

## Development of the HARMONI Holistic Midwifery Care Model Based on Interdisciplinary Interventions for Pregnant Women with High-Risk Pregnancy: A Descriptive Qualitative Study

Syamsuriyati<sup>1\*</sup>, Nusdin<sup>2</sup>, Nurul Fitri Sugiarti<sup>3</sup>, Syamsuar Manyullei<sup>4</sup>

<sup>1,2,3</sup> Faculty of Nursing and Midwifery, Megarezky University, INDONESIA

<sup>4</sup> Public Health Faculty, Hasanuddin University, INDONESIA

\*Corresponding Author: [syamsuriyatiahmad@gmail.com](mailto:syamsuriyatiahmad@gmail.com)

**Citation:** Syamsuriyati, Nusdin, Sugiarti, N. F. & Manyullei, S. (2025). Development of the HARMONI Holistic Midwifery Care Model Based on Interdisciplinary Interventions for Pregnant Women with High-Risk Pregnancy: A Descriptive Qualitative Study, *Journal of Cultural Analysis and Social Change*, 10(3), 2735-2743. <https://doi.org/10.64753/jcasc.v10i3.2829>

**Published:** December 04, 2025

### ABSTRACT

**Background:** High-risk pregnancy management is typically centered on a biomedical approach, often neglecting the psychological, social, spiritual, and nutritional aspects of the mother. Therefore, a comprehensive midwifery care model that includes interdisciplinary collaboration is necessary. This descriptive qualitative study was conducted in three phases which include (1) literature review following PRISMA guidelines, (2) Focus Group Discussion (FGD) with 10 participants, and (3) Expert Panel consisting of five experts. Data analysis applied a descriptive qualitative method with methodological triangulation to ensure the validity of the model. The literature review identified 5 relevant articles that present the integration of biopsychosocial and spiritual factors in high-risk pregnancy care. FGD uncovered five main themes, namely the experiences and holistic needs of high-risk pregnant women, family support and engagement, the physical focus of midwifery care, the significance of early detection and interprofessional collaboration, as well as the role of health workers in delivering holistic care. Furthermore, Expert Panel stressed the importance of enhancing interdisciplinary concepts, incorporating psychosocial and spiritual elements into clinical practice, and establishing guidelines for implementing the model. Based on these results, the HARMONI (Holistic, Active, Responsive, Multidisciplinary, Oriented, Nurturing, and Integrated) holistic midwifery care model was developed. The HARMONI Model introduced an innovative approach to holistic, interdisciplinary midwifery care for high-risk pregnant women. It aimed to enhance the quality of life for both mothers and fetuses by integrating bio-psycho-social-spiritual dimensions through collaborative interprofessional team efforts.

**Keywords:** Holistic Midwifery Care, Interdisciplinary Intervention, High-risk Pregnancy, HARMONI Model, Maternal Health

### INTRODUCTION

Pregnancy is a complex physiological process comprising anatomical, physiological, biochemical, and psychological changes that support fetal growth and prepare the mother's body for labor (Gangakhedkar & Kulkarni, 2021). According to WHO (2023), pregnancy, childbirth, and the postpartum period should be positive experiences for well-being of both mother and fetus. However, complications such as preeclampsia, gestational diabetes, anemia, and malnutrition remain major causes of maternal morbidity and mortality, with approximately 287,000 maternal deaths in 2020, mainly in low- and middle-income countries. In Indonesia, preeclampsia remains a leading cause of maternal death (WHO, 2023; Syairaji et al., 2024).

Preeclampsia is a complex multisystem disorder caused by placental hypoxia and endothelial dysfunction. It requires a care approach focused not only on blood pressure and proteinuria but also on psychological, social, spiritual, and nutritional factors (Torres et al., 2024; Bisson et al., 2023). Studies show that high-risk pregnant women frequently experience anxiety, depression, and psychological distress (Barragan et al., 2024; Barat et al., 2023).

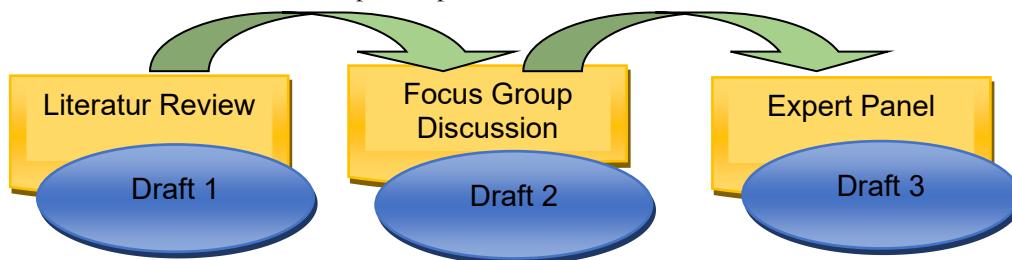
Interprofessional collaboration has been shown to enhance clinical outcomes and improve the quality of care (Gulbransen et al., 2024; Schulz & Wirtz, 2025). However, international models such as Midwife-Led Continuity of Care (Symon et al., 2016), Integrative Maternity Care (Cellissen et al., 2024), and Woman-Centered Holistic Models (Svana, 2023) have not explicitly incorporated biopsychosocial and spiritual dimensions (Adnani et al., 2025).

No comprehensive and interdisciplinary midwifery care model that incorporates biopsychosocial and spiritual aspects has been established in Indonesia. Therefore, this study introduces the HARMONI (Holistic, Active, Responsive, Multidisciplinary, Oriented, Nurturing, Integrated) model as an innovative approach to holistic midwifery care grounded in interdisciplinary interventions. The model emphasizes maintaining biopsychosocial and spiritual balance at its center and has the potential to contribute new knowledge to global midwifery development.

Due to the circumstances, this study aims to develop the HARMONI model as holistic midwifery care framework based on interdisciplinary interventions for high-risk pregnant women. It is designed to fill service gaps and enhance collaborative care system focused on maternal and fetal health.

## MATERIALS AND METHODS

The interdisciplinary HARMONI holistic midwifery care model was initially developed through three methodological stages, namely (1) literature review, (2) Focus Group Discussion (FGD), and (3) Expert Panel. Figure 1 shows the methodological framework, which reflects the flow, results of each stage, and the interconnections in the model development process.



**Figure 1.** Method flow of Model Development

The literature review was conducted following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Moher et al., 2009). FGD and Expert Panel were performed according to the Consolidated Criteria for Reporting Qualitative Research (COREQ) (Tong et al., 2007). Furthermore, the guidelines ensured transparency and methodological rigor, which improved the validity of the results.

The applied methodological triangulation enhanced the model's robustness and credibility by combining literature review results, stakeholder perspectives, and expert consensus. This method provided a comprehensive basis for creating the HARMONI holistic midwifery care model, grounded in interdisciplinary interventions.

## LITERATURE REVIEW

A literature review was conducted across three major databases, namely Science Direct, SCOPUS, and PUBMED. The keywords used were holistic midwifery care, interdisciplinary midwifery care, high-risk pregnancy, and interdisciplinary interventions for high-risk pregnant women. The search strategy was further refined with Boolean operators (AND, OR). This study focused on peer-reviewed articles in English, available in full text or as abstracts, published between 2020 and 2025.

Inclusion criteria comprised articles that: (1) developed a model of midwifery care or interprofessional collaborative interventions, (2) explored the experiences or perspectives of high-risk pregnant women, (3) focused on holistic approach covering physical, psychological, social, and spiritual aspects, and (4) addressed high-risk medical conditions such as hypertension during pregnancy. Articles that did not meet these criteria were excluded from the review.

The investigation process was conducted by N, and the results were uploaded to Rayyan.ai (Ouzzani et al., 2016). Two reviewers (S and N) conducted the screening independently, and any differences in decisions were resolved through team consensus. Selected articles were extracted using Microsoft Excel, focusing on the study profile, interdisciplinary approach, theoretical framework, and results relevant to the development of the HARMONI holistic midwifery care model.

### **Focus Group Discussion**

Following the synthesis of the literature review, FGD was held to explore health professionals' perspectives on holistic midwifery care model, the experiences of high-risk pregnant women, and the evaluation of current care practices. The discussion was conducted according to the guidelines of Akyildiz & Ahmed (2021). A purposive sampling method was adopted, as recommended by Campbell et al., (2020), to select participants most relevant to the study objectives.

The 10 participants included midwives, obstetricians, nutritionists, psychologists, and pregnant women with high-risk pregnancies. Selection was purposefully based on participation in midwifery services. The number of participants was determined by collecting sufficient data to ensure repeatability (Hennink, 2019). Two offline FGD were held at the two hospitals serving as study sites, each lasting approximately 2 hours. The entire process was recorded to ensure data accuracy. A team member served as the moderator, while two others took notes, capturing key points and developing follow-up questions based on the discussion dynamics.

### **Expert Panel**

Expert Panel was conducted to obtain critical feedback on the model concept developed from a literature review and FGD. Participants were selected through purposive sampling based on (1) a minimum of master's degree and (2) clinical experience in hospitals caring for high-risk pregnant women. The invited experts included members of Indonesian Midwives Association (IBI) and university academics specializing in midwifery services.

The panel session was conducted online through Zoom and lasted about 2 hours, facilitated by a moderator and two note-takers from the study team. Five experts participated, offering structured input on the model design and its key concepts. This process improved content validity and strengthened the conceptual foundation for developing the HARMONI holistic midwifery care model, based on interdisciplinary interventions.

### **Ethical Considerations**

This study received ethical approval from the Hasanuddin University Ethics Committee (Number: 1443/UN4.14.1/TP.01.02/2025). All FGD and Expert Panel participants received written and verbal explanations of the study objectives and voluntarily agreed to participate. Written informed consent was obtained from each participant, who had the right to withdraw at any time without consequence.

### **Data Analysis**

In this study, the data were analyzed using a descriptive qualitative approach proposed by Doyle et al., (2020). The approach was selected because it accommodated various data sources, including literature review, FGD, and Expert Panel, through a simple but comprehensive analysis process. This corresponded with the study objective of developing an initial model of holistic midwifery care for high-risk pregnant women, including collaboration across health disciplines.

The analysis was conducted systematically across several stages, namely data transcription, extraction, and coding of participant responses regarding the characteristics of holistic care model. Field notes were adopted to supplement the analysis. Similarities and differences in the results were identified to develop a coherent conceptual framework regarding interdisciplinarity in holistic midwifery care.

## **RESULT AND DISCUSSION**

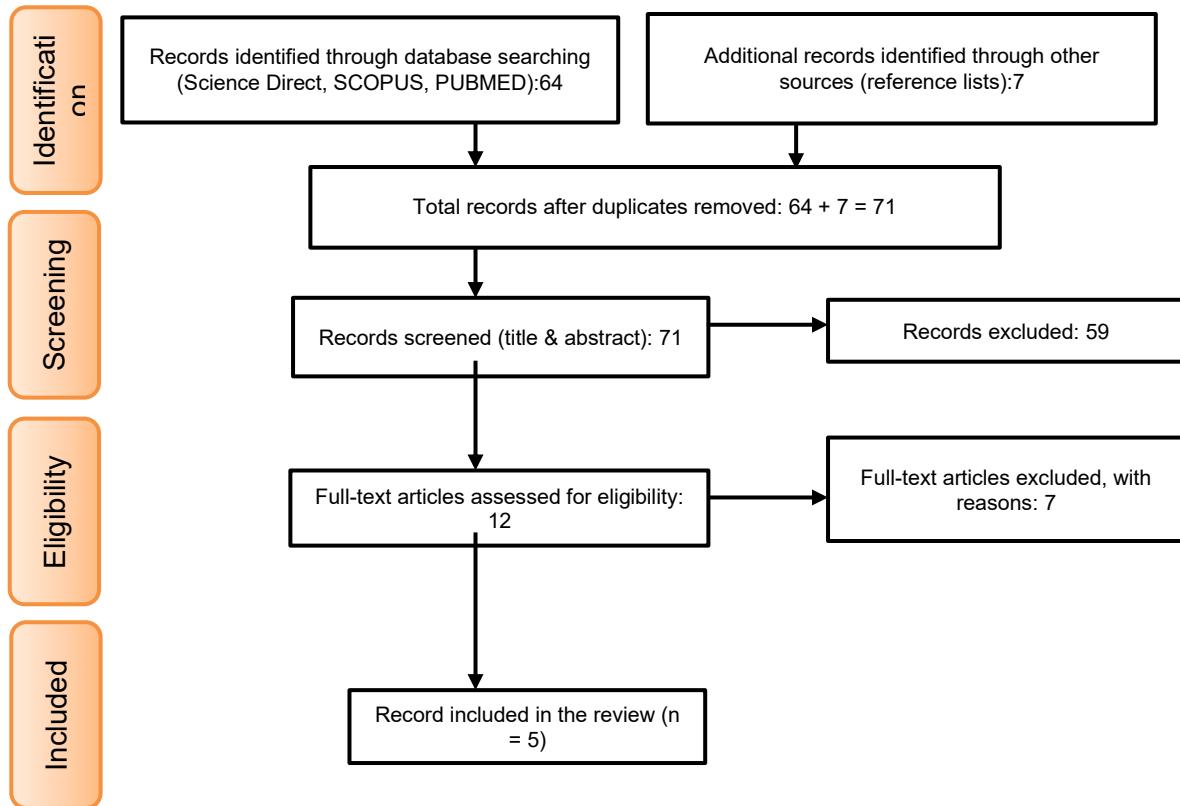
The results presented in this manuscript were relevant to the development of the interdisciplinary-based HARMONI holistic midwifery care model.

### **Literature Review**

#### **Search Outcome**

A literature search was conducted across three major databases, namely ScienceDirect, Scopus, and PubMed, using keywords related to holistic midwifery care, interdisciplinary interventions, and high-risk pregnancy. The search was limited to peer-reviewed articles published in English between 2020 and 2025. Among the 64 articles

identified, 7 were added through references from other studies. After screening for inclusion criteria, 12 were selected for full-text review, and 5 were included in the literature review, as detailed in Figure 2.



**Figure. 2** PRISMA Flow Diagram

### Overview of Included Articles

Table 1 summarizes 5 studies that served as the basis for developing the HARMONI holistic midwifery care model for high-risk pregnant women. All articles emphasized the importance of integrating the physical, psychological, social, and spiritual aspects of care into midwifery.

**Table 1.** A chronological summary of included studies

| Auth or (Year, Country)        | Study Design                      | Type of Intervention  | Outcome Measured  | Theory or Model             | Utilization of the Theory or Model   |
|--------------------------------|-----------------------------------|---|---|-----------------------------|--|
| Imanpour et al. (2023, Iran)   | Systematic Review & Meta-analysis | Nutritional Interventions (calcium supplementation, Mediterranean diet) | Gestational hypertension (GH) and preeclampsia (PE) incidence | Biopsychosocial Model       | Using biopsychosocial models to evaluate the effects of nutritional interventions on pregnancy complications by linking biological and psychosocial factors. |
| Schulz & Wirtz (2025, Germany) | Cross-sectional study             | Interprofessional collaboration in obstetrics and midwifery             | Quality of care, communication between professionals          | Collaborative Model of Care | Collaborating with professionals to improve the quality of care for high-risk pregnant women through better communication.                                   |
| Chang et al. (2023, China)     | Review & Cohort Study             | Low-dose aspirin and calcium supplementation                            | Incidence of preeclampsia, hypertension                       | Medical Intervention Model  | Using a medical intervention model to assess the effects of aspirin and calcium on preeclampsia and gestational hypertension.                                |
| Tanrikulu et al.               | Randomized                        | Family support program based on nurse-                                  | Caregiver burden, maternal                                    | Family-Centered Care Model  | Utilizing a family-based care model to reduce the caregiving burden and  |

|                                      |                                   |   |   |   |  |
|--------------------------------------|-----------------------------------|---|---|---|--|
| (2023, Turkey)                       | Controlled Pilot Trial            | led case management                                 | anxiety, and caregiver health outcomes                              |   | enhance the well-being of pregnant women and their families.   |
| Hulsbosch et al. (2023, Netherlands) | Randomized Controlled Trial (RCT) | Online mindfulness-based intervention (self-guided) | Pregnancy distress, mindfulness skills, rumination, self-compassion | MBSR, MBCT, RICH Model of Mindfulness Effects | Implementing an online mindfulness intervention based on MBSR/MBCT theory to enhance mindfulness skills, reduce rumination, increase self-compassion, and potentially lower distress during pregnancy. |

Imanpour et al., (2023) stated that nutritional interventions, such as calcium supplementation, lowered the risk of gestational hypertension and preeclampsia, supporting holistic approach. Schulz & Wirtz, (2025) outlined the effectiveness of interprofessional collaboration between physicians, midwives, and nurses in enhancing care quality for high-risk pregnant women. Chang et al., (2023) observed that medical interventions such as aspirin and calcium administration helped prevent pregnancy complications, reinforcing the medical component of holistic model. Tanrikulu & Dikmen, (2023) stressed the importance of nurse-led family support in reducing maternal anxiety, while Hulsbosch et al., (2023) showed that mindfulness interventions effectively decreased psychological distress. Collectively, these studies reinforce the biopsychosocial and spiritual dimensions that underpin the HARMONI model.

### Theory and Model

The results of literature review showed that the development of the HARMONI holistic midwifery care model was grounded in several key theories. Biopsychosocial Model emphasized the importance of integrating biological, psychological, and social factors in maternal health, which is central to the HARMONI holistic approach. Collaborative Model of Care presents interprofessional collaboration to improve service quality, in line with the interdisciplinary principles.

Medical Intervention Model supports the medical dimension through interventions such as administering aspirin and calcium to prevent complications. Family-Centered Care Model underscores the crucial role of family engagement as a social support for high-risk pregnant women. Meanwhile, Mindfulness-Based Stress Reduction (MBSR) and Mindfulness-Based Cognitive Therapy (MBCT) show the role of psychological interventions in reducing anxiety and stress. Collectively, these theories form the conceptual foundation of the HARMONI model, which integrated biological, psychological, social, and spiritual dimensions into holistic midwifery care.

### Focus Group Discussion

Thematic analysis was conducted on FGD engaging 10 informants who shared experiences, obstacles, and hopes in implementing holistic midwifery care. Participants with high-risk pregnancies reported experiencing frequent physical complaints during pregnancy, such as headaches, dizziness, and neck tension, alongside anxiety about high blood pressure and its impact on the fetus. The need for emotional and spiritual support was emphasized, as presented below:

“I often experience headaches, dizziness, and neck tension. Anxiety occurs when my blood pressure is high.” (A)

“In addition to the medication prescribed by my doctor, I also need support from my family, specifically my husband, and prayers from healthcare workers.” (S)

High-risk pregnant women also expressed appreciation for family support, both physical and emotional:

“Every time I go for a check-up at the hospital, my husband always accompanies me.” (S)

“My husband also reminds me to schedule check-ups and take my medication as prescribed by the doctor.” (A)

Midwife participants stated that midwifery services tended to focus on physical examinations, such as blood pressure measurements and screening for signs of preeclampsia, while psychological assessments were not routinely performed:

“Usually, we focus on the physical examination, but the psychological aspects was not assessed because they are not considered an emergency.” (P, A, D)

Obstetrician-gynecologist specialists emphasized the importance of early detection of potential high-risk pregnancy complications and collaboration among various professionals to provide comprehensive care:

“Many pregnant women with preeclampsia come in already with symptoms because they are not screened early.” (S)

“Other professionals are need because doctors focus more on the physical aspects, while psychosocial and nutritional aspects should be handled by the respective fields.” (N)

Nutritionists and psychologists outlined the importance of interdisciplinary healthcare professionals in delivering holistic care:

"So far, referrals to the nutrition department have been routinely provided, but services from clergy and psychological counseling have not been optimal." (U, J)

### Expert Panel

Expert Panel was convened to validate and enhance the initial concept of the HARMONI holistic midwifery care model, which was developed from a literature review and FGD. The panel comprised five experts, including academics and midwifery practitioners from professional organizations and universities, all holding a minimum of master's degree and possess clinical experience with high-risk pregnant women. The discussion identified three main themes, namely (1) strengthening the interdisciplinary approach, (2) integrating psychosocial and spiritual aspects into clinical practice, and (3) the need for implementation guidelines for the model.

"Collaboration is not just coordination, but active synergy between professionals in planning and evaluating care." (P1, P2)

"Spiritual and psychosocial approaches should be incorporated as part of standard care, not an optional addition." (P3, P4)

"This model is promising, but requires practical guidelines to enable field implementation by an interprofessional team." (P5).

### Conceptual Framework of the Harmoni Holistic Midwifery Care Model

The HARMONI holistic midwifery care model was developed based on a review of existing literature and FGD. The conceptual framework of the model is presented in Figure 3:

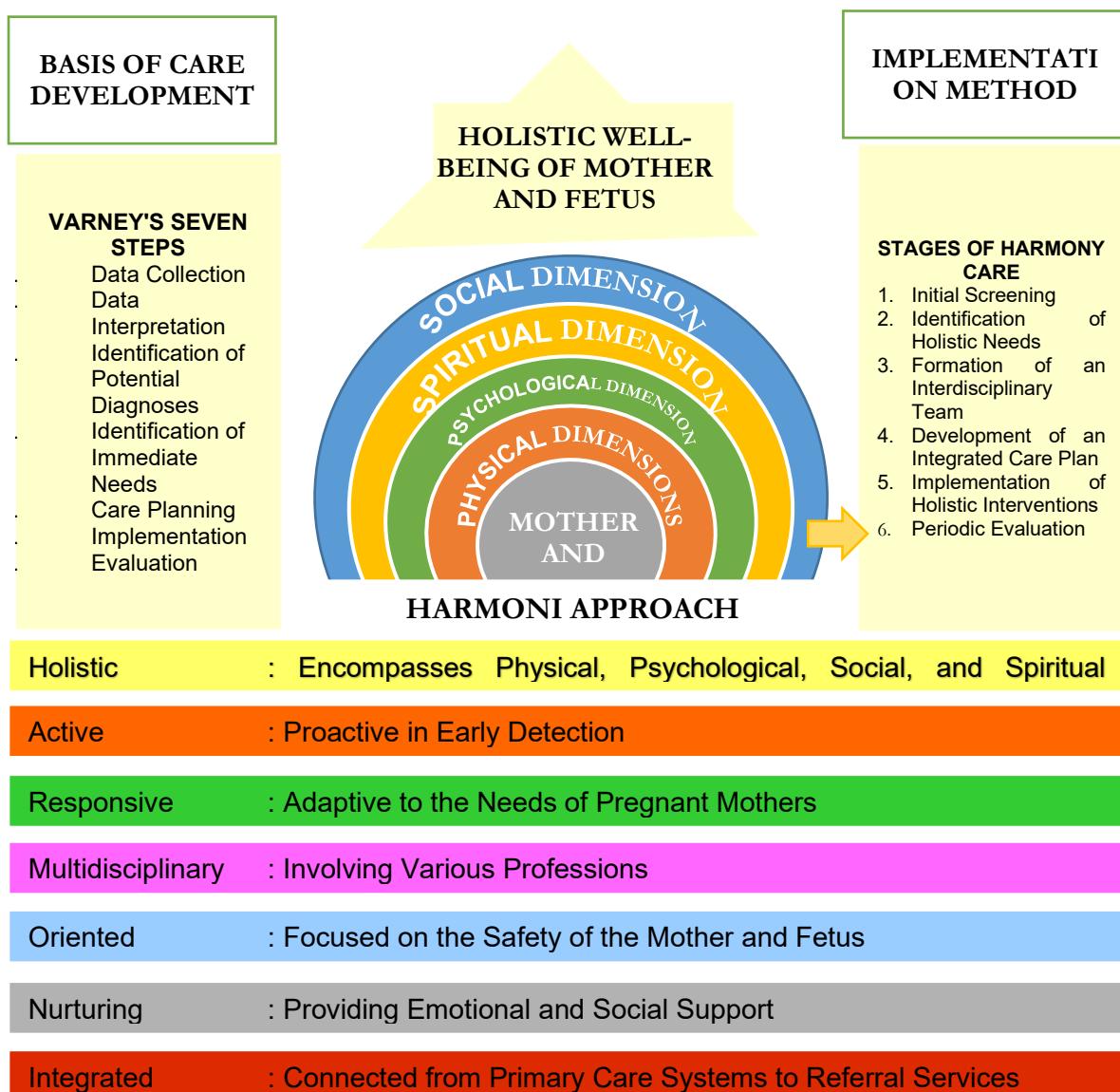


Figure 3. Conceptual Framework of the HARMONI Holistic Midwifery Care Model

The HARMONI model incorporates Varney's seven steps of Midwifery Care (King et al., 2019) as its foundation, alongside six phases of implementation. These include early screening, assessment of holistic needs, formation of an interdisciplinary team, integrated care planning, delivery of holistic interventions, and ongoing evaluation. At its core, the model emphasizes holistic well-being of both mother and fetus through multidimensional integration that covers physical, psychological, social, and spiritual aspects. The acronym "HARMONI" stands for the primary principles, namely Holistic, Active, Responsive, Multidisciplinary, Oriented, Nurturing, and Integrated, which reflect a proactive, collaborative, and empathetic care framework.

## LIMITATION

The HARMONI holistic midwifery care model, developed based on interdisciplinary interventions, is primarily aimed at high-risk pregnant women, specifically those with preeclampsia. In this study, all informants were Indonesian, hence, the applicability of the HARMONI model beyond Indonesia cannot be confirmed.

## DISCUSSION

Midwifery care for high-risk pregnancies still prioritizes medical interventions as the main management strategy. This model effectively reduces acute morbidity and mortality. The results showed an exclusive biomedical focus often overlooked psychosocial, spiritual, and nutritional needs which affect antenatal compliance, anxiety levels, and maternal quality of life. These reports support Sandall et al (2004), who emphasized the importance of midwifery continuity of care and a woman-centered approach for improving the maternal experience and family engagement.

Integrating evidence-based measures like low-dose aspirin and calcium with non-medical strategies reduces obstetric complications and strengthens maternal coping (Chen & Sun, 2023). The HARMONI model unites these through a care package combining nutrition, psychosocial, and spiritual support. Mindfulness, brief counseling, and telehealth help ease pregnancy distress and build resilience. Task-sharing, where midwives or trained workers provide support and nutrition education under supervision, enhances efficiency (Hulbosch et al., 2023).

The model relies on interprofessional collaboration, clear roles, and structured referrals, supported by institutional commitment and cross-disciplinary training (Schulz & Wirtz, 2025). Pilot testing its effects on preeclampsia, nutrition, anxiety, and quality of life is needed before broader use in Indonesian midwifery care.

## CONCLUSION

In conclusion, this study developed the HARMONI holistic midwifery care model, which was based on interdisciplinary interventions for high-risk pregnant women. The model integrates biological, psychological, social, spiritual, and nutritional dimensions through interprofessional collaboration to provide comprehensive services. The results from literature review, FGD, and Expert Panel suggest that the HARMONI has the potential to become an innovative midwifery service focused on maternal and fetal safety and enhancing quality of life. Further implementation trials are necessary to evaluate the effectiveness and sustainability of the model across various healthcare settings.

## ACKNOWLEDGMENTS

The authors are grateful to all participants in FGD and Expert Panel for the time and for sharing experiences and expertise. The authors are also grateful to the study partner hospitals and Hasanuddin University for the administrative and ethical support in conducting this study.

### Financial Support and Sponsorship

This study was funded by the Ministry of Higher Education, Science, and Technology of Indonesian government.

### Conflicting Interest

The authors declared no conflicts of interest that could affect the results, interpretation, or reporting of this study.

## REFERENCE

Adnani, Q. E. S., Nurfitriyani, E., Merida, Y., Khuzaiyah, Si., Okinarum, G. Y., Susanti, A. I., Hashim, V. A. A. and, & Haji, S. (2025). Ninety-one years of midwifery countinity of care ini Low and Middele-income countries: Ac. *BMC Health Services Reserach*.

Akyildiz, S. T., & Ahmed, K. H. (2021). An Overview of Qualitative Research and Focus Group Discussion. *International Journal of Academic Research in Education*, 7(1), 1–15. <https://doi.org/10.17985/ijare.866762>

Barat, S., Ghanbarpour, A., Mirtabar, S. M., Kheirkhah, F., Basirat, Z., Shirafkan, H., Hamidia, A., Khorshidian, F., Hosseini Talari, D., Pahlavan, Z., Esmaelzadeh, S., Buzari, Z., Zeynalzadeh, M., Charati, S. Y., Shafizade, F., Adnani, M., Amirkhanloo, F., Mollaalipour, M., kani, A. C., ... Faramarzi, M. (2023). Psychological distress in pregnancy and postpartum: a cross-sectional study of Babol pregnancy mental health registry. *BMC Pregnancy and Childbirth*, 23(1), 1–10. <https://doi.org/10.1186/s12884-023-06024-3>

Barragan, M. J., Falguera-Puig, G., Curto-Garcia, J. J., Monistrol, O., Coll-Navarro, E., Tarragó-Grimal, M., Ezquerro-Rodriguez, O., Ruiz, A. C., Codina-Capella, L., Urquiza, X., & Pino Gutierrez, A. del. (2024). Prevalence of anxiety and depression and their associated risk factors throughout pregnancy and postpartum: a prospective cross-sectional descriptive multicentred study. *BMC Pregnancy and Childbirth*, 24(1), 1–14. <https://doi.org/10.1186/s12884-024-06695-6>

Bisson, C., Dautel, S., Patel, E., Suresh, S., Dauer, P., & Rana, S. (2023). Preeclampsia pathophysiology and adverse outcomes during pregnancy and postpartum. *Frontiers in Medicine*, 10(March), 1–10. <https://doi.org/10.3389/fmed.2023.1144170>

Campbell, S., Greenwood, M., Prior, S., Shearer, T., Walkem, K., Young, S., Bywaters, D., & Walker, K. (2020). Purposive sampling: complex or simple? Research case examples. *Journal of Research in Nursing*, 25(8), 652–661. <https://doi.org/10.1177/1744987120927206>

Cellissen, E., van Zelm, R., Hendrix, M., Wildschut, H. I. J., & Nieuwenhuijze, M. (2024). Integrated maternity care: A concept analysis. *PLoS ONE*, 19(8 August), 1–18. <https://doi.org/10.1371/journal.pone.0306979>

Chang, K. J., Seow, K. M., & Chen, K. H. (2023). Preeclampsia: Recent Advances in Predicting, Preventing, and Managing the Maternal and Fetal Life-Threatening Condition. *International Journal of Environmental Research and Public Health*, 20(4). <https://doi.org/10.3390/ijerph20042994>

Chen, W. Y., & Sun, S. F. (2023). Clinical efficacy of low-dose aspirin combined with calcium in preventing preeclampsia: A systematic review and meta-analysis. *Medicine (United States)*, 102(34), E34620. <https://doi.org/10.1097/MD.00000000000034620>

Doyle, L., McCabe, C., Keogh, B., Brady, A., & McCann, M. (2020). An overview of the qualitative descriptive design within nursing research. *Journal of Research in Nursing*, 25(5), 443–455. <https://doi.org/10.1177/1744987119880234>

Gangakhedkar, G. R., & Kulkarni, A. P. (2021). Physiological PregnancyChanges in. *Indian Journal of Critical Care Medicine*, 25(S3), S189–S192.

Gulbransen, K., Thiessen, K., Ford, N., Beck, W. P., Watson, H., & Gregory, P. (2024). Interprofessional Care Models for Pregnant and Early-Parenting Persons Who Use Substances: A Scoping Review. *International Journal of Integrated Care*, 24(2), 1–14. <https://doi.org/10.5334/ijic.7589>

Hennink, M. M. (2019). What Influences Saturation? Estimating Sample Sizes in Focus Group Research. *Qualitative Health Research*, 29(10), 139–148. <https://doi.org/10.1177/1049732318821692.What>

Hulbosch, L. P., Potharst, E. S., Schwabe, I., Boekhorst, M. G. B. M., Pop, V. J. M., & Nyklíček, I. (2023). Online mindfulness-based intervention for women with pregnancy distress: A randomized controlled trial. *Journal of Affective Disorders*, 332(March), 262–272. <https://doi.org/10.1016/j.jad.2023.04.009>

Imanpour, V., Khoshhali, M., Goodarzi-Khoigani, M., & Kelishadi, R. (2023). Systematic review and meta-analysis of nutritional interventions to prevent of gestational hypertension or/and preeclampsia among healthy pregnant women. *Journal of Research in Medical Sciences*, 28(1). [https://doi.org/10.4103/jrms.jrms\\_89\\_22](https://doi.org/10.4103/jrms.jrms_89_22)

King, T. ., Brucker, M. ., Jevit, C., & Kathryn, O. (2019). *Varney's Midwifery* (Sixth edit). Jones & Bartlett Learning.

Moher, D., Liberati, A., Tetzlaff, J., Altman, D. G., Antes, G., Atkins, D., Barbour, V., Barrowman, N., Berlin, J. A., Clark, J., Clarke, M., Cook, D., D'Amico, R., Deeks, J. J., Devreaux, P. J., Dickersin, K., Egger, M., Ernst, E., Götzsche, P. C., ... Tugwell, P. (2009). Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement. *PLoS Medicine*, 6(7). <https://doi.org/10.1371/journal.pmed.1000097>

Ouzzani, M., Hammady, H., Fedorowicz, Z., & Elmagarmid, A. (2016). Rayyan-a web and mobile app for systematic reviews. *Systematic Reviews*, 5(1), 1–10. <https://doi.org/10.1186/s13643-016-0384-4>

Sandall, Soltani, H., Gales, S., Shennan, A., & Devane, D. (2004). Midwifery-led versus other models of care delivery for childbearing women. *Cochrane Database of Systematic Reviews*. <https://doi.org/10.1002/14651858.cd004667>

Schulz, A. A., & Wirtz, M. A. (2025). Interprofessional Collaboration in Obstetric and Midwifery Care—Multigroup Comparison of Midwives’ and Physicians’ Perspective. *Healthcare*, 13(15), 1798. <https://doi.org/10.3390/healthcare13151798>

Svana, L. (2023). Midwifery Models of Care: Empowering Women through Holistic and Woman-Centered Approaches. *International Research Journal of Nursing and Midwifery*, 12(4), 23. <https://doi.org/10.14303/2315-568X.2022.62>

Syairaji, M., Nurdianti, D. S., Wiratama, B. S., Prüst, Z. D., Bloemenkamp, K. W. M., & Verschueren, K. J. C. (2024). Trends and causes of maternal mortality in Indonesia: a systematic review. *BMC Pregnancy and Childbirth*, 24(1), 1–14. <https://doi.org/10.1186/s12884-024-06687-6>

Symon, A., Pringle, J., Cheyne, H., Downe, S., Hundley, V., Lee, E., Lynn, F., McFadden, A., McNeill, J., Renfrew, M. J., Ross-Davie, M., van Teijlingen, E., Whitford, H., & Alderdice, F. (2016). Midwifery-led antenatal care models: Mapping a systematic review to an evidence-based quality framework to identify key components and characteristics of care. *BMC Pregnancy and Childbirth*, 16(1). <https://doi.org/10.1186/s12884-016-0944-6>

Tanrikulu, F., & Dikmen, Y. (2023). The effect on home caregivers of a family support program based on a nurse-led case management model: A randomized controlled pilot trial. *Home Health Care Management & Practice. Home Health Care Management & Practice*. <https://doi.org/10.1177/10848223231205200>

Tong, A., Sainsbury, P., & Craig, J. (2007). Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care*, 19(6). <https://doi.org/https://doi.org/10.1093/intqhc/mzm042>

Torres, J., Espino-y-Sosa, S., Martinez-Portilla, R., Borboa-Olivares, H., Estrada-Gutierrez, G., Acevedo-Gallegos, S., Ruiz-Ramirez, E., Velasco-Espin, M., Cerdá-Flores, P., Ramirez-Gonzalez, A., & Rojas-Zepeda, L. (2024). A Narrative Review on the Pathophysiology of Preeclampsia. *International Journal of Molecular Sciences*, 25(14), 1–24. <https://doi.org/10.3390/ijms25147569>

WHO. (2023). *Maternal health*. [https://www.who.int/maternal\\_child\\_adolescent/maternal/en/](https://www.who.int/maternal_child_adolescent/maternal/en/)