

EVALUATION OF STUDY QUALITY AND PUBLICATION BIAS IN SYSTEMATIC REVIEWS

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Introduction

Assessment of methodological quality of studies and evaluation of publication bias are important components of systematic reviews (SRs). However, empiric research has shown that not all SRs assess study quality, or attempt to detect publication bias. We surveyed SRs on HIV/AIDS topics, published during 2001, to evaluate how study quality and publication bias were evaluated.

Methods

We identified all SRs on HIV/AIDS published during 2001, and indexed in MEDLINE, using a validated search strategy developed to identify SRs. Among the 25 systematic reviews identified, 8 (32%) involved only observational studies, 5 (20%) involved only RCTs, 7 (28%) were cross-designs, 2 (8%) involved diagnostic tests, and 3 (12%) used individual patient data. One reviewer evaluated these articles and abstracted data onto a questionnaire.

Results

The publications covered a range of subspecialties. The table shows the data on quality assessment.

	Yes (%)	Partially (%)	No (%)	Can't tell (%)
Reported assessment of study quality (N=25)	7 (28)	7 (28)	11 (44)	
Approach used for quality assessment (N=14)				
Individual components of study validity	6 (43)			
Quality score or scale	1 (7)			
Both	2 (14)			
Other methods	5 (36)			
Quality assessment reproducible (N=14)	7 (50)		1 (7)	6 (43)
Quality assessment done blinded (N=14)				14 (100)
Studies excluded from analysis because of poor quality (N=14)	1 (7)		7 (50)	6 (43)
Assessed the impact of quality on the results? (Using methods like quality weighting, sensitivity or subgroup analysis) (N=14)	5 (36)	5 (36)		4 (28)

A vast majority of the reviews (88%) did not evaluate publication bias. Only 3 of 25 reviews (12%) evaluated publication bias. Of these, two computed the fail-safe N, and one review performed the Begg adjusted rank correlation test and the Egger regression asymmetry test.

Conclusions

Data from this small sample shows that quality assessment was not universally done. Reviews that assessed quality did not always evaluate its impact on study results. Quality assessment of RCTs was more common than assessment of non-randomized studies. Development of adequate quality assessment methods for non-randomized designs is an important area for methodological research. Despite publication bias being a major threat to validity in SRs, and the availability of detection methods, most reviews did not address it. Researchers should attempt to evaluate publication bias routinely in all systematic reviews.