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	1/lines 1-2	Ttitle
		(b) Provide in the abstract an informative and balanced summary of what was done and what was found	2-3	Abstract
Introduction				
Background/ rationale	2	Explain the scientific background and rationale for the investigation being reported	4-5	Introduction/paragraphs 1-5
Objectives	3	State specific objectives, including any prespecified hypotheses	6/lines 3-15	Introduction/ paragraph 6
Methods				
Study design	4	Present key elements of study design early in the paper	6-7	Methods/ paragraph 1
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	7/lines 10-13	Methods/ paragraph 2
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	7/lines 13-21	Methods/ paragraph 2
		(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	N/A- not matched	N/A- not matched
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	9-10/lines 12-21	Methods/ paragraphs 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	9-10/lines 12-21	Methods/ paragraphs 4-5
Bias	9	Describe any efforts to address potential sources of bias	8/ lines 4-6	Methods/ paragraph 2
Study size	10	Explain how the study size was arrived at	7-8/ lines 22-4	Methods/paragraph 2
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	9-10/ lines 16-9	Methods/ paragraphs 8-9

Statistical methods	12	(a) Describe all statistical methods, including those used to control for confounding	11-12/ lines 16-9	Methods/paragraphs 9-10
		(b) Describe any methods used to examine subgroups and interactions	N/A- no subgroup analysis	N/A- no subgroup analysis
		(c) Explain how missing data were addressed	11-12/ lines 20-9	Methods/ paragraph 10
		(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	11-12/ lines 20-9 Loss to follow up is included as a measurement of feasibility	Methods/ paragraph 10
		(e) Describe any sensitivity analyses	N/A- no sensitivity analy	N/A- no sensitivity analy
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	Figure 1	Figure 1
		(b) Give reasons for non-participation at each stage	Figure 1	Figure 1
		(c) Consider use of a flow diagram	Figure 1	Figure 1
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	12/ lines 11-14; Table 1	Results/ paragraph 1; Table 1
		(b) Indicate number of participants with missing data for each variable of interest	12-3 lines 20- 13; Table 2	Results/paragraph 2-3 ;
		(c) ***Cohort study***—Summarise follow-up time (eg, average and total amount)	12-13 lines 20- 13	Results/ paragraph 2-3
Outcome data	15*	***Cohort study***—Report numbers of outcome events or summary measures over time	12-14/ 20-15	Results/ paragraph 2-3
		Case-control study—Report numbers in each exposure category, or summary measures of exposure	N/A- not case control	N/A- not case control
		Cross-sectional study—Report numbers of outcome events or summary measures	N/A- not cross-sectional	N/A- not cross-sectional
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	N/A- descriptive only	N/A- descriptive only
		(b) Report category boundaries when continuous variables were categorized	13-14/ lines 14-15	Results/ paragraphs 4-5
		(c) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	N/A- descriptive only	N/A- descriptive only
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	14-15/ lines 16-22	Results/paragraphs 6-7
Discussion				
Key results	18	Summarise key results with reference to study objectives	16/ lines 1-18	Discussion/ paragraph 1-2
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	17/ lines 5-18	Discussion/paragraph 3

Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	17-18/ lines 19-20	Discussion 4-5
Generalisability	21	Discuss the generalisability (external validity) of the study results	17/ lines 8-17	Discussion/ paragraph 3
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	Acknowledgements	Acknowlegements

*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/mhealth-19-200
*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.