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Challenge of communicating uncertainty in systematic reviews when applying GRADE ratings

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One of the most widely used tools for assessing and communicating scientific uncertainty is Grading of Recommendations Assessment, Development, and Evaluation (GRADE), a system for rating the quality of evidence and grading strength of recommendations in healthcare. More than 100 organisations around the world—WHO included1— are using GRADE or have endorsed it.

In GRADE, a quantitative assessment of uncertainty is qualitatively communicated, so that a result obtained as a CI relative to a threshold is expressed as a finding in which assessors have low, moderate or high certainty, or certainty described with other such qualifiers. What these correspond to in quantitative terms, and how decision-makers interpret them, is our issue here. We confine our attention to GRADE’s decision rules for systematic reviews, and do not comment on the problem of multiple outcomes in guideline recommendations.

In a recent guideline article,2 GRADE introduced an idea that appears to undermine sound statistical reasoning in systematic reviews: the idea that a result that is statistically inconclusive, or certainty described with other such qualifiers. The null hypothesis concerns the threshold criterion… the imprecision-generated uncertainty will result in… moderate certainty that the [‘true’] effect is above the threshold [1.0].

In effect, GRADE is downplaying the importance of a prespecified threshold in a protocol by applying the idea that any null hypothesis (threshold) will be rejected to some degree, provided that the point estimate is close to the estimate of the effect, but there is a possibility that it is substantially different (p 404). However, in everyday language a common


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understanding of 'moderate' is 'within reasonable limits'. If the idea of converting statistically inconclusive results into 'moderate certainty' is understood as a principle, some systematic reviews using GRADE may unintentionally mislead, since it cannot be assumed that users will interpret 'moderate' in accordance with GRADE’s stipulation (Figure 1).

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