Evidence-Based Practice for Medical Students in a Family Medicine Clerkship: Collaborative, Active Learning for Clinical Decision Skills

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This collaborative, patient-centered experience was designed to enhance the information literacy knowledge and skills of medical students for patient-centered, evidence-based decisions at the point of care. It includes formulating clinical questions using PICO, accessing the highest level of EBM information available in an effective manner, and evaluating the information in relation to a specific patient in an outpatient setting.

**Objectives**

- Students complete a pre-test prior to orientation in which they rate usefulness and familiarity with key EBM resources.
- At orientation, the clerkship directors provide the students with an overview of the evidence-based process and creating PICO questions.
- Immediately following instruction, librarians provide a 1.5 hour hands-on session covering evidence-based resources and search strategies for finding point-of-care EBM information using the following hierarchy:
  1. **University of Kentucky Medical Center Library**
  2. **PubMed**
  3. **Cochrane Database Systematic Reviews**
  4. **Cochrane Central Register of Controlled Trials**
  5. **Medline**
  6. **National Guideline Clearinghouse**
  7. **University of Kentucky Family Medicine Clerkship Intranet"**

**Methods**

All third-year medical students participate in this small-group collaborative, patient-centered learning experience during the required Family Medicine clerkship.

Students complete a pre-test prior to orientation in which they rate usefulness and familiarity with key EBM resources.

Students complete a post-test and evaluations.

**Sample student worksheet:**

**Results**

Between August 2012 and February 2013, 60 students completed the course. Below is the rubric librarians use for evaluating their portion of the assignment and the breakdown of the students’ cumulative ratings by the librarians.

**EVM Student Feedback**

<table>
<thead>
<tr>
<th>Category Question</th>
<th>1=Strongly Disagree</th>
<th>2 = Disagree</th>
<th>3=Neutral</th>
<th>4=Agree</th>
<th>5=Strongly Agree</th>
<th>n=62</th>
<th>Mean</th>
<th>St Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>I understand the concept of evidence-based medicine.</td>
<td>4.7</td>
<td>4.0</td>
<td>5.0</td>
<td>0.5</td>
<td>0.3</td>
<td>62</td>
<td>4.91</td>
<td>0.66</td>
</tr>
<tr>
<td>I feel comfortable using EBM principles in day-to-day patient care responsibilities.</td>
<td>4.5</td>
<td>3.0</td>
<td>5.0</td>
<td>0.4</td>
<td>0.3</td>
<td>62</td>
<td>4.57</td>
<td>0.71</td>
</tr>
<tr>
<td>I believe critical appraisal skills have a value to me as a third year student.</td>
<td>4.3</td>
<td>2.0</td>
<td>5.0</td>
<td>0.4</td>
<td>0.3</td>
<td>62</td>
<td>4.07</td>
<td>0.64</td>
</tr>
<tr>
<td>I am more likely to use the literature to support my clinical decision-making.</td>
<td>4.3</td>
<td>2.0</td>
<td>5.0</td>
<td>0.4</td>
<td>0.3</td>
<td>62</td>
<td>4.03</td>
<td>0.64</td>
</tr>
<tr>
<td>I am more likely to critically appraise the articles I read.</td>
<td>4.1</td>
<td>2.0</td>
<td>5.0</td>
<td>0.3</td>
<td>0.3</td>
<td>62</td>
<td>3.82</td>
<td>0.67</td>
</tr>
<tr>
<td>The Family Medicine Clerkship is an appropriate time to learn the concepts of evidence-based medicine.</td>
<td>3.8</td>
<td>1.0</td>
<td>5.0</td>
<td>1.2</td>
<td>0.3</td>
<td>62</td>
<td>2.89</td>
<td>1.24</td>
</tr>
<tr>
<td>I felt that my clinical understanding was enhanced through identification and appraisal of the literature.</td>
<td>3.8</td>
<td>1.0</td>
<td>5.0</td>
<td>1.2</td>
<td>0.3</td>
<td>62</td>
<td>2.33</td>
<td>1.18</td>
</tr>
<tr>
<td>My EBM search benefited patient care in some way.</td>
<td>3.5</td>
<td>1.0</td>
<td>5.0</td>
<td>1.0</td>
<td>0.3</td>
<td>62</td>
<td>2.84</td>
<td>1.14</td>
</tr>
</tbody>
</table>

**Sample of Student Comments**

I really enjoyed this experience and felt that it was a very low pressure way for students to learn the importance of finding evidence-based sources of information to improve patient care. Do more than one! We should be asking questions like this and seeking out answers every day.

I think this exercise is one that is well worth the time and effort. I now have a better understanding of the importance of finding evidence-based sources of information to improve patient care. The EBM experience was a fantastic opportunity to learn more about searching and analyzing the quality, validity, and relevance of resources available to healthcare professionals.

Providing a patient-centered learning experience with collaboration between clinical faculty and medical librarians has been successful in improving third-year medical students’ knowledge and skills in medical information literacy for clinical decision-making.

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**Conclusion**

EVIDENCE-BASED PRACTICE FOR MEDICAL STUDENTS IN A FAMILY MEDICINE CLERKSHIP: COLLABORATIVE, ACTIVE LEARNING FOR CLINICAL DECISION SKILLS

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