

Appendix 3: Newcastle-Ottawa risk of bias quality assessment

NEWCASTLE - OTTAWA QUALITY ASSESSMENT SCALE CASE CONTROL STUDIES

Selection (Maximum 4 * stars)

- 1) Is the case definition adequate?
 - a) yes, with independent validation *
 - b) yes, eg. record linkage or based on self-reports
 - c) no description
- 2) Representativeness of the cases
 - a) consecutive or obviously representative series of cases *
 - b) potential for selection biases or not stated
- 3) Selection of Controls
 - a) community controls *
 - b) hospital controls
 - c) no description
- 4) Definition of Controls
 - a) no history of disease (endpoint) *
 - b) no description of source

Comparability (Maximum 2 * stars)

- 1) Comparability of cases and controls on the basis of the design or analysis
 - a) study controls for _____ (Select the most important factor.) *
 - b) study controls for any additional factor * (This criteria could be modified to indicate specific control for a second important factor.)

Exposure (Maximum 3 * stars)

- 1) Ascertainment of exposure
 - a) secure record (eg surgical records) *
 - b) structured interview where blind to case/control status *
 - c) interview not blinded to case/control status
 - d) written self-report or medical record only
 - e) no description
- 2) Same method of ascertainment for cases and controls
 - a) yes *
 - b) no
- 3) Non-Response rate
 - a) same rate for both groups *
 - b) non-respondents described
 - c) rate different and no designation

NEWCASTLE - OTTAWA QUALITY ASSESSMENT SCALE COHORT STUDIES

Selection (Maximum 4 * stars)

- 1) Representativeness of the exposed cohort
 - a) truly representative of the average _____ (describe) in the community *
 - b) somewhat representative of the average _____ in the community *
 - c) selected group of users eg nurses, volunteers
 - d) no description of the derivation of the cohort
- 2) Selection of the non-exposed cohort
 - a) drawn from the same community as the exposed cohort *
 - b) drawn from a different source
 - c) no description of the derivation of the non-exposed cohort
- 3) Ascertainment of exposure
 - a) secure record (eg surgical records) *
 - b) structured interview *
 - c) written self-report
 - d) no description
- 4) Demonstration that outcome of interest was not present at start of study
 - a) yes *
 - b) no

Comparability (Maximum 2 * stars)

- 1) Comparability of cohorts on the basis of the design or analysis
 - a) study controls for _____ (select the most important factor) *
 - b) study controls for any additional factor * (This criteria could be modified to indicate specific control for a second important factor.)

Outcome (Maximum 3 * stars)

- 1) Assessment of outcome
 - a) independent blind assessment *
 - b) record linkage *
 - c) self-report
 - d) no description
- 2) Was follow-up long enough for outcomes to occur
 - a) yes (select an adequate follow up period for outcome of interest) *
 - b) no
- 3) Adequacy of follow up of cohorts
 - a) complete follow up - all subjects accounted for *
 - b) subjects lost to follow up unlikely to introduce bias - small number lost - > ____ % (select an adequate %) follow up, or description provided of those lost) *
 - c) follow up rate < ____% (select an adequate %) and no description of those lost
 - d) no statement

**NEWCASTLE - OTTAWA QUALITY ASSESSMENT SCALE
CROSS-SECTIONAL STUDIES**

Selection (Maximum 5 * stars)

- 1) Representativeness of the sample
 - a) Truly representative of the average target population (all subjects or random sampling) *
 - b) Somewhat representative of the average target population (non-random sampling) *
 - c) Selected group of users
 - d) No description of the sampling strategy
- 2) Sample size
 - a) Justified and satisfactory *
 - b) Not justified
- 3) Non-respondents
 - a) Comparability between respondents and non-respondents characteristics is established, and the response rate is satisfactory *
 - b) The response rate is unsatisfactory, or the comparability between respondents and non-respondents is unsatisfactory
 - c) No description of the response rate or the characteristics of the responders and the non-responders
- 4) Ascertainment of the exposure (risk factor)
 - a) Validated measurement tool **
 - b) Non-validated measurement tool, but the tool is available or described *
 - c) No description of the measurement tool

Comparability (Maximum 2 * stars)

- 1) The subjects in different outcome groups are comparable, based on the study design or analysis. Confounding factors are controlled.
- a) The study controls for the most important factor (select one) *
 - b) The study control for any additional factor *

Outcome (Maximum 3 * stars)

- 1) Assessment of the outcome
 - a) Independent blind assessment **
 - b) Record linkage **
 - c) Self report *
 - d) No description
- 2) Statistical test
 - a) The statistical test used to analyze the data is clearly described and appropriate, and the measurement of the association is presented, including confidence intervals and the probability level (p value) *
 - b) The statistical test is not appropriate, not described or incomplete