

# The Nature of Quality Appraisal in Systematic Literature Reviews of Health State Utility Values (HSUVs): A Rapid Evidence Review

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## BACKGROUND

- Health state utility values (HSUVs) are essential input parameters to cost-utility analyses (CUAs).
- Systematic literature reviews (SLRs) provide summarised information for selecting utility values from an increasing number of primary studies eliciting HSUVs.
- Quality appraisal (QA) of such SLRs is an essential process towards the credibility of HSUV estimates; yet authors often overlook this crucial process.
- A scientifically developed and widely accepted QA tool for this purpose is lacking and warranted.

## OBJECTIVES

- To comprehensively review SLRs of studies eliciting HSUVs and describe the nature of the QA conducted.
- To generate a list of commonly used QA items in SLRs of HSUV elicitation studies.

## RESULTS

- 68 SLRs out of 1,997 hits were included, comprising 30 QA tools, checklists and GPRs, and 84 QA items (PRISMA flow diagram is available on request).

- Figure 1** shows the prevalence of QA and characteristics of the 68 SLRs included in the review.

- 38 out of the 68 SLRs appraised the quality of individual studies (prevalence = 56%).
- NICE and, or ISPOR guidelines accounted for 42% of the QA tools, checklists, and GPRs.

- 4 SLRs excluded studies for data synthesis based on QA; acceptance rates were 100% in two studies and 53% and 33% in the other two.

- On average, a SLR would have considered 55% of the total number of studies (ranging from 4 to 272 per SLR) eliciting HSUVs reviewed high quality had QA results been used to inform data synthesis (CAR).

- Figure 2** shows the frequency of use in A) 38 SLRs and in occurrence in B) 30 QA tools, checklists and GPR reviewed.

- The results suggest that QA items deemed higher in importance in QA tools, checklists and GPRs were not the ones most frequently appearing in SLRs.

## DISCUSSION & CONCLUSIONS

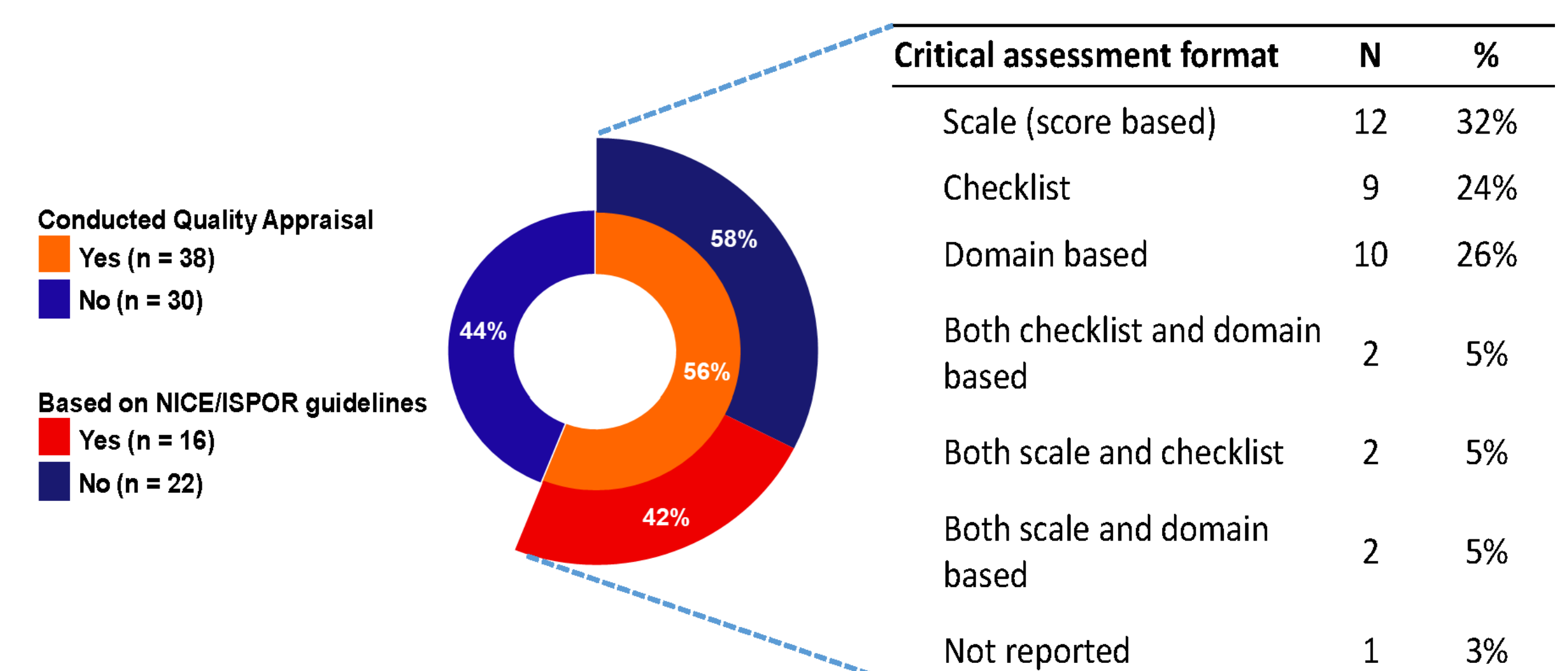
- The prevalence of QA in the SLRs of HSUVs appears low.
- The QA dimensions and items included in both SLRs and extracted QA tools, checklists and GPRs vary widely.
- These findings are mostly attributable to the current lack of a widely accepted QA tool for studies eliciting HSUVs.
- There is a strong need to systematically develop a QA tool specific to studies eliciting HSUVs and to promote its use in future studies.

## METHODS

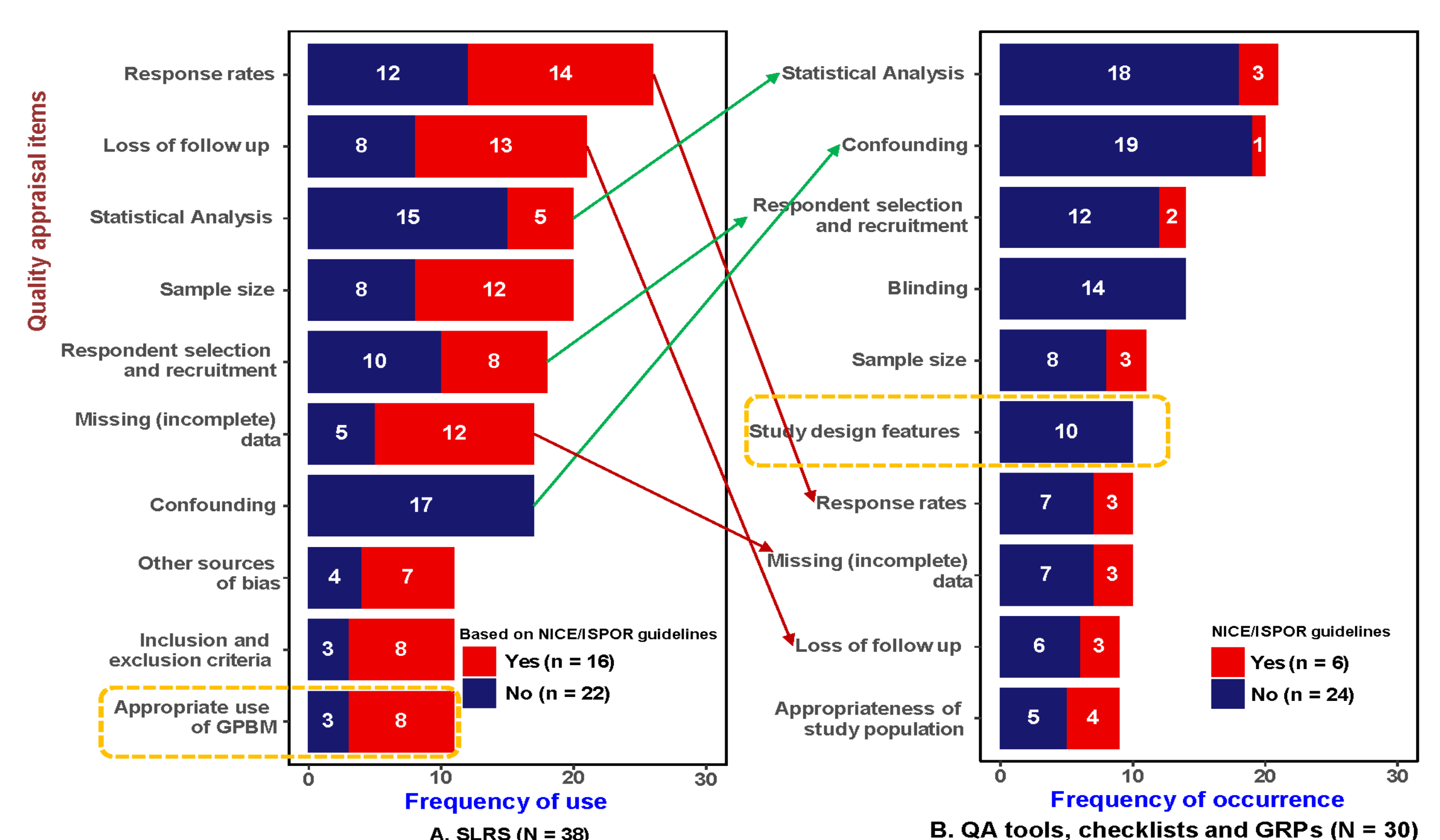
- A rapid review of studies eliciting HSUVs published in English from 01.01.2015 to 15.05.2021 was conducted in PubMed.
- Descriptive data were extracted, including QA items, type of QA used and methods of incorporating QA results into study findings.
- Counterfactual acceptance rates (CAR) were computed as follows:

$$CAR = \frac{\text{number of studies with quality score} \geq 60\% \text{ (or a high-quality rating in all domains)}}{\text{total number of eligible studies in a SLR}}$$

- A list of QA dimensions and items used was generated.
- Frequencies of use of QA items in SLRs were computed.
- In the second stage, all QA tools, checklists, and good practice recommendations (GPRs) used or cited in the SLRs were extracted.
- Descriptive data were extracted and analysed similarly to the SLRs, allowing comparative analyses between what was used by SLR authors and what is found in the QA tools, checklists, and good practice recommendations (GPRs).



**Figure 1:** Prevalence and characteristics of QA in the included SLRs



**Figure 2:** Ten most frequent items in A) SLRs and B) QA tools, checklists and GPRs

## KEY REFERENCES

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- Yepes-Nuñez J, Zhang Y, Xie F et al: Forty-two systematic reviews generated 23 items for assessing the risk of bias in values and preferences' studies. *J Clin Epidemiol.* 2017 May;85:21-31.