delphi study. *Journal of the Medical Library Association, 100*(3), 214-8. <http://dx.doi.org/10.3163/1536-5050.100.3.012>
- Koufogiannakis, D., & Wiebe, N. (2006). Effective methods for teaching information literacy skills to undergraduate students: A systematic review and meta-analysis. *Evidence Based Library and Information Practice, 1*(3), 3-43. <http://dx.doi.org/10.18438/B8MS3D>
- Morrison, J. M., Sullivan, F., Murray, E., & Jolly, B. (1999). Evidence-based education: Development of an instrument to critically appraise reports of educational interventions. *Medical Education, 33*(12), 890-3. <http://dx.doi.org/10.1046/j.1365-2923.1999.00479.x>