Validation of the BEEM rater scale: An instrument to define the “best evidence for Emergency Medicine"

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BACKGROUND
- Emergency physicians are challenged trying to stay current with simultaneously clinically relevant and valid studies.
- The BEEM Rater scale (Table 1) is a highly reliable single-question instrument for emergency physicians to rate emergency medicine (EM) clinical relevance of publications.
- No gold standard for “clinical relevance” exists.

OBJECTIVE
- To identify a bibliometric-based construct of EM clinical relevance upon which to correlate and indirectly validate the BEEM Rater scale.

METHODS
- Title, conclusion, and PUBMED link for 605 studies relevant to EM and published between 2007 and 2012 were electronically distributed to a volunteer group of 200 practicing EM physicians around the world in samplings of 15-20 articles per month.
- Physician volunteers rated the articles using Best Evidence in Emergency Medicine Rater scale.
- Research staff independently abstracted bibliometric indices (Table 2) for each of the 605 studies and inter-rater agreement reported with correlation between BEEM rater scores and citation rate.

RESULTS
- Citation rate correlated positively with BEEM Rater score (0.144), but the BEEM Rater score had minimal correlation with the JCR impact factor score (0.053).
- BEEM Rater score predicted Web of Science citation rate with Odds Ratio 1.24 (95% CI 1.11-1.40, p<0.0001).

CONCLUSION
- The BEEM Rater score correlates with future citations.
- Future research should assess this instrument against alternative constructs of “best evidence.”

LIMITATIONS
- Imperfect gold standard (citation rate)
- Too simplistic
- Source of citation rate potentially inaccurate
- Publications too recent for citation indices
- English-language bias
- Potential selection bias in BEEM Raters or manuscripts