Sources of knowledge in clinical practice and knowledge of evidence based medicine

in post graduate medical students and faculty members

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Introduction

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

Variables (Cont'd…)

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

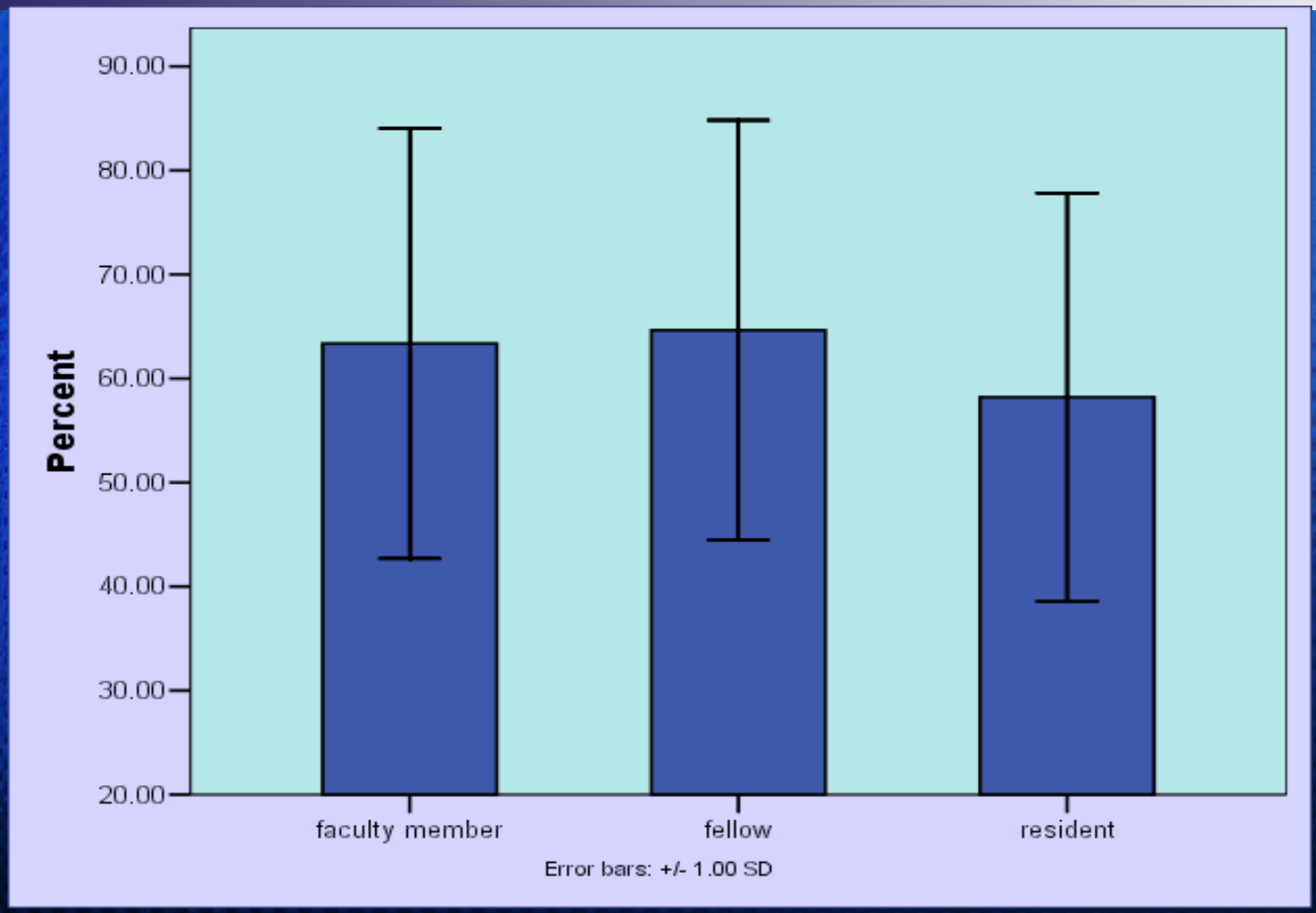
  Mean years after graduation ± SD: 7.7 ± 5.1

- 35 fellows
- 167 residents

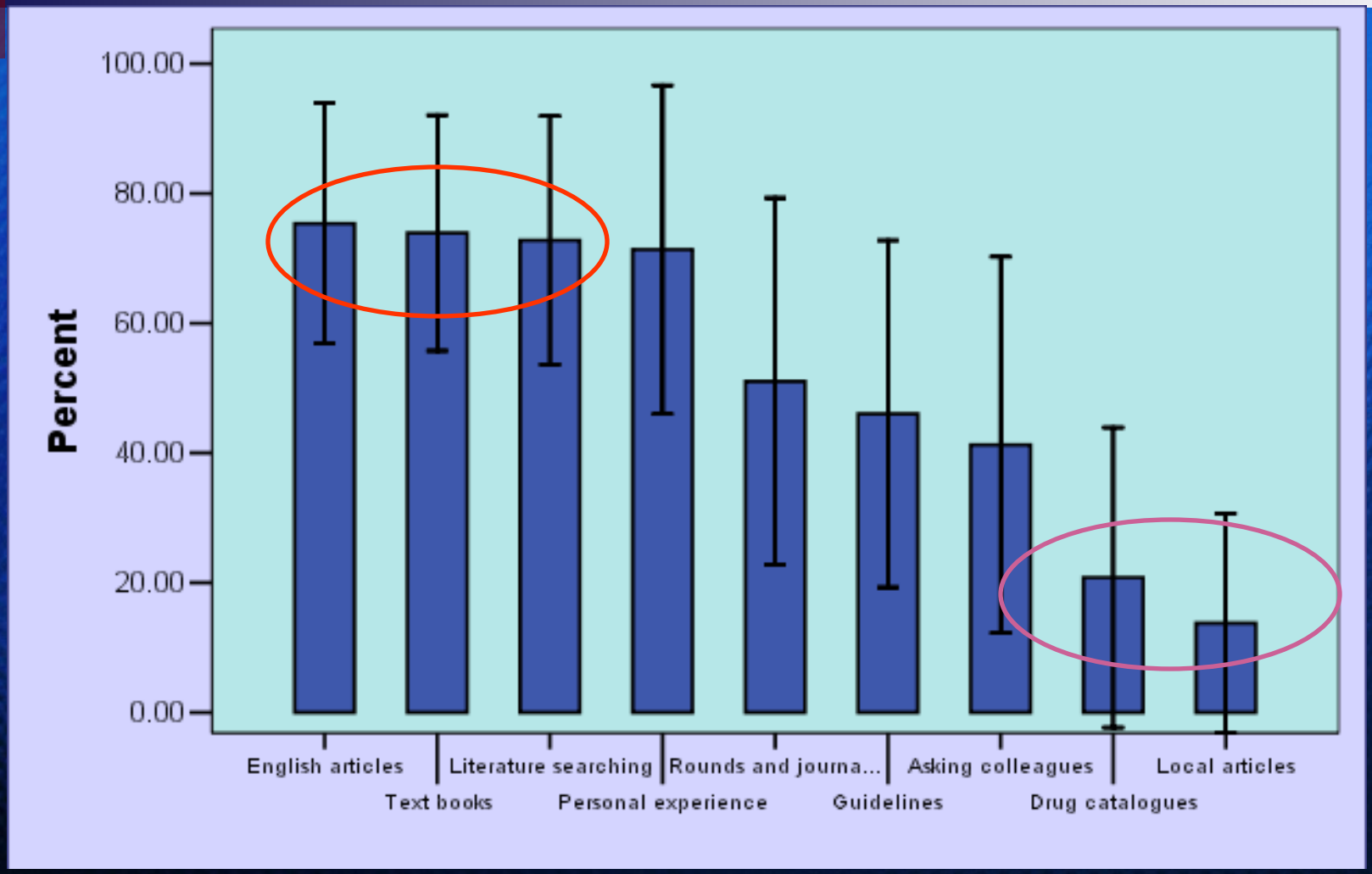
Non-responders

- 36 refused to participate
- 34 were not accessible during the study period

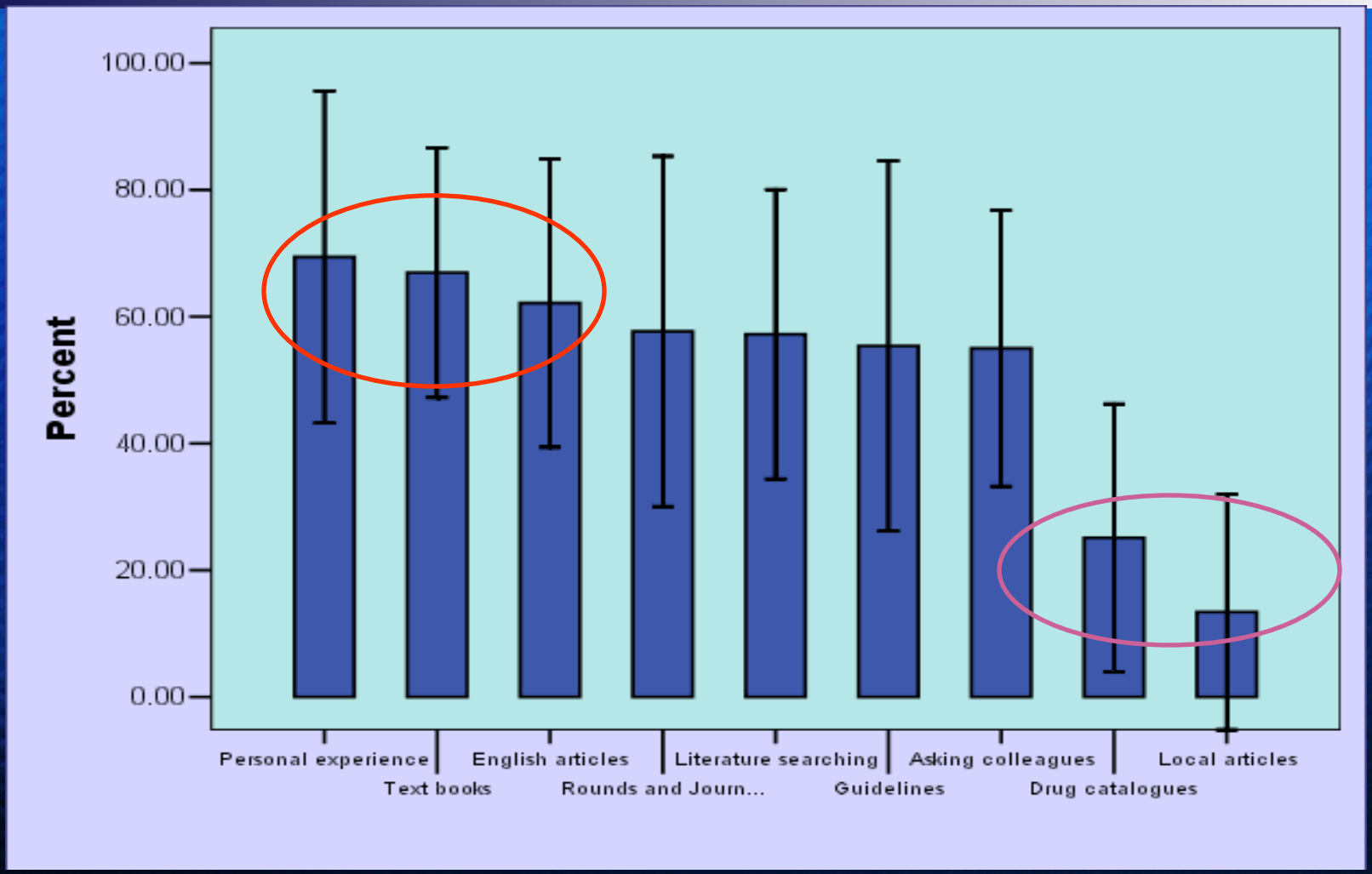
The percentage of practice based on the best evidence



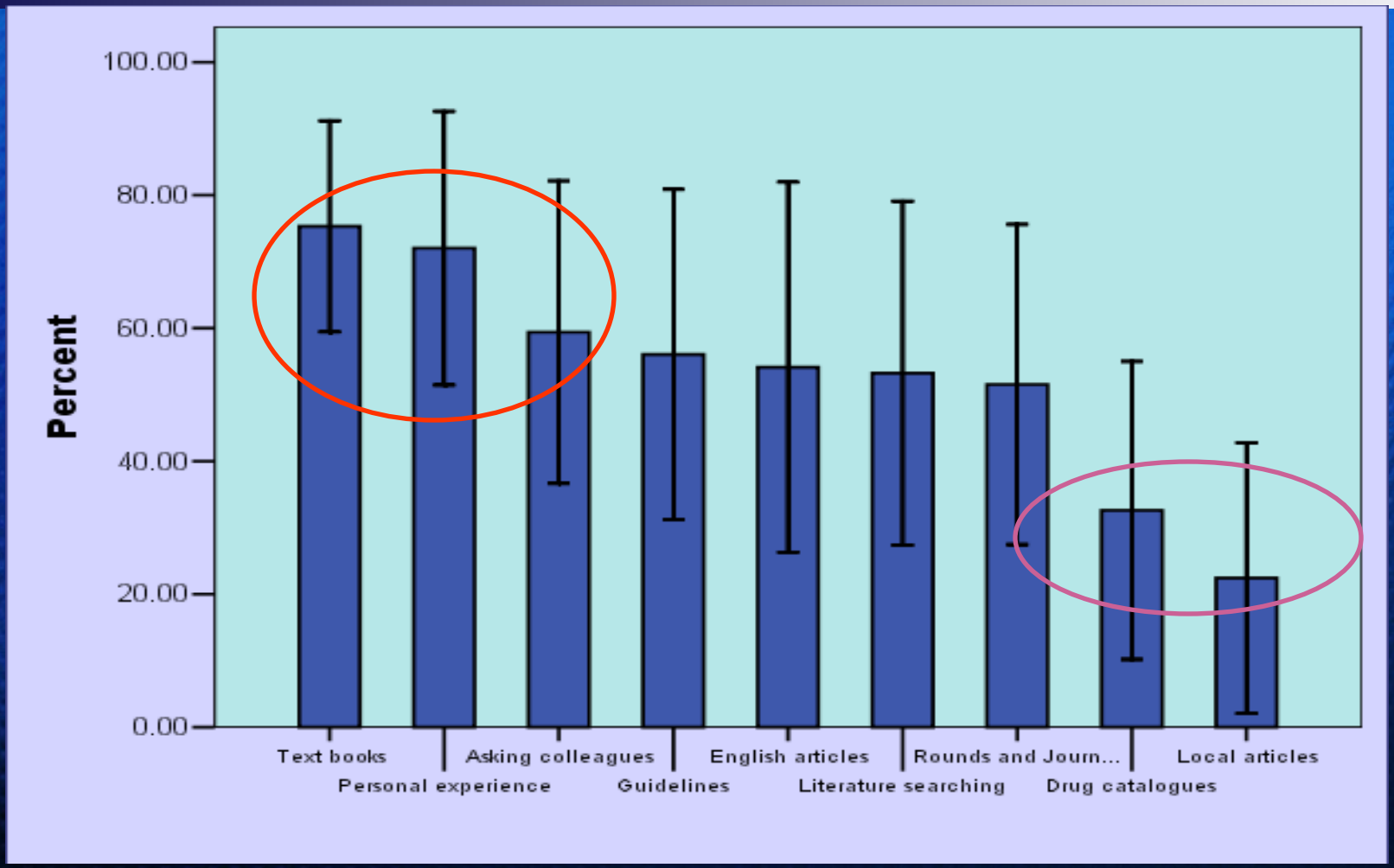
The importance of different resources in daily clinical practice- **Faculty members**



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

	Relative Risk	Confidence Interval	Confounding factor	Number needed to treat	Meta-analysis
Faculty members	39.6%	22.9%	20.8%	29.2%	33.3%
Fellows	45.7%	20%	25.7%	17.1%	25.7%
Residents	33.5%	15.6%	14.4%	7.2%	13.8%
				p<0.0001	P=0.006

Percentage who don't understand the meanings

	Relative Risk	Confidence Interval	Confounding factor	Number needed to treat	Meta-analysis
Faculty members	19.1%	37%	42.2%	41.3%	39.1%
Fellows	11.8%	41.2%	50%	61.8%	24.2%
Residents	15.9%	36.8%	54.9%	62.7%	44.6%

$p<0.03$

Years after graduation of faculty members (Mean ± SD)

	Relative Risk	Confidence Interval	Confounding factor	Number needed to treat	Meta-analysis
Completely understand	5.8±4.2	5.5±4.7	4.6±4.7	7.4±5.3	5.8±4.3
Others	9±5.4	8.7±5.2	8.9±4.9	7.9±5.2	8.6±5.4

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?