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CASP Checklist: 11 questions to help you make sense of a Case Control Study

How to use this appraisal tool: Three broad issues need to be considered when appraising a case control study:

- Are the results of the study valid? (Section A) What are the results? (Section B)
- Will the results help locally? (Section C)

The 11 questions on the following pages are designed to help you think about these issues systematically. The first three questions are screening questions and can be answered quickly. If the answer to both is "yes", it is worth proceeding with the remaining questions. There is some degree of overlap between the questions, you are asked to record a "yes", "no" or "can't tell" to most of the questions. A number of italicised 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.

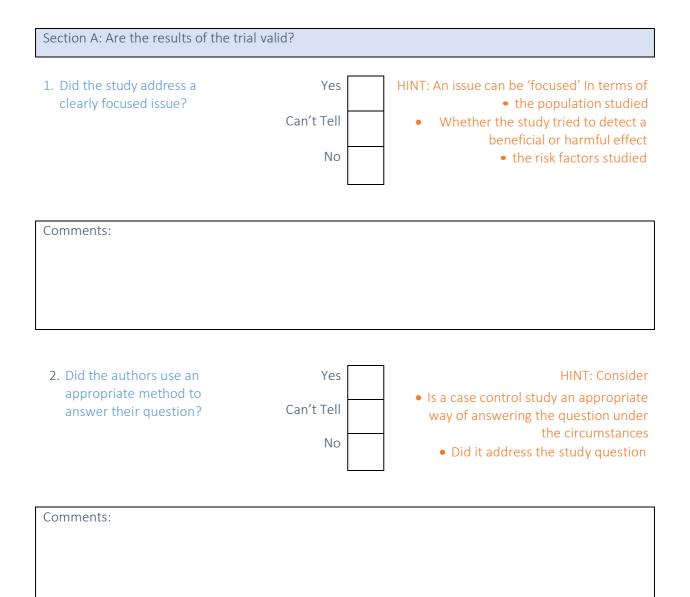
About: These checklists were designed to be used as educational pedagogic tools, as part of a workshop setting, therefore we do not suggest a scoring system. The core CASP checklists (randomised controlled trial & systematic review) were based on JAMA 'Users' guides to the medical literature 1994 (adapted from Guyatt GH, Sackett DL, and Cook DJ), and piloted with health care practitioners.

For each new checklist, a group of experts were assembled to develop and pilot the checklist and the workshop format with which it would be used. Over the years overall adjustments have been made to the format, but a recent survey of checklist users reiterated that the basic format continues to be useful and appropriate.

Referencing: we recommend using the Harvard style citation, i.e.: *Critical Appraisal Skills Programme (2018). CASP (insert name of checklist i.e. Case Control Study) Checklist. [online] Available at: URL. Accessed: Date Accessed.*

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Is it worth continuing? 3. Were the cases recruited in Yes HINT: We are looking for selection bias an acceptable way? which might compromise validity of the Can't Tell findings • are the cases defined precisely No • were the cases representative of a defined population (geographically and/or temporally) Comments: • was there an established reliable system for selecting all the cases • are they incident or prevalent • is there something special about the cases • is the time frame of the study relevant to disease/exposure • was there a sufficient number of cases selected • was there a power calculation 4. Were the controls selected in HINT: We are looking for selection bias Yes an acceptable way? which might compromise the Can't Tell generalisability of the findings • were the controls representative of the No defined population (geographically and/or temporally) was there something special about Comments: the controls was the non-response high, could non-respondents be different in any way are they matched, population based or randomly selected was there a sufficient number of controls selected



Comments:

6. (a) Aside from the

equally?

experimental intervention,

were the groups treated

5. Was the exposure accurately

measured to minimise bias?



• was the exposure clearly defined and accurately measured

 did the authors use subjective or objective measurements
 do the measures truly reflect what they are supposed to measure (have they been validated)

were the measurement methods similar in the cases and controls
did the study incorporate blinding

where feasibleis the temporal relation correct

(does the exposure of interest precede the outcome)

HINT: List the ones you think might be important, that the author may have missed

• genetic

• environmental

• socio-economic

List:		
6. (b) Have the authors taken	Yes	HINT: Look for
account of the potential confounding factors in the	Can't Tell	• restriction in design, and techniques e.g. modelling, stratified-, regression-, or
design and/or in their analysis?		sensitivity analysis to correct, control or
anarysis:	No	adjust for confounding factors
Commenter		
Comments:		

Yes

No

Can't Tell





Section B: What are the results?

7. How large was the treatment effect?	
	• is

8. How precise was the estimate of the treatment effect?

HINT: Consider • what are the bottom line results is the analysis appropriate to

is the analysis appropriate to the design

- how strong is the association between exposure and outcome (look at the odds ratio)
 - are the results adjusted for confounding, and might confounding still explain the association

• has adjustment made a big difference to the OR

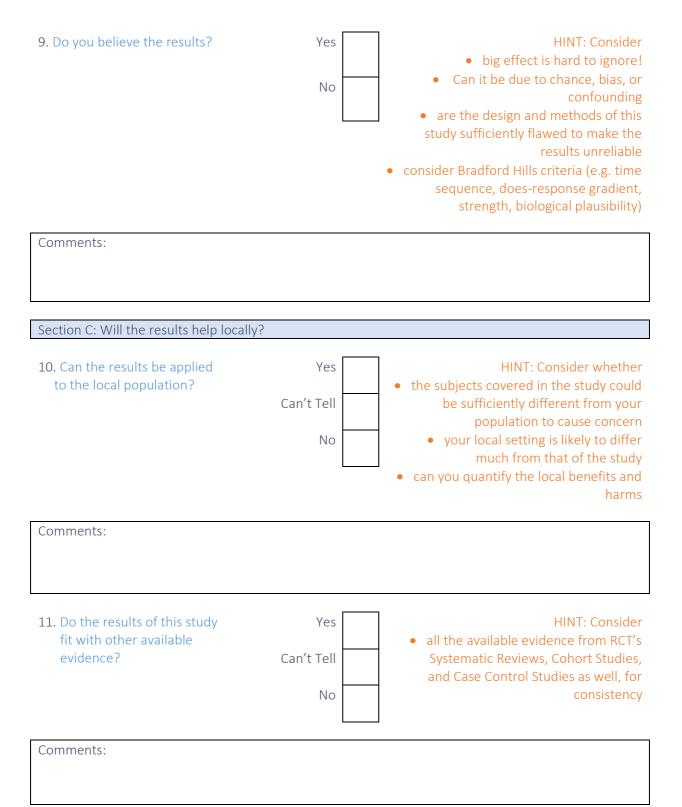
HINT: Consider
size of the p-value
size of the confidence intervals
have the authors considered all the important variables

• how was the effect of subjects refusing to participate evaluated

Comments:

Comments:





Remember One observational study rarely provides sufficiently robust evidence to recommend changes to clinical practice or within health policy decision making. However, for certain questions observational studies provide the only evidence. Recommendations from observational studies are always stronger when supported by other evidence.