**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 | 1 | The Need Assessment of Midwifery Care Variables to Enhance the Role of Adolescent Mothers: A Delphi Method Approach |
| (*b*) Provide in the abstract an informative and balanced summary of what was done and what was found | 1 | Based on expert consensus, important assessments for Adolescent pregnant women include addressing issues of gender equality and domestic violence, reproductive and sexual health, risks associated with smoking and substance abuse, maintaining a healthy pregnancy, and adequately preparing for labor and parenthood |
| Introduction |  |
| Background/rationale | 2 | Explain the scientific background and rationale for the investigation being reported |  | Adolescent pregnancy poses risks for both mothers and infants, often due to insufficient prenatal care resulting from societal stigmatization and lack of awareness. To address this issue, integrated programs and continuous midwifery care have been implemented. However, providing such care to adolescent mothers comes with its own set of challenges. This study found the variables midwifery care needed by adolescent pregnant women  |
| Objectives | 3 | State specific objectives, including any prespecified hypotheses | 1 | This study aims to conduct a need assessment of the variables of midwifery care for adolescent pregnancy, include addressing issues of gender equality and domestic violence, reproductive and sexual health, risks associated with smoking and substance abuse, maintaining a healthy pregnancy, and adequately preparing for labor and parenthood. |
| Methods |  |
| Study design | 4 | Present key elements of study design early in the paper | 5 | Delphi Method approach was used in this study |
| Setting | 5 | Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection | 6 | The data was collected through Delphi method involves two rounds of participation from three groups of participants with expertise in the field of midwifery. First, engaged 21 independent midwives who have reached the Pomegranate Midwife standard, possess over 10 years of clinical experience, and have at least completed a Diploma IV in Midwifery. Additionally, we involved six midwives responsible for the Mother and Child Health Program at the Padang City Health Center with a minimum of 5 years of clinical experience in midwifery practice. Finally, nine midwifery lecturers from accredited educational institutions A (excellent) in West Sumatra also participated. Research Location in Padang City West Sumatra in June 2024. In the first phase of the Delphi method, collected initial data to identify sample characteristics, build relevant variables, identify difficul-ties, and identify potential instrument development.Experts then met to discuss and compare their views until consensus was reached. This approach was used to generate more precise and relevant questions that would be redistributed to expert. The second and third phases involved two rounds of online Delphi surveys with identified participants. The aim of these phases was to achieve consensus on a set of 35 metrics that would be used to measure the process of midwifery care. In Round 2, participants were asked to assess the relevance and importance of each metric using a Likert scale based on their own considerations. The fourth and final phase included a face-to-face meeting with midwifery experts to review findings and reach consensus on a set of final metrics and indicators. |
| Participants | 6 | 1. ***Cohort study***—Give the eligibility criteria, and the sources and methods of selection of participants. Describe methods of follow-up
2. ***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
3. ***Cross-sectional study***—Give the eligibility criteria, and the sources and methods of selection of participants
 | 6-7 | Inclusion Criteria **:**1. Independent midwives who have reached the Pomegranate Midwife standard, possess over 10 years of clinical experience, and have at least completed a Diploma IV in Midwifery. They are professionals who have experienced quality standardization in Independent Midwifery Practice (PMB), focusing on monitoring, evaluation, training, mentoring, and continuous training in midwifery practice. They are professionals who have experienced quality standardization in Independent Midwifery Practice (PMB), focusing on monitoring, evaluation, training, mentoring, and continuous training in midwifery practice2. Midwives responsible for the Mother and Child Health Program at the Padang City Health Center with a minimum of 5 years of clinical experience in midwifery practice. 3. Midwifery lecturers from accredited educational institutions A (excellent) in West Sumatra , bringing their expertise in the field of midwifery to support the development of this research Meanwhile, the Exclusion Criteria is withdrew as a participant during the study period. |
| 1. ***Cohort study***—For matched studies, give matching criteria and number of exposed and unexposed
2. ***Case-control study***—For matched studies, give matching criteria and the number of controls per case
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| Variables | 7 | Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable | 9-10 | To obtain item metrics a need assessment of midwifery care variables from the dimensions of management continuity, informational continuity, and relational continuity needed by adolescent pregnant women to prepare for their role as mothers. |
| 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 |  |  |
| Bias | 9 | Describe any efforts to address potential sources of bias | 9  | Ensure respondents are eligible and understand about delphi method (expert concensus ). Identifying qualified midwives based on expertise, clinical experience, educational level, and special qualifications (Delima Midwives) in the targeted area. midwifery lecturers from accredited educational institutions A (excellent), bringing their expertise in the field of midwifery to support the development of research. |
| Study size | 10 | Explain how the study size was arrived at |  |  |

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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 |  |  |
| Statistical methods | 12 | (*a*) Describe all statistical methods, including those used to control for confounding |  |  |
| (*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 | 8 | In the implementation of the Delphi method, statements or items considered relevant or essential to midwifery care are evaluated. If participants rate an item with a minimum score of 3, its validity is calculated using the Content Validity Ratio (CVR) formula |
| (*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 | 9 | All participants who met the criteria participated in this study, 21 independent midwives, 5 midwives responsible for the Mother and Child Health Program, and nine midwifery lecturers from accredited educational institutions A (excellent).Results of this analysis obtain a need assessment of midwifery care variables from the dimensions of management continuity, informational continuity, and relational continuity needed by adolescent pregnant women to prepare for their role as mothers. There were 34 indicators, with 8 indicators for the management continuity dimension , 15 indicators for the informational continuity dimension and 11 indicators for the relational continuity dimension, considering Items are declared valid if CVR > 0.8 |
| (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 |  |  |
| (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 |  | In the first round of Delphi, there were 31 indicators, with 8 indicators for the management continuity dimen-sion (indicators 1-3, 4a-e, and 5-8), 12 indicators for the informational continuity dimension (indicators 1-12), and 11 indicators for the relational continuity dimension (indicators 1-11). In each dimension, a column was provided to accommodate other indicators considered essential by the experts, which were then ac-cumulated and used in the second round of Delphi. There were 4 additional indicators considered essential by the experts, including antenatal care such as prenatal exercises, danger signs and labor preparation, the role of husband and family in pregnancy, birth plan-ning, postpartum care and readiness for complications (indicators 13-15) for the informational continuity dimension, and cross-program collaboration (indicator 12) for the relational continuity dimension. In the second round of Delphi, out of 35 indicators, the cross-program collaboration indicator was considered non-essential by all experts. Finally, there are 34 indicators to assess the need midwifery care to improve the role of adolescent mothers. |
| 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 | 7 | There are no confounding factors in this study  |
| (*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 |  |  |
| Other analyses | 17 | Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses |  |  |
| Discussion |
| Key results | 18 | Summarise key results with reference to study objectives | 9 | This research highlights the importance of three interconnected components within midwifery care: Continuity of Management, Continuity of Information, and Continuity of Relationship. These components have been thoroughly examined and validated through the Delphi Method, with the participation of experts in midwifery and healthcare |
| 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 | 13 | Delphi Method also has limitations. It depends on the expertise of the involved experts and can produce results influenced by subjectivity. Achieving consensus is also not always easy and can be time-consuming. In this research, the Delphi Method appears to have successfully addressed most of these limitations, resulting in a strong framework for midwifery care |
| Interpretation | 20 | Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence |  | The Delphi Method has proven successful in identifying key components of midwifery care, Continuity of Information, and Continuity of Relationship. This is a significant strength of this method, allowing experts to reach a consensus on the essential elements of maternity care. Key components highlighted by this research include the assessment of both subjective and objective data, which form the basis for accurate diagnoses and issue identification. Comprehensive data collection, covering aspects such as medical history, family background, socio-cultural factors, and psychological aspects, contributes to providing personalized care tailored to individual needs.(Bradford BF, et al, 2022). Effective communication, encompassing both informational and emotional support, can strengthen the relationship between healthcare providers and patients, easing the challenges associated with first-time childbirth (Fakhraei R and Terrion JL, 2026). The needs assessment, as recommended by experts, encompasses critical topics such as gender equality, prevention of domestic violence, reproductive health, nutrition, behavioral risks like smoking and substance use, and comprehensive information about the pregnancy and childbirth process. (Powers ME, Takagishi J, 2021) However, it is important to note that the Delphi Method also has limitations. It depends on the expertise of the involved experts and can produce results influenced by subjectivity. Achieving consensus is also not always easy and can be time-consuming. In this re-search, the Delphi Method appears to have successfully addressed most of these limitations, resulting in a strong framework for midwife-ry care. |
| Generalisability | 21 | Discuss the generalisability (external validity) of the study results |  |  |
| 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 | 8 | No 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.**