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

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|  | Item No. | Recommendation | Page No. | Relevant text from manuscript |
| **Title and abstract** | 1 | (*a*) Indicate the study’s design with a commonly used term in the title or the abstract | P.2 | Abstract: lines 19–22 |
| (*b*) Provide in the abstract an informative and balanced summary of what was done and what was found | P.2 | Abstract: lines 17–32 |
| Introduction |  |
| Background/rationale | 2 | Explain the scientific background and rationale for the investigation being reported | P.3 | Introduction/Background: lines 33–48 (“33 Introduction… 48 instances…”) |
| Objectives | 3 | State specific objectives, including any prespecified hypotheses | P.2 | Objectives in the abstract: lines 19–20 (“…we investigate the epidemiological…”) |
| Methods |  |
| Study design | 4 | Present key elements of study design early in the paper | P.2 | Methods in the abstract: lines 21–24 (“…We prospectively collected fecal samples…”) |
| Setting | 5 | Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection | P.4 | Methods: lines 78–85 (“…Stool specimens were obtained… January 2023…”) |
| 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 | P.4 | Methods: lines 80–81 (“Stool specimens… definition of diarrhea…”) |
| (*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 | P.5 | Virulence gene detection/analysis: lines 117–123 (“117 Virulence gene variants…”) |
| 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 | P.4-5 | Specimen and gene detection methods: lines 78–85, 117–123 |
| Bias | 9 | Describe any efforts to address potential sources of bias | P.8 | Limitations in the Discussion: lines 247–252 (“247 Objectively, this study has…”) |
| Study size | 10 | Explain how the study size was arrived at | P.2 | Abstract: lines 20–21 (“We prospectively collected fecal samples from 212…”) |

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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 | P.2 | Abstract: line 21 (“…212 patients… 25 strains were isolated…”) |
| Statistical methods | 12 | (*a*) Describe all statistical methods, including those used to control for confounding | Not covered in the text | Not covered in the text |
| (*b*) Describe any methods used to examine subgroups and interactions |  |  |
| (*c*) Explain how missing data were addressed |  |  |
| (*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 |  |  |
| (*e*) Describe any sensitivity analyses |  |  |
| 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 | P.4 | Methods: lines 78–85 (case selection, culture, confirmation) |
| (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 | P.2/P.4/Table1 | Lines 19–20 (target population), lines 78–85 (hospital departments, sample sources) |
| (b) Indicate number of participants with missing data for each variable of interest |  |  |
| (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 |  |  |
| *Cross-sectional study—*Report numbers of outcome events or summary measures | P.2 | Abstract: lines 22–25 (“…25 (11.8%) strains… 20 (9.4%) toxigenic…”) |
| 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 | P.2-3 | Abstract & results: lines 19–32, 33–48 (epidemiological features, detection rates) |
| (*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 |  |  |

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| Other analyses | 17 | Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses | P.7-8 | Discussion: lines 242–260 (“… further analysis revealed… antibiotic selection…”) |
| Discussion |
| Key results | 18 | Summarise key results with reference to study objectives | P.7 | Lines 253–260 (“…In conclusion, this study provides a comprehensive…”) |
| 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 | P.8 | Lines 247–252 (“Objectively, this study has several limitations…”) |
| Interpretation | 20 | Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence | P.8 | Lines 253–260 (“…These insights are essential for developing targeted…”). |
| Generalisability | 21 | Discuss the generalisability (external validity) of the study results | P.8 | Lines 247–260 (limitations and conclusions, mention single-center nature, need for multi-center validation) |
| 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 | P.1 | This work was supported by the Youth Technology Fund of Gansu Province (No:21JR11RA073) and the Youth Fund of the first hospital of Lanzhou University (No: ldyyyn2020-43). |

\*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.