EBM Instruction – Effects on Accuracy and Source Quality
Evidence-Based Medicine (EBM) Instruction and Improving Student Outcomes

Background
EBM (Evidence Based Medicine) instruction can be translated as information literacy in a general academic environment.

The strategic focus of the A. T. Still Memorial Library is the preparation of health care clinicians and practitioners who understand the need and have the skills to access and effectively use evidence/information in their professional practice.


Our primary assertion is that EBM instruction leads to better evidence which will lead to better healthcare.

Study Design

The effects of an EBM instruction session for a class of physician assistants was evaluated by a pre-test and post-test assessment of unknown clinical questions. Answer accuracy and source quality was assessed. A control group was originally included in the design.

Research Question
Will an EBM instruction session improve students’ accuracy and source quality in answering clinical questions?

Process and Methods

A pre-test with five clinical questions was administered with a four minute time limit for each question. Students were asked to record their source.

1½ hour EBM lecture based on a modified EBM pyramid theory followed by a ½ hour practical review of the library's discovery tool, Still OneSearch, was given one week later.

Post-test of 4 questions was conducted following the second instruction session.

The control group design was carried out, but results were not used due to an unexpected class instruction time change.

Pre-test and post-test answers were evaluated for correctness by the class instructor. Source quality was evaluated by two participating librarians on a 5 point scale based on agreed upon rubric (see below).

Developing a Rubric To Measure Source Quality

We identified five qualities that a top rated source of evidence-based medical resource should include. Our 5 point source quality rubric relied on these qualities.

1. Regular (more than once a year) updating
2. Clear sourcing
3. Strong medical authority
4. Specific medical vocabulary written at a clinical level for specificity and clarity
5. Synthesization

Full discussion on source quality rubric here.

Results

Analysis of pre-test and post-test test results yielded a statistically significant (.05) improvement in students’ selection of source quality and a small improvement in accuracy. As illustrated in figure above on the right, the source quality posttest median was very close to the pre-test 75%, indicating a significant increase in source quality selection.

Discoveries

Discovery #1 – Discovery Tool
Answering clinical questions is a limitation of our discovery tool. We have made clinical discovery more prominent in our discovery system.

Discovery #2 – Students learned the importance of source quality
The analysis yielded a significant improvement in the selection of source quality after our EBM instruction session. The median post-test was equivalent to the 75 percentile pre-test.

Discovery #3 – A Change in how we teach EBM
We postulate from student feedback that a prerecorded lecture with more practical hands-on practice should yield even better results.

This project is part of the program "Assessment in Action: Academic Libraries and Student Success" which is undertaken by the Association of College and Research Libraries (ACRL) in partnership with the Association for Institutional Research and the Association of Public and Land-grant Universities. The program, a cornerstone of ACRL’s Value of Academic Library Services initiative, is made possible by the Institute of Museum and Library Services.