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

| Section/item | Item No | Recommendation | Reported on Page Number/Line Number | Reported on Section/Paragraph |
|---|---|---|---|---|
| **Title and abstract** | 1 | (a) Indicate the study's design with a commonly used term in the title or the abstract | Page 1/line 1-2 | Title/Para 1 |
| | | (b) Provide in the abstract an informative and balanced summary of what was done and what was found | Page 2/line 23-46 | Abstract/Para 2-4 |
| **Introduction** | | | | |
| Background/ rationale | 2 | Explain the scientific background and rationale for the investigation being reported | Page 4/line 52-71 | Introduction/Para 1-2 |
| Objectives | 3 | State specific objectives, including any prespecified hypotheses | Page 4/line 72-74 | Introduction/Para 2 |
| **Methods** | | | | |
| Study design | 4 | Present key elements of study design early in the paper | Page 4-5/line 77-84 | Methods/Para 1 |
| Setting | 5 | Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection | Page 4-5/line 77-84 | Methods/Para 1 |
| Participants | 6 | (a) ***Cohort study***—Give the eligibility criteria, and the sources and methods of selection of participants. Describe methods of follow-up<br>***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<br>***Cross-sectional study***—Give the eligibility criteria, and the sources and methods of selection of participants | Page 4-5/line 86-106 | Methods/Para 2 |
| | | (b) ***Cohort study***—For matched studies, give matching criteria and number of exposed and unexposed<br>***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 | Page 6/line 117-135 | Methods/Para 4-5 |
| 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 6/line 117-135 | Methods/Para 4-5 |
| Bias | 9 | Describe any efforts to address potential sources of bias | Page 7/line 137-150 | Methods/Para 6 |
| Study size | 10 | Explain how the study size was arrived at | Page 4-5/line 77-84 | Methods/Para 1 |
| Quantitative variables | 11 | Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why | Page 7/line 137-150 | Methods/Para 6 |

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| Statistical methods | 12 | (a) Describe all statistical methods, including those used to control for confounding | Page 7/line 137-139 | Methods/Para 6 |
| | | (b) Describe any methods used to examine subgroups and interactions | Page 7/line 147-149 | Methods/Para 6 |
| | | (c) Explain how missing data were addressed | Page 7/line 142-143 | Methods/Para 6 |
| | | (d) ***Cohort study***—If applicable, explain how loss to follow-up was addressed<br>***Case-control study***—If applicable, explain how matching of cases and controls was addressed<br>***Cross-sectional study***—If applicable, describe analytical methods taking account of sampling strategy | Page 7/line 139-142 | Methods/Para 6 |
| | | (e) Describe any sensitivity analyses | Page 7/line 137-150 | Methods/Para 6 |
| **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 | Page 7/line 153-160 | Results/Para 1 |
| | | (b) Give reasons for non-participation at each stage | Page 7/line 153-160 | Results/Para 1 |
| | | (c) Consider use of a flow diagram | N/A | N/A |
| Descriptive data | 14* | (a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders | Page 7-8/line 162-176 | Results/Para 2 |
| | | (b) Indicate number of participants with missing data for each variable of interest | Page 7-8/line 162-176 | Results/Para 2 |
| | | (c) ***Cohort study***—Summarise follow-up time (eg, average and total amount) | | |
| Outcome data | 15* | ***Cohort study***—Report numbers of outcome events or summary measures over time | | |
| | | ***Case-control study***—Report numbers in each exposure category, or summary measures of exposure | Page 7/line 153-160 | Results/Para 1 |
| | | ***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 | Page 8-9/line 178-196 | Results/Para 3 |
| | | (b) Report category boundaries when continuous variables were categorized | Page 8-9/line 178-196 | Results/Para 3 |
| | | (c) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period | Page 8-9/line 178-196 | Results/Para 3 |
| Other analyses | 17 | Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses | Page 9/line 198-204 | Results/Para 4 |
| **Discussion** | | | | |
| Key results | 18 | Summarise key results with reference to study objectives | Page 9-11/line 236-254 | Discussion/Para 2-3 |
| 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 11-12/line 272-275 | Discussion/Para 5 |

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| Interpretation | 20 | Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence | Page 12/line 277-282 | Conclusion |
| Generalisability | 21 | Discuss the generalisability (external validity) of the study results | Page 12/line 277-282 | Conclusion |
| **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 12/line 298-301 | Funding |

*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/, Annals of Internal Medicine at http://www.annals.org/, and Epidemiology at http://www.epidem.com/). Information on the STROBE Initiative is available at www.strobe-statement.org.

Article information: http://dx.doi.org/10.21037/jtd-20-1101
*As the checklist was provided upon initial submission, the page number/line number reported may be changed due to copyediting and may not be referable in the published version. In this case, the section/paragraph may be used as an alternative reference.