11 questions to help you make sense of descriptive/cross-sectional studies

How to use this appraisal tool

Three broad issues need to be considered when appraising the report of a descriptive/cross-sectional study (e.g., a study that collects data on individuals at one time point using a survey or review of medical charts):

- Are the results of the study valid?
- What are the results?
- Will the results help locally?

The 11 questions on the following pages are designed to help you think about these issues systematically. The first two questions are screening questions and can be answered quickly. If the answer to both is "yes", it is worth proceeding with the remaining questions. You are asked to record a "yes", "no" or "can't tell" to most of the questions. A number of italicized prompts are given after each question. These are designed to remind you why the question is important. Record your reasons for your answers in the spaces provided. These questions are adapted from Guyatt GH, Sackett DL, and Cook DJ, Users' guides to the medical literature. II. How to use an article about therapy or prevention. *JAMA* 1993; 270 (21): 2598-2601 and *JAMA* 1994; 271(1): 59-63 © Milton Keynes Primary Care Trust 2002. All rights reserved.

Screening Questions

1. Did the study address a clearly focused issue?

Can't tell

Yes

No

No

- HINT: A question can be focused in terms of:
- the population(s) studied
- the health measure(s) studied (e.g., risk factor, preventive behavior, outcome)

2. Did the authors use an appropriate method to answer their question?

Yes Can't tell

HINT: Consider

- Is a descriptive/cross-sectional study an appropriate way of answering the question?
- Did it address the study question?

Detailed Questions

3. Were the subjects recruited in an acceptable way?

HINT: We are looking for selection bias which might compromise the generalizability of the findings:

- Was the sample representative of a defined population?
- Was everybody included who should have been included?

4. Were the measures accurately measured to reduce bias?

HINT: We are looking for measurement or classification bias:

- Did they use subjective or objective measurements?
- Do the measures truly reflect what you want them to (have they been validated)?

5. Were the data collected in a way that addressed the research issue?

Consider:

- if the setting for data collection was justified
- if it is clear how data were collected (e.g., interview, questionnaire, chart review)
- if the researcher has justified the methods chosen
- if the researcher has made the methods explicit (e.g. for interview method, is there an indication of how interviews were conducted?)

6. Did the study have enough participants to minimize the play of chance?

Consider:

- if the result is precise enough to make a decision
- if there is a power calculation. This will estimate how many subjects are needed to produce a reliable estimate of the measure(s) of interest.

Yes Can't tell No

Can't tell

No

Yes

Yes Can't tell No

Yes Can't tell No

7. How are the results presented and what is the main result?

Yes

Can't tell

No

Consider:

- if, for example, the results are presented as a proportion of people experiencing an outcome, such as risks, or as a measurement, such as mean or median differences, or as survival curves and hazards
- how large this size of result is and how meaningful it is
- how you would sum up the bottom-line result of the trial in one sentence

8. Was the data analysis sufficiently rigorous?

Yes Can't tell

No

Consider:

- if there is an in-depth description of the analysis process
- if sufficient data are presented to support the findings

9. Is there a clear statement of findings?

Yes Can't tell No

Consider:

- if the findings are explicit
- if there is adequate discussion of the evidence both for and against the researchers' arguments
- if the researcher have discussed the credibility of their findings
- if the findings are discussed in relation to the original research questions

10. Can the results be applied to the local population?

Yes Can't tell

No

HINT: Consider whether

- The subjects covered in the study could be sufficiently different from your population to cause concern.
- Your local setting is likely to differ much from that of the study

11. How valuable is the research?

write comments here

Consider:

- if the researcher discusses the contribution the study makes to existing knowledge (e.g. do they consider the findings in relation to current practice or policy, or relevant research-based literature?)
- -if the researchers have discussed whether or how the findings can be transferred to other populations