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	Page3 Line2	Abstract
		(b) Provide in the abstract an informative and balanced summary of what was done and what was found	Page3 Line3-Page4 Line4	Abstract
Introduction				
Background/ rationale	2	Explain the scientific background and rationale for the investigation being reported	Page5 Line7-Line9	Introduction Paragraph 2
Objectives	3	State specific objectives, including any prespecified hypotheses	Page5 Line13-15	Introduction Paragraph 3
Methods				
Study design	4	Present key elements of study design early in the paper	Page5 Line17-Page6Line12	Methods Paragraph1-2
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	Page6 Line3-Line5 Page6 Line6-Page7Line17	Methods Paragraph 1
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	Page6Line3-Line5	Methods Paragraph1
		Cross-sectional study—Give the eligibility criteria, and the sources and methods of selection of participants	Page6Line13-Page7Line17	Methods Paragraph3
		(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	N/A
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	Page7Line6-Line9	Methods Paragraph3
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	Page6Line6-Page7Line17	Methods Paragraph 2-3
Bias	9	Describe any efforts to address potential sources of bias	N/A	N/A
Study size	10	Explain how the study size was arrived at	Page6Line3-Page6Line4	Methods Paragraph1
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	Page8 Line8-12	Methods statistical analysis

Statistical methods	12	(a) Describe all statistical methods, including those used to control for confounding	Page8 Line8-12	Methods statistical analysis
		(b) Describe any methods used to examine subgroups and interactions	Page12 Line8-11	Results Paragraph 13
		(c) Explain how missing data were addressed	Page7 Line16	Methods Paragraph 3
		(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	Page8 Line8-Line12	Methods statistical analysis
		(e) Describe any sensitivity analyses	N/A no sensitivity analysis	
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	Page8 Line16-17	Results Paragraph1
		(b) Give reasons for non-participation at each stage	Page 7 Line11-Line 15	Methods Paragraph 4
		(c) Consider use of a flow diagram	N/A	
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	Page 8Line17-Page9 Line1	Results Paragraph1
		(b) Indicate number of participants with missing data for each variable of interest	Page9Line7-	Results

			Line11	Paragraph2
		(c) ***Cohort study***—Summarise follow-up time (eg, average and total amount)	N/A	N/A
Outcome data	15*	***Cohort study***—Report numbers of outcome events or summary measures over time	N/A	N/A
		Case-control study—Report numbers in each exposure category, or summary measures of exposure	N/A	N/A
		Cross-sectional study—Report numbers of outcome events or summary measures	Page8 Line15-Page9Line5	Results Paragraph1
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	Page8 Line15-Page9Line5	Results Paragraph1
		(b) Report category boundaries when continuous variables were categorized	N/A	N/A
		(c) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	N/A	N/A
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	Page12 Line8-Line11	Results Paragraph 13
Discussion				
Key results	18	Summarise key results with reference to study objectives	Page12Line13-Page13Line10	Discussion Paragraph 1
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	Page16 Line16-Page17Line17	Discussion Paragraph 8

Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	Page13 Line11-page15 Line6	Discussion Paragraph2-5
Generalisability	21	Discuss the generalisability (external validity) of the study results	Page18 Line1-7	Discussion Paragraph 9
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 Line10-12	Title

*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: (available at https://dx.doi.org/10.21037/jss-21-78)
*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.