

بہ نام خدای کہ در این مردہ  
سنگی است



# Best Evidence in Medical Education

مریم کرباسی مطلق

متخصص آموزش پزشکی، مرکز مطالعات و توسعه آموزش دانشگاه علوم پزشکی تهران

# Overview

- **Scenario – why we need to know medical education?**
- **Terminology**
- **Main Source of generating question**
- **Level of evidence**
- **Evidence in Medical Education**
- **Similarity and distinguish between EBM and BEME**
- **Where to Look for the Evidence**
- **Designing research question and doing search**
- **Appraise: Valid Evidence in Medical education**

# Scenario

- **Why we need evidence in Medical Education?**

...در طی ترم جاری در تدریس به دانشجویان دوره پزشکی عمومی، متوجه می‌شوید دانشجویان مشارکت فعال در بحث‌های درسی ندارند و دانشجویانی هم که در بحث شرکت می‌کنند، یا با پاسخ‌های نامربوط باعث اتلاف وقت کلاس می‌شوند و نظم کلاس را به هم می‌ریزند و یا از سوی همکلاسی‌ها مورد واکنش قرار می‌گیرند. با مراجعه به حوزه دانشجویی، مورد غیرطبیعی (مشکلات روحی و انضباطی) خاصی به شما گزارش نمی‌شود. شما با خود فکر می‌کنید که شاید راهکارهایی وجود داشته باشد که بتوان دانشجویان را به مشارکت فعال در کلاس تشویق نمود و یا بتوان با تغییر شیوه تدریس این مشکل را حل کرد.

- **How many of you teach/train at the undergraduate or postgraduate levels?**
- **Please send no. 1 in chat box**

- **How many of you read a medical education journal?**
- **Please send no. 1 in chat box**

**Name two!**

# Evidence-based Education?

- زمانی که بحث در خصوص موضوعات آموزشی است رفتار آموزشی پژوهشگران بالینی و پایه (اساتید) که معتقد به استفاده از شواهد در زمینه‌های تخصصی خود هستند به نظر تغیر می‌کند.
- ناگهان بررسی نقادانه و مطالعات علمی جای خود را به تجارب و عقاید فردی و برخی اوقات به ارزش‌های سنتی می‌دهد.

- **Advances in Physiology Education, 14, 1, p S3**

# **Main Source of Generating Questions Research Idea**

- **Everyday life**
- **Practical issues**
- **Past research (RTL)**
- **Theory**



# Evidence in Medical Education

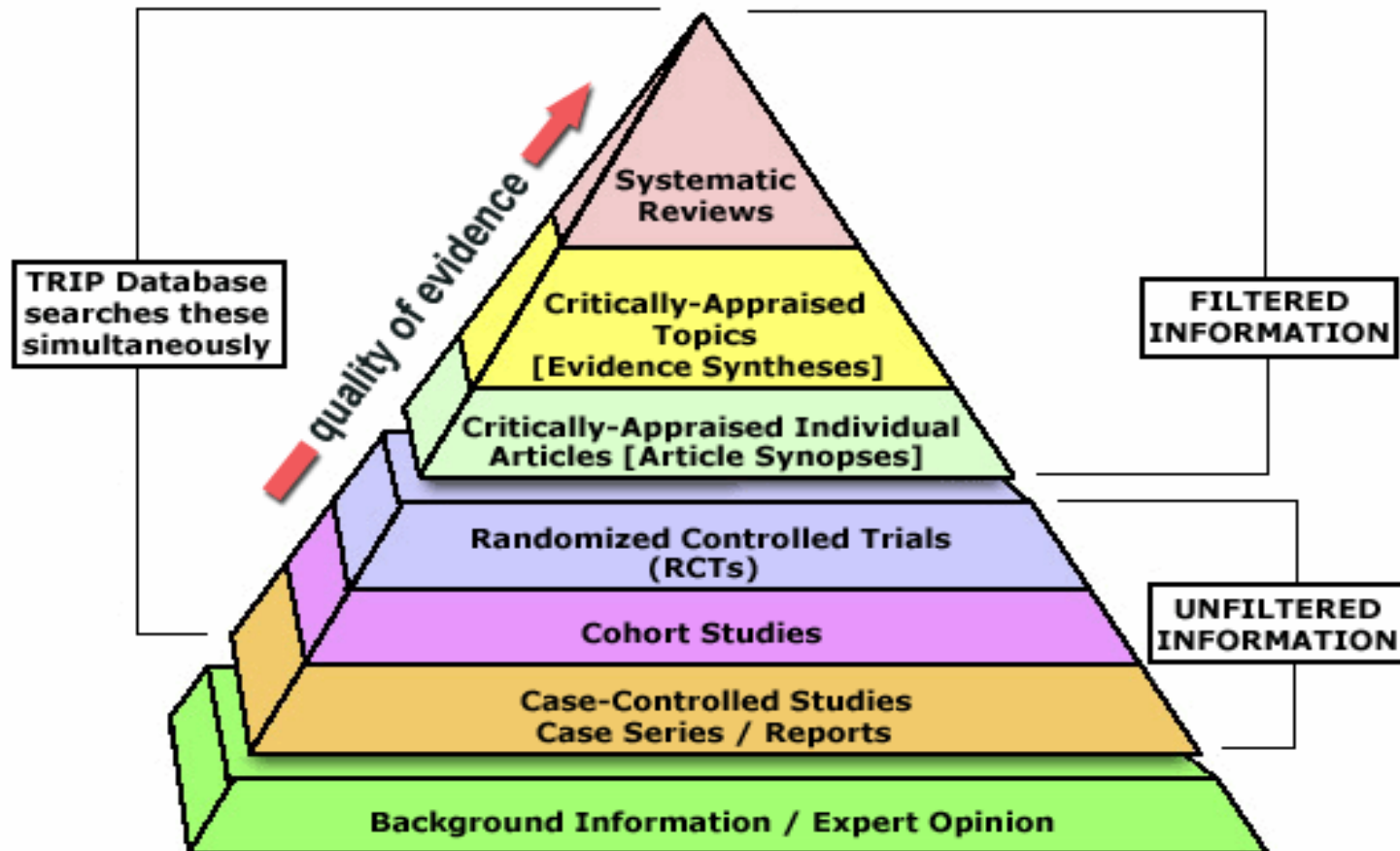
## Generating New Evidence

- Conduct Primary Research
- Conduct Systematic Reviews

## Finding Available Evidence

- From Primary Sources  
(Appraise)
- From Secondary Sources

# Evidence-based Hierarchy



# Similarity EBM and BEME

## **BEME**

- Looking for Evidence
- Level of Evidence
- Retrieval system

## **EBM**

- Looking for Evidence
- Level of Evidence
- Retrieval system

# Difference between BEME and EBM

## BEME

- History of BEME
- Types of Evidence
- QUAL + QUAN
- Retrieval system
- BEME REVIEW
- Campbell

## EBM

- History of EBM
- Types of Evidence
- QUAN
- Retrieval system
- EBM Review
- Cochrane

# Why We Should Use BEME?

**BEME encourage teacher to:**

- **Comprehensively and critically appraise medical literature in education**
- **Categorize the power of that evidence**
- Identify the gaps and flaws in existing literature
- Suggest appropriately planned study to optimize the evidence



*BEME aims to "...assist education practitioners to become increasingly skilled at using evidence to optimise student learning, shape their teaching, and in designing curricula and education policies..."*

# Problems/challenges for BEME

## Medical Education Culture

- Faculty ignorance of educational principles
- Faculty attitude
  - “education is not a science”
  - what is wrong with what we’re doing now
  - accepting the evidence

# https://www.bemecollaboration.org/

The screenshot shows the homepage of the Best Evidence Medical and Health Professional Education (BEME) Collaboration website. The browser address bar displays "bemecollaboration.org". The website header features the BEME logo, the text "Best Evidence Medical and Health Professional Education", and social media icons for Facebook, Twitter, Instagram, LinkedIn, and YouTube. A navigation menu includes links for Home, News, About BEME, BEME Reviews, Publications, Events, Resources, and Contact. The main content area is divided into three sections: "The BEME Collaboration" with a globe and network graphic, "Published Reviews" with a document icon, "Preparing a BEME Review" with a pencil icon, and "News" with a newspaper icon. A "BEME 2020/2021 Award" banner is visible at the bottom right.

**beme**  
Medical and Health Professional Education

Best Evidence Medical and Health Professional Education

Check our social media platforms for regular updates

Home News > About BEME > BEME Reviews > Publications > Events > Resources Contact

## The BEME Collaboration

The Best Evidence Medical Education (BEME) Collaboration (Harden et al., 1999) is an international group of individuals, universities and professional organisations committed to the development of evidence informed education in the medical and health professions [read more](#)

### Published Reviews

**BEME** reviews are highest-standard, peer-reviewed reports of evidence available relating to medical and health professions

### Preparing a BEME Review

Reviews are currently in progress covering a range of important topics in medical and health professions

### News

**BEME 2020/2021 Award**

# Twelve tips to promote excellence in medical teaching

1: Outcome-based education

**2: *Implement best evidence medical education (BEME)***

**3: *Journal clubs and review of existing literature***

4: Faculty development

5: Evaluation of teaching

6: Evaluate impact of teaching

7: Mentoring

**8: *Institutional funding for educational research and development***

9: Promote an institutional culture that values teaching highly

10: Rewarding excellence in teaching

11: Recognize scholarship in teaching including best evidence medical education

**12: *Participate in the BEME collaboration***



# Where to Look for the Evidence

- Databases
- Journals: medical education, general medical, specialist medical, education (136 identified so far by BEME)
  - Hand searching
  - Abstracts or full-text?
  - Non-English language?
- Books
- ‘Grey’ literature
  - Hand searching
  - Databases

# Where to Look for the Evidence

- Journals: Medical Education – Medical Teacher – Advance in Medical Education- Academic Psychiatry....
- Books:
  - ✓ Medical Education: Theory and Practice, 1st Edition, Tim Dornan, Karen Mann, ...
  - ✓ Dent, John, and Ronald M. Harden. A practical guide for medical teachers. Elsevier Health Sciences, 2013
  - ✓ M. Harden, PM Lilley, R. "Best evidence medical education: the simple truth." Medical Teacher 22, no. 2 (2000): 117-119.

# Major Databases Relevant to Medical Education

- **ERIC,**
- **PUBMED**
- **Web of Science**
- **CINAHL**
- **EMBASE**

# a Good Search ....

- ✓ Clear research question
- ✓ Comprehensive search
  - All domains, no language restriction, unpublished and published literature, up-to-date
- ✓ Document the search (replicability)

# Finding Available Evidence

From Primary Sources (appraise)

- **Are the results valid?**
- **Are the results important?**
  - **statistical significance vs educational significance**
  - **generalization**
- **Problems of measurement and causation - reproducibility and validity**

# Critical Appraisal Tools & Networks & Guidelines





Enhancing the **QUALITY** and **Transparency Of health Research**



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### Your one-stop-shop for writing and publishing high-impact health research

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#### Library for health research reporting

The Library contains a comprehensive searchable database of reporting guidelines and also links to other resources relevant to research reporting.



Search for reporting guidelines



Not sure which reporting guideline to use?



Reporting guidelines under development



Visit the library for



#### Reporting guidelines for main study types

[Randomised trials](#)

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## Translations of reporting guidelines

Some key reporting guidelines have been translated into a number of different languages. Please see the list below to access reporting guidelines in your language.

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## Reporting guidelines for main study types

<a href="#">Randomised trials</a>	<a href="#">CONSORT</a>	<a href="#">Extensions</a>
<a href="#">Observational studies</a>	<a href="#">STROBE</a>	<a href="#">Extensions</a>
<a href="#">Systematic reviews</a>	<a href="#">PRISMA</a>	<a href="#">Extensions</a>
<a href="#">Study protocols</a>	<a href="#">SPIRIT</a>	<a href="#">PRISMA-P</a>
<a href="#">Diagnostic/prognostic studies</a>	<a href="#">STARD</a>	<a href="#">TRIPOD</a>
<a href="#">Case reports</a>	<a href="#">CARE</a>	<a href="#">Extensions</a>
<a href="#">Clinical practice guidelines</a>	<a href="#">AGREE</a>	<a href="#">RIGHT</a>
<a href="#">Qualitative research</a>	<a href="#">SRQR</a>	<a href="#">COREQ</a>
<a href="#">Animal pre-clinical studies</a>	<a href="#">ARRIVE</a>	
<a href="#">Quality improvement studies</a>	<a href="#">SQUIRE</a>	<a href="#">Extensions</a>
<a href="#">Economic evaluations</a>	<a href="#">CHEERS</a>	

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<https://www.cebm.ox.ac.uk>



# Critical Appraisal tools

Critical appraisal worksheets to help you appraise the reliability, importance and applicability of clinical evidence.

Critical appraisal is the systematic evaluation of clinical research papers in order to establish:

1. Does this study address a **clearly focused question**?
2. Did the study use valid methods to address this question?
3. Are the valid results of this study important?
4. Are these valid, important results applicable to my patient or population?

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<https://www.cebm.ox.ac.uk>

# COVID-19 Special Collection

Free access evidence-based resources for health professionals











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- CRITICAL APPRAISAL TOOLS
- JBI MANUAL FOR EVIDENCE SYNTHESIS
- JBI MANUAL FOR EVIDENCE IMPLEMENTATION
- JBI SUMARI KNOWLEDGE BASE
- JBI LIVE WEBINARS
- SCOPING REVIEW NETWORK
- ASK JBI

JBI is an international research organisation based in the Faculty of Health and Medical Sciences at the University of Adelaide

# <https://jbi.global/>



<b>Checklist for Qualitative Research</b>	 
<b>Checklist for Quasi-Experimental Studies</b>	 
<b>Checklist for Randomized Controlled Trials</b>	 
<b>Checklist for Systematic Reviews</b>	 
<b>Checklist for Text and Opinion</b>	 

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[AGREE](#)

[CHAMP](#)

[Consort](#)

[Coreq](#)

[prisima](#)

[Remark](#)

[rev help](#)

[Stard](#)

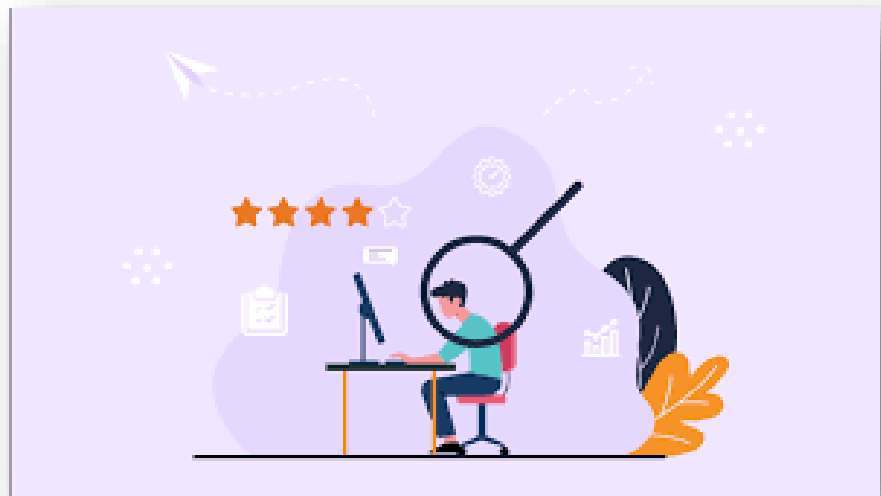
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[trend1](#)



# Title

*Experiential learning – a systematic review and  
revision of Kolb's model*

# References:

- M. Harden, Janet Grant, Graham Buckley, IR Hart R. BEME Guide No. 1: Best evidence medical education. *Medical teacher*. 1999 Jan 1;21(6):553-62.
- Haig A, Dozier M. BEME Guide No 3: Systematic searching for evidence in medical education--Part 1: Sources of information. *Medical teacher*. 2003 Jan 1;25(4):352-63.
- Hammick M, Dornan T, Steinert Y. Conducting a best evidence systematic review. Part 1: From idea to data coding. BEME Guide No. 13. *Medical teacher*. 2010 Jan 1;32(1):3-15.
- Harden RM, Grant J, Buckley G, Hart IR. Best evidence medical education. *Advances in Health Sciences Education*. 2000 Mar;5(1):71-90.

