Sources of knowledge in clinical practice and knowledge of evidence based medicine in post graduate medical students and faculty members

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Obstacles to Evidence Based Medicine in Developing Countries

• Information is disorganized, not searchable and not valid?
Obstacles to Evidence Based Medicine in Developing Countries

• Clinicians are trained in traditional models of medical education.

Holy Text books
Obstacles to Evidence Based Medicine in Developing Countries

• The **personal experience** is the most important source for decision makings.
Obstacles to Evidence Based Medicine in Developing Countries

• Experts and Pharmaceutical industries resist against any changes

Conflict of interest
The purpose of present study

• To determine the most important knowledge sources that can influence clinical practice.

• To describe the attitude, knowledge and behaviors of postgraduate medical students and faculty members relative to the use of evidence in practice.
The purpose of present study

Quantifying Barriers
Methods
Study population:

- Faculty members, fellows and residents of a large teaching tertiary care hospital
Data collection

- Anonymous self administered questionnaires
- A part of a Need assessment survey
Variables

• Demographic measures

• Graduation year for faculty members
Variables (Cont’d…)

- The percentage of their practice that is based on the best current evidence
- (visual analogue scale method)
Variables (Cont’d…)

• The importance of different resources in their daily clinical practice
• (visual analogue scale method)
The knowledge resources in daily clinical practice

- Personal experience
- Text books
- Searching and appraising articles
- English language articles
- Local (Farsi) articles
- Drug catalogues
- Rounds and Journal clubs
- Asking colleagues
- Clinical practice guidelines
Their understanding of some common terms from evidence based medicine:

• Relative Risk
• Clinical Practice Guideline
• Metaanalysis
• Number Needed to Treat
• Publication Bias
• Confidence Interval
• Confounding factor
• Allocation Concealment
• Embase database
Rating

• Understanding its meaning doesn’t change my daily decisions

• I don’t understand its meaning, but I’d like to know

• I understand its meaning to some extent

• I completely understand its meaning and use it in my daily practice
Results
Responders

• A total of **250** of **320** recruited hospital staff returned the questionnaires (78%)

• 48 faculty members
  Mean years after graduation ± SD: 7.7 ± 5.1

• 35 fellows

• 167 residents
Non-responders

- 36 refused to participate
- 34 were not accessible during the study period
The percentage of practice based on the best evidence
The importance of different resources in daily clinical practice- Faculty members
The importance of different resources in daily clinical practice - Fellows
The importance of different resources in daily clinical practice - Residents
Percentage who completely understand the meanings and use them in daily practice

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<tr>
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<th>Relative Risk</th>
<th>Confidence Interval</th>
<th>Confounding factor</th>
<th>Number needed to treat</th>
<th>Meta-analysis</th>
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<tbody>
<tr>
<td>Faculty members</td>
<td>39.6%</td>
<td>22.9%</td>
<td>20.8%</td>
<td>29.2%</td>
<td>33.3%</td>
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<tr>
<td>Fellows</td>
<td>45.7%</td>
<td>20%</td>
<td>25.7%</td>
<td>17.1%</td>
<td>25.7%</td>
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<tr>
<td>Residents</td>
<td>33.5%</td>
<td>15.6%</td>
<td>14.4%</td>
<td>7.2%</td>
<td>13.8%</td>
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<tr>
<td>Faculty members</td>
<td>19.1%</td>
<td>37%</td>
<td>42.2%</td>
<td>41.3%</td>
<td>39.1%</td>
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<tr>
<td>Fellows</td>
<td>11.8%</td>
<td>41.2%</td>
<td>50%</td>
<td>61.8%</td>
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<tr>
<td>Residents</td>
<td>15.9%</td>
<td>36.8%</td>
<td>54.9%</td>
<td>62.7%</td>
<td>44.6%</td>
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p<0.03
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<tr>
<td>Completely</td>
<td>5.8±4.2</td>
<td>5.5±4.7</td>
<td>4.6±4.7</td>
<td>7.4±5.3</td>
<td>5.8±4.3</td>
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<td>understand</td>
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<tr>
<td>Others</td>
<td>9±5.4</td>
<td>8.7±5.2</td>
<td>8.9±4.9</td>
<td>7.9±5.2</td>
<td>8.6±5.4</td>
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Years after graduation of faculty members (Mean ± SD)
Discussion
Main findings-Knowledge sources

- Faculty members are more evidence based than Residents and Fellows
- Residents use more traditional sources for decision making
- Local journal articles are the least important sources of knowledge
Main findings - Self-reported Knowledge

- Only a small minority of Residents use the EBM terms in their daily practice
- And more than half of them don’t know the meaning of Confounding factor or Number Needed to Treat (NNT)
- In faculty members knowledge of EBM terms is inversely correlated with the years after graduation
Traditional Curricula

- The pathophysiological reasoning
- Personal observation
- Intuition
- Traditional Text books
Western Bias

• Tendency to western medical information

• Local research is more likely to be directly applicable to the population involved
Next generation of Physicians?

• Future physicians are capable of finding, evaluating, and applying new information as it becomes available.

We need a Reform in Medical Education in Developing countries.
More introductory courses

- Information technology (the ABC of internet and informatics)
- ABC of research methodology
- ABC of statistics
- Evidence based Journal clubs and Rounds
- Role models on EBM adoption
Study limitations

• Self rated knowledge and attitude – Not real practice
• Young population of faculty members (selection bias)
• No data on subspecialties
Thank You!

Any Question?