

Lay of the land of health professions education systematic reviews: scope and methodological quality of BEME systematic reviews

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Introduction



- Cochrane Collaboration
 - Mainly clinical and public health interventions
- Campbell Collaboration
 - Includes educational interventions as a field but few existing reviews about healthcare education
- Best Evidence Medical Education (BEME) Collaboration
 - To enhance evidence-informed healthcare education for best teaching and learning practices

Introduction



- Different **types of questions** get answered by systematic reviews of different **study designs**, e.g.
 - What are the **effects** of one teaching strategy compared to another?
 - **Why** one teaching strategy works in one setting and not in another setting?
 - What inherent student characteristics are **best predictors** of student success?

Rationale



- BEME International Collaborating Centre (BICC)
 - To support BEME's progress and planning
 - About 22 globally
 - Stellenbosch University became a BICC in 2014
 - Only BICC in Africa
 - As part of our BICC activities, we wanted to do a situation analysis



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Aims

- To take stock of existing BEME systematic reviews, to
 - Create **awareness** and **promoting use** of BEME reviews to **improve** current educational practices
 - Identify **gaps** for **relevant**, new BEME reviews



Methods

- Developed **reference framework** to categorise the scope of existing BEME reviews
 - Screened tables of contents of relevant textbooks, conferences, websites
 - Short list refined amongst co-authors
 - Shared with two local higher education experts for input



Methods

- Downloaded all BEME reviews from website
- 1 researcher extracted all data with a pre-piloted data extraction form
- Data extracted: **last search date**, **PICOTS**, search strategy, risk of bias tool used, synthesis methods, number and locations of included studies, conflict of interest, funding sources, and **methodological quality** of the review



Methods

- Assessed methodological quality of BEME reviews with the **AMSTAR tool** (Shea et al 2007, 2009)
 - Validated, 11 criteria tool
 - To assess risk of bias of systematic reviews, across fields
- Research assistant **checked accuracy** of all extracted data by comparing the data against the published review articles
 - Resolved discrepancies
- **Mapped** results according to **reference framework**
- Narrative reporting of findings



Results

- All 29 published BEME reviews (as of 30 Sept 2015) included →
- Reference framework →
- Date of last search vs. publication date
 - 3 reviews not reported sufficient info
 - Other 26 reviews: average 26.5, median 24 and range 10 to 46 months →

BEME GUIDE

The effect of educational games on medical students' learning outcomes: A systematic review: BEME Guide No 14

ELIE A. AKL¹, RICHARD W. PRETORIUS¹, KAY SACKETT², W. SCOTT ERDLEY³, PARANTHAMAN S. BHOOPATHI⁴, ZIAD ALFARAH¹ & HOLGER J. SCHÜNEMANN⁵

BEME GUIDE

Effectiveness of teaching evidence-based medicine to undergraduate medical students: A BEME systematic review

A systematic review of faculty development initiatives designed to improve teaching effectiveness in medical education: BEME Guide No. 8

YVONNE STEINERT¹, KAREN MANN², ANGEL CENTENO³, DIANA DOLMANS⁴, JOHN SPENCER⁵, MARK GELULA⁶ & DAVID PRIDEAUX⁷



Reference Framework

Category	Description	No. of BEME reviews
A. Teaching strategies	Approaches to teaching	4
B. Teaching methods	The principle and method used for instruction	4
C. Teaching and learning environment & resources	Structural and material issues relating to teaching and learning	2
D. Assessment	Assessment for and of learning; determining the extent and nature of student learning	4
E. Curriculum	The framework within which teaching and learning occurs	2
F. Entry criteria	Criteria used to determine entry to medical school	0
G. Evaluation and feedback	Monitoring and evaluation of teaching practices and learning outcomes	1
H. Continued professional development	Learning events for professionals in practice	2
I. Clinical skills teaching and learning	Facilitation of learning in clinical contexts	5
J. Student support	Academic and psycho-social support for students	0
K. Graduate attributes	Desired outcomes of medical programmes that are not content specific	5

Scope

P

- 12 reviews pre-specified all clinical fields
- 16 reviews pre-specified the MBChB field only
- 1 review did not pre-specify the P

I & C

- All reviews at least mentioned the intervention, although too little information described in most reviews
- 22 reviews did not pre-specify a comparison group

Scope

O

- **Mostly** included Kirkpatrick levels for evaluating educational interventions, and
- Change in learners' knowledge, skills, attitudes or behaviour
- In **6** reviews no pertinent outcomes were pre-specified

T

- **25** reviews did not describe the minimum duration of the intervention
- Only **1** review referred in the Methods section to the timepoint of the outcome in relation to the intervention period

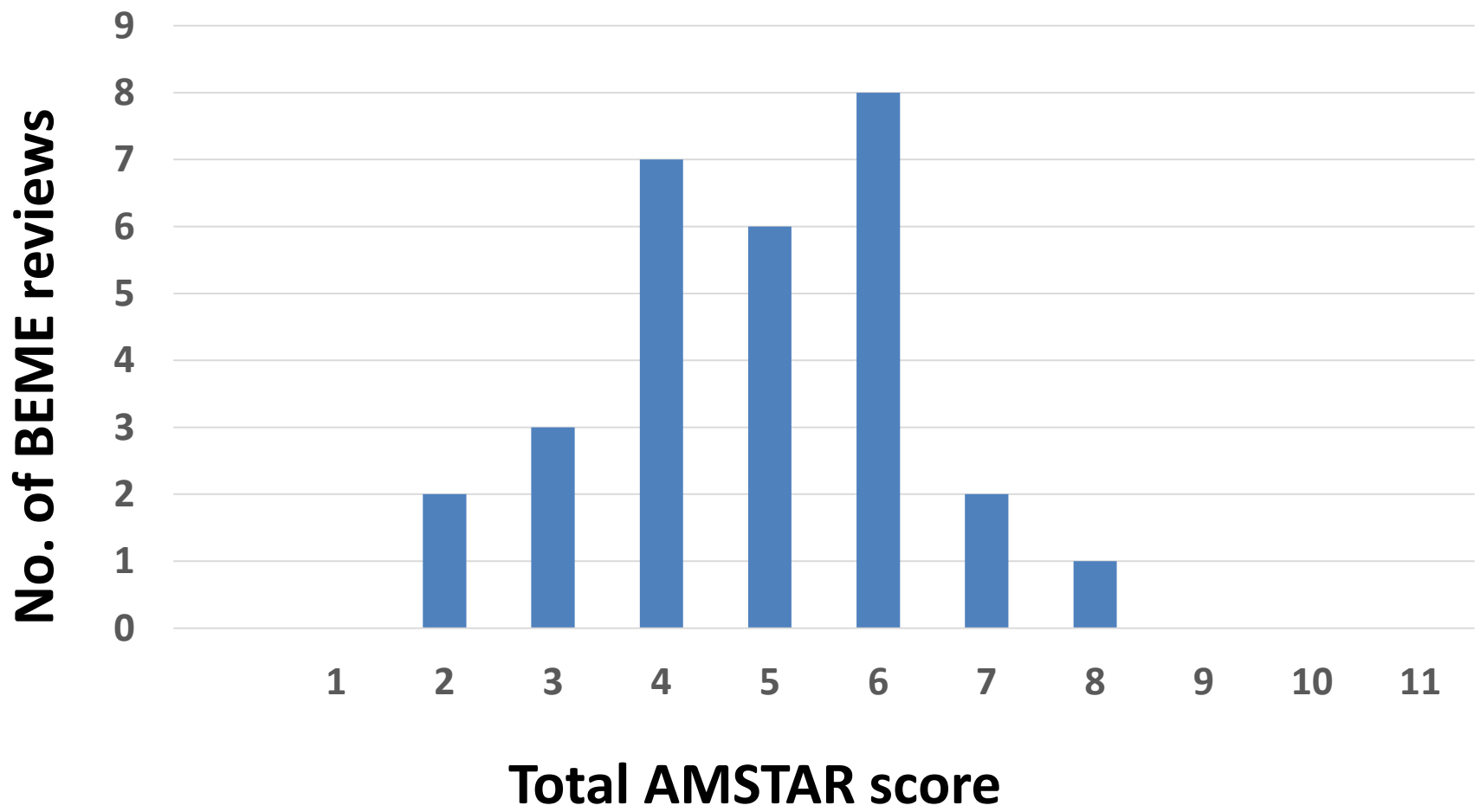
Scope

S

- 20 reviews pre-specified any study design (some limited to quantitative studies)
- 1 review did not pre-specify study design
- 1 review vague about the study designs
- 7 reviews listed specific study designs to be included

Median: 5
Range: 2 to 8

AMSTAR judgements



Strengths & Limitations

- Strengths



- Multi-disciplinary team

- Limitations



- Reference framework only reviewed by 2 local experts
- Data extraction not in duplicate and independently



Bottom line

- Need a process to identify priority questions for BEME reviews → answer important questions for stakeholders
- Explicit pre-specification of PICOTS needed → clear questions
- Date of last search is important for usability of the review
- Explicit, rigorous methods are important for conducting and reporting of reviews