STROBE Statement—checklist of items that should be included in reports of observational studies

|  |  |  |
| --- | --- | --- |
|  | **Item No** | **Recommendation** |
| **Title and abstract** | 1 | (*a*) Indicate the study’s design with a commonly used term in the title or the abstract  Page 4 line 19 - 28 |
|  |  | (*b*) Provide in the abstract an informative and balanced summary of what was done and what was found  Page 4 line 30 – page 5 line 7 |
| **Introduction** |  |  |
| Background/rationale | 2 | Explain the scientific background and rationale for the investigation being reported  Page 5 - 8 |
| Objectives | 3 | State specific objectives, including any prespecified hypotheses  Page 8 line 34 – page 9 line 2 |
| **Methods** | | |
| Study design | 4 | Present key elements of study design early in the paper  Page 9 line 17 - 26 |
| Setting | 5 | Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection  Page 9 line 17 - 26 |
| Participants | 6 | (*a*) *Cohort study*—Give the eligibility criteria, and the sources and methods of selection of participants. Describe methods of follow-up  *Case-control study*—Give the eligibility criteria, and the sources and methods of case ascertainment and control selection. Give the rationale for the choice of cases and controls  *Cross-sectional study*—Give the eligibility criteria, and the sources and methods of selection of participants  Page 9 line 17 - 26 |
|  |  | (*b*) *Cohort study*—For matched studies, give matching criteria and number of exposed and unexposed  *Case-control study*—For matched studies, give matching criteria and the number of controls per case  Page 9 line 17 - 26 |
| Variables | 7 | Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable  Page 10 line 8 - 19 |
| Data sources/ measurement | 8\* | For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group  Page 9 line 17 - 26 |
| Bias | 9 | Describe any efforts to address potential sources of bias  Page 16 line 2 - 6 |
| Study size | 10 | Explain how the study size was arrived at  Page 11 line 3 - 11 |
| Quantitative variables | 11 | Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why  Page 10 line 8 - 19 |
| Statistical methods | 12 | (*a*) Describe all statistical methods, including those used to control for confounding  Page 10 line 8 - 19 |
|  |  | (*b*) Describe any methods used to examine subgroups and interactions  Page 10 line 8 - 19 |
|  |  | (*c*) Explain how missing data were addressed  Page 10 line 14 - 34 |
|  |  | (*d*) *Cohort study*—If applicable, explain how loss to follow-up was addressed  *Case-control study*—If applicable, explain how matching of cases and controls was addressed  *Cross-sectional study*—If applicable, describe analytical methods taking account of sampling strategy  Page 10 line 14 - 34 |
|  |  | (*e*) Describe any sensitivity analyses |

Continued on next page

|  |  |  |
| --- | --- | --- |
| **Results** |  | Page 13 line 30 - 31 |
| Participants | 13\* | (a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed  Page 11 line 3 - 11 |
|  |  | (b) Give reasons for non-participation at each stage  Page 11 line 3 - 11 |
|  |  | (c) Consider use of a flow diagram  Not applicable |
| Descriptive data | 14\* | (a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders  Page 11 line 14 - 34 |
|  |  | (b) Indicate number of participants with missing data for each variable of interest  Page 11 line 3 - 11 |
|  |  | (c) *Cohort study*—Summarise follow-up time (eg, average and total amount)  Page 9 line 17 - 26 |
| Outcome data | 15\* | *Cohort study*—Report numbers of outcome events or summary measures over time  Page 10 line 14 - 34 |
|  |  | *Case-control study—*Report numbers in each exposure category, or summary measures of exposure  Not applicable |
|  |  | *Cross-sectional study—*Report numbers of outcome events or summary measures  Not applicable |
| Main results | 16 | (*a*) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included  Not applicable |
|  |  | (*b*) Report category boundaries when continuous variables were categorized  Not applicable |
|  |  | (*c*) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period  Not applicable |
| Other analyses | 17 | Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses  Page 13 line 3 - 15 |
| **Discussion** |  |  |
| Key results | 18 | Summarise key results with reference to study objectives  Page 17 line 21 - 27 |
| Limitations | 19 | Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias  Page 16 line 2 - 6 |
| Interpretation | 20 | Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence  Page 15 line 19 - 35 |
| Generalisability | 21 | Discuss the generalisability (external validity) of the study results  Page 15 line 19 - 35 |
| **Other information** | | |
| Funding | 22 | Give the source of funding and the role of the funders for the present study and, if applicable,  for the original study on which the present article is based  Page 2 line 30 – Page 3 line 1 |

\*Give information separately for cases and controls in case-control studies and, if applicable, for exposed and unexposed groups in cohort and cross-sectional studies.

**Note:** An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at [http://www.plosmedicine.org/,](http://www.plosmedicine.org/) Annals of Internal Medicine at [http://www.annals.org/,](http://www.annals.org/) and Epidemiology at [http://www.epidem.com/).](http://www.epidem.com/)) Information on the STROBE Initiative is available at [www.strobe-statement.org.](http://www.strobe-statement.org/)