

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

	Item No.	Recommendation	Page No.
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	4, 5
Introduction			
Background/rationale	✓ 2	Explain the scientific background and rationale for the investigation being reported	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, 7
Setting	✓ 5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	6, 7
Participants	✓ 6	(a) Cohort study—Give the eligibility criteria, and the sources and methods of selection of participants. Describe methods of follow-up	6, 7, 8, 9
		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	
		(b) Cohort study—For matched studies, give matching criteria and number of exposed and unexposed	6, 7, 8, 9
		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	7, 8, 9
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	8, 9
Bias	✓ 9	Describe any efforts to address potential sources of bias	9, 10
Study size	✓ 10	Explain how the study size was arrived at	6, 7

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Quantitative variables	✓ 11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	8, 9
Statistical methods	✓ 12	(a) Describe all statistical methods, including those used to control for confounding	9, 10
		(b) Describe any methods used to examine subgroups and interactions	9, 10
		(c) Explain how missing data were addressed	9, 10
		(d) <i>Cohort study</i> —If applicable, explain how loss to follow-up was addressed	9, 10
		<i>Case-control study</i> —If applicable, explain how matching of cases and controls was addressed	
		<i>Cross-sectional study</i> —If applicable, describe analytical methods taking account of sampling strategy	
		(e) Describe any sensitivity analyses	9, 10
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	10, 11
		(b) Give reasons for non-participation at each stage	10, 11
		(c) Consider use of a flow diagram	10, 11
Descriptive data	✓ 14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	10, 11
		(b) Indicate number of participants with missing data for each variable of interest	10, 11
		(c) <i>Cohort study</i> —Summarise follow-up time (eg, average and total amount)	10, 11
Outcome data	✓ 15*	<i>Cohort study</i> —Report numbers of outcome events or summary measures over time	10, 11
		<i>Case-control study</i> —Report numbers in each exposure category, or summary measures of exposure	10, 11
		<i>Cross-sectional study</i> —Report numbers of outcome events or summary measures	10, 11
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	11, 12
		(b) Report category boundaries when continuous variables were categorized	11, 12
		(c) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	11, 12

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Other analyses	✓17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	11, 12
Discussion			
Key results	✓18	Summarise key results with reference to study objectives	12, 13, 14, 15
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	15
Interpretation	✓20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	12
Generalisability	✓21	Discuss the generalisability (external validity) of the study results	15
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	16, 17, 18

*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.