

# Patterns in Attribute Selection Reporting in Patient Preference Studies: A Systematic Review

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## Introduction

Discrete choice experiments (DCEs) are a popular quantitative method used to estimate the importance of any given attribute relative to the other included attributes.

There are a number of guidance documents on how to conduct or design a DCE and checklists to assess quality of a DCE.<sup>1-3</sup> More recently, a reporting checklist, The DIRECT Checklist was also published to standardise the reporting of a DCE study.<sup>4</sup>

However, there is currently wide variation in reporting of attribute selection and development in DCE publications. Existing checklists aimed at practitioners generally provide limited guidance on reporting of attribute selection and development, instead focusing on reporting the type of methods used.

Diverse reporting practices in attribute selection and development can make it difficult to assess the validity, risk of bias, comparability of the results across studies, and the transferability of preference data.

This review aimed to summarise the reporting patterns of the attribute selection and development process for DCE studies.

## Methods

A review of published DCE protocols and studies reporting attribute selection and development was conducted in Embase and Medline (Ovid) to examine the type of information reported and the extent to which the information provided would allow for an assessment of the validity of DCE design, and if desired, replication of the selection and development process by future researchers.

A search strategy consisting of terms relating to DCE (e.g. conjoint analysis, paired comparisons or choice experiment) and attribute selection and development (e.g., attribute\* adj3 select\* or attribute\* adj3 develop\*) in the the title or abstract was conducted in May 2024.

Searches were limited to peer-reviewed, full-text studies published in English. No limits to dates were applied.

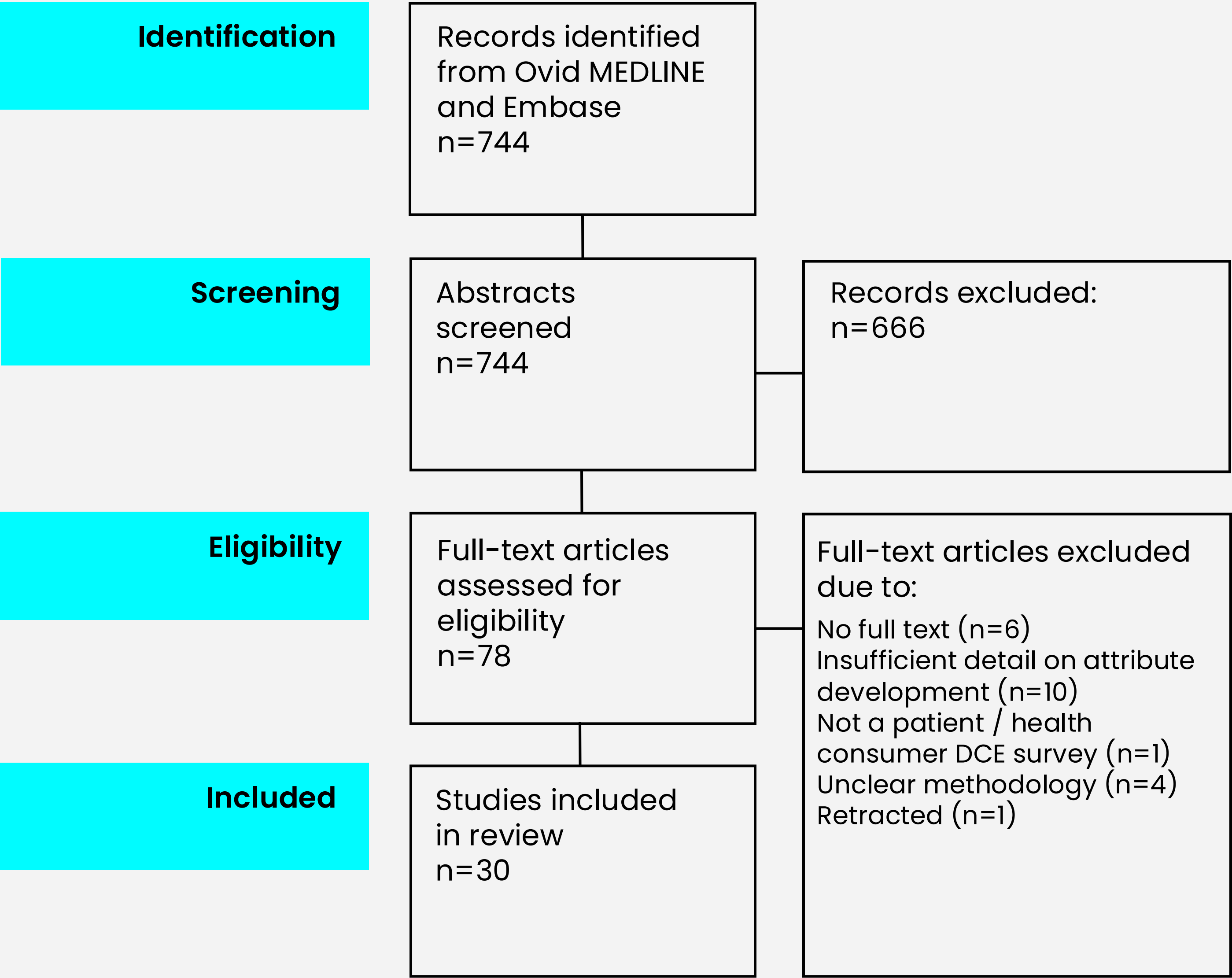
Studies were excluded if they were not a DCE study involving patients or healthcare consumers, or did not report attribute or DCE development.

Reporting of methods, decision making and outcomes relating to attribute selection and development was evaluated and narratively synthesised.

## Results

Thirty studies were included in the review; Figure 1 shows the PRISMA diagram of the study identification and screening process.

Figure 1. PRISMA diagram



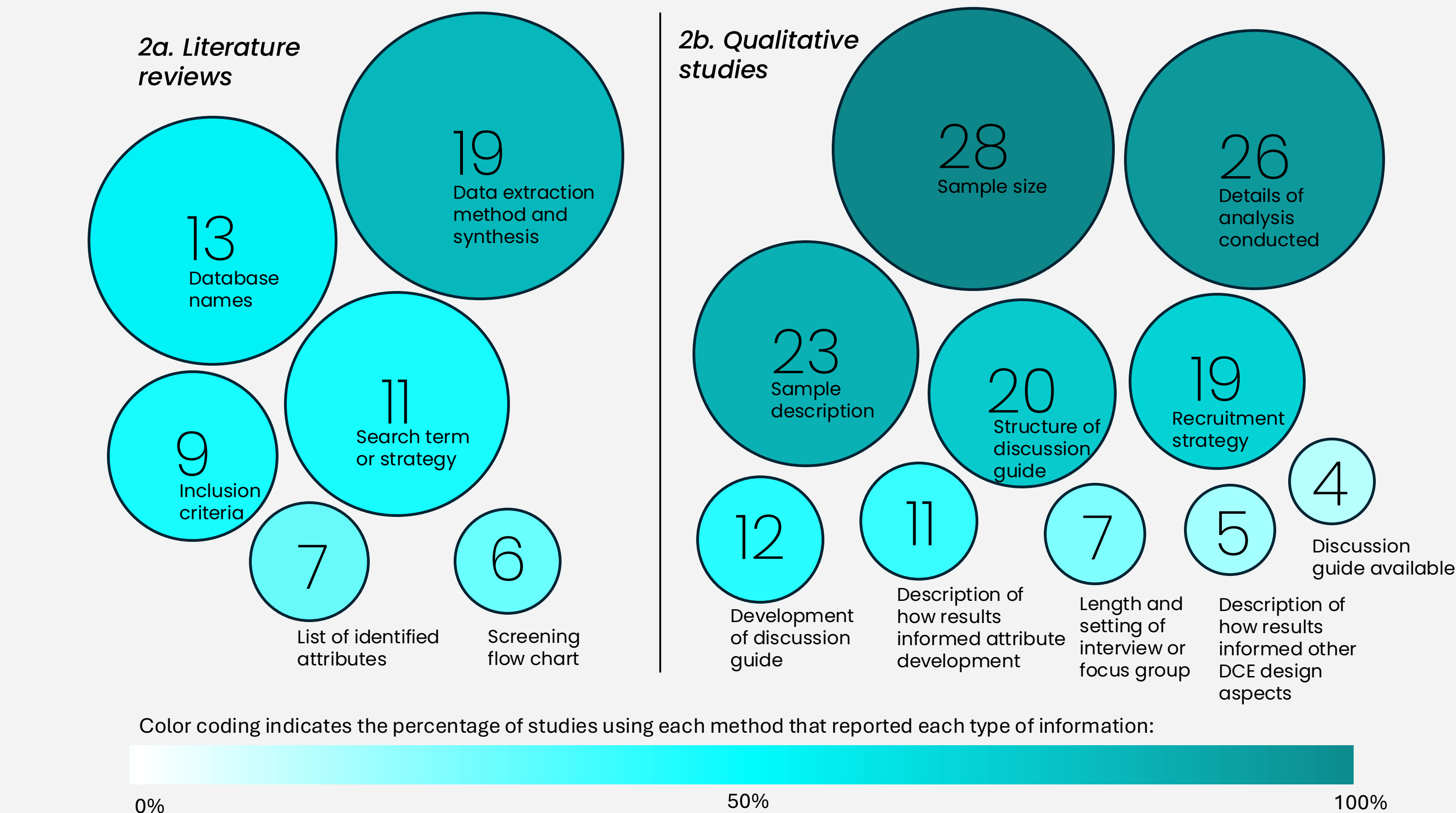
Attribute selection and development information reported in these studies was extracted and organised into three key areas of attribute selection and development strategies:

### 1. Attribute identification

Studies used a combination of methods to identify potential attributes. The most common methods were literature review (n=24), qualitative research such as interviews and focus groups (FG) with the target population (n=28) and expert consultation (n=22).

Figure 2 summarises the type of information reported for the key methods used to identify and/or select attributes.

Figure 2. Type of information reported for key methods for attribute identification



### 2. Attribute selection / prioritisation

Reporting on methods used to reduce long-listed attributes varied across studies.

Eighteen studies described using quantitative rating and ranking exercises during an interview or FG to select/prioritise attributes. In these studies, inclusion of attributes in the DCE were often selected based on a quantitative metric (e.g., top-ranked attributes, importance rating scores).

Only a minority of qualitative studies (n=11) included information on how participants' qualitative data from interviews or FG were used to inform the inclusion/exclusion of attributes.

### 3. Attribute refinement

Studies which conducted pilot testing of the DCE to check participants' understanding prior to valuation also reported changes to attributes resulting from the pilot testing (n=13); however, the level of detail on how pilot findings informed changes varied greatly across the small number of studies that reported pilot testing.

Beyond attribute identification and selection/prioritisation, only two studies reported information on how results from interviews or FGs were used to develop and refine attribute and level descriptions using layman language from participants.

### 4. Other

Five studies included information on how results from interviews or FGs were used to inform other DCE design elements such as choice context (e.g., scenarios under which decisions were made) and choice format (e.g., whether or not an opt-out alternative was included).

## Discussion and conclusion

There were widely varied practices in the reporting of attribute selection and development in the studies included in the review.

The level of detail on attribute selection and development ranged from very brief to a few studies that included detailed descriptions of how the initial list of attributes were distilled down to the final set of attributes in each stage.

This review highlights that a majority of studies reporting on attribute selection and development lack detail on the decision-making criteria and process when selecting and refining attributes and the qualitative study design and findings that informed attribute selection and development.

Few studies reported how qualitative findings were used to define other aspects of the DCE design.

Few studies report DCE attribute and survey development in a manner that would allow for a comprehensive assessment of the validity of the DCE study design, its comparability with other studies, the transferability of its preference data, or replication of the selection of development process.

The findings from this review could be used as a first step in generating consolidated attribute selection and development reporting guidelines to complement existing reporting checklists.

## References

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