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

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | **Item**  **No** |  | | |  | | **Page** |
| **Title and abstract** | | | | 1 | (*a*) Indicate the study’s design with a commonly used term in the title or the abstract | | |  | | 1 |
|  | | | |  | (*b*) Provide in the abstract an informative and balanced summary of what was done  and what was found | | |  | | 3-4 |
| **Introduction** | | | |  |  | | |  | |  |
| Background/rationale | | | | 2 | Explain the scientific background and rationale for the investigation being reported | | |  | | 5-6 |
| Objectives | | | | 3 | State specific objectives, including any prespecified hypotheses | | |  | | 6 |
| **Methods** | | | |  |  | | |  | |  |
| Study design | | | | 4 | Present key elements of study design early in the paper | | |  | | 6 |
| Setting | | | | 5 | Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection | | |  | | 6-8 |
| 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 | | |  | | 6 |
|  | | | |  | (*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 | | |  | |  |
| Variables | | | | 7 | Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable | | |  | | 6-8 |
| 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 | | |  | | 6-8 |
| Bias | | | | 9 | Describe any efforts to address potential sources of bias | | |  | | 6 |
| Study size | | | | 10 | Explain how the study size was arrived at | | |  | | 6 |
| Quantitative variables | | | | 11 | Explain how quantitative variables were handled in the analyses. If applicable,  describe which groupings were chosen and why | | |  | | 8 |
| Statistical methods | | | | 12 | (*a*) Describe all statistical methods, including those used to control for confounding | | |  | | 6-8 |
|  | | | |  | (*b*) Describe any methods used to examine subgroups and interactions | | |  | | 6-8 |
|  | | | |  | (*c*) Explain how missing data were addressed | | |  | | 8 |
|  | | | |  | (*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 | | |  | | 7 |
|  | | | |  | (*e*) Describe any sensitivity analyses | | |  | | 8 |
| **Results** | |  |  | | |  | | |  | |
| 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 | | | 7 and 8-9 | |
|  | |  |  | | | (b) Give reasons for non-participation at each stage | | |  | |
|  | |  |  | | | (c) Consider use of a flow diagram | | |  | |
| Descriptive  data | | 14\* |  | | | (a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders | | | 8-9 | |
|  | |  |  | | | (b) Indicate number of participants with missing data for each variable of interest | | | 8 | |
|  | |  |  | | | (b) Indicate number of participants with missing data for each variable of interest | | | 8 | |
| Outcome data | | 15\* |  | | | Cohort study—Report numbers of outcome events or summary measures over time | | | 8-10 | |
|  | |  |  | | | Case-control study—Report numbers in each exposure category, or summary measures of exposure | | |  | |
|  | |  |  | | | Cross-sectional study—Report numbers of outcome events or summary measures | | |  | |
| 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 | | | 8-10 | |
|  | |  |  | | | (b) Report category boundaries when continuous variables were categorized | | |  | |
|  | |  |  | | | (c) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period | | |  | |
| Other analyses | | 17 |  | | | Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses | | | 8-10 | |
| **Discussion** | |  |  | | |  | | |  | |
| Key results | | 18 |  | | | Summarise key results with reference to study objectives | | | 10-11 | |
| 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 | | | 14-15 | |
| Interpretation | | 20 |  | | | Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence | | | 10-14 | |
| Generalisability | | 21 |  | | | Discuss the generalisability (external validity) of the study results | | | 10-14 | |
| **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 | | | No funding received, 2 | |

\*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.