Newcastle-Ottawa Scale adapted for cross-sectional studies

Selection:

1. Representativeness of the sample:
   a. Truly representative of the average in the target population. * (all subjects or random sampling)
   b. Somewhat representative of the average in the target group. * (non-random sampling)
   c. Selected group of users/convenience sample.
   d. No description of the derivation of the included subjects.

2. Sample size:
   a. Justified and satisfactory (including sample size calculation). *
   b. Not justified.
   c. No information provided

3. Non-respondents:
   a. Proportion of target sample recruited attains pre-specified target or basic summary of non-respondent characteristics in sampling frame recorded. *
   b. Unsatisfactory recruitment rate, no summary data on non-respondents.
   c. No information provided

4. Ascertainment of the exposure (risk factor):
   a. Vaccine records/vaccine registry/clinic registers/hospital records only. **
   b. Parental or personal recall and vaccine/hospital records. *
   c. Parental/personal recall only.

Comparability: (Maximum 2 stars)

1. Comparability of subjects in different outcome groups on the basis of design or analysis. Confounding factors controlled.
   a. Data/results adjusted for relevant predictors/risk factors/confounders e.g. age, sex, time since vaccination, etc. **
   b. Data/results not adjusted for all relevant confounders/risk factors/information not provided.

Outcome:

1. Assessment of outcome:
   a. Independent blind assessment using objective validated laboratory methods. **
   b. Unblinded assessment using objective validated laboratory methods. **
   c. Used non-standard or non-validated laboratory methods. *
   d. No description/non-standard laboratory methods used.

2. Statistical test:
   a. Statistical test used to analyse the data clearly described, appropriate and measures of association presented including confidence intervals and probability level (p value). *
   b. Statistical test not appropriate, not described or incomplete.

Cross-sectional Studies:
Very Good Studies: 9-10 points
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Good Studies: 7-8 points
Satisfactory Studies: 5-6 points
Unsatisfactory Studies: 0 to 4 points

This scale has been adapted from the Newcastle-Ottawa Quality Assessment Scale for cohort studies to provide quality assessment of cross sectional studies\(^1\).

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