



RESEARCH ARTICLE

The Landscape of Maternal Health Service in Indonesia: A Narrative Review of Antenatal and Postnatal Services

Khumaira^{1*}, Wahiduddin², Ida Leida Maria³, Ansariadi⁴, Darmawansyah⁵, Apik Indarty Moedjiono⁶^{1,2,3,4,5,6} Department of Epidemiology, Faculty of Public Health, Hasanuddin University, Indonesia**ARTICLE INFO**

Received: Sep 18, 2024

Accepted: Nov 21, 2024

Keywords

Maternal

Health Service

Indonesia

Antenatal and Postnatal Services

***Corresponding Author:**

kehumaira95@gmail.com

ABSTRACT

Maternal and child health remains a significant public health challenge in Indonesia, with high maternal and infant mortality rates and widespread undernutrition. Persistent socio-economic and geographic disparities, particularly in rural and underserved areas, exacerbate these issues. Addressing these challenges requires equitable access to high-quality maternal health services, emphasizing antenatal care (ANC), postnatal care (PNC), and integrated nutrition counseling.

This review aims to analyze the landscape of ANC and PNC services in Indonesia, focusing on factors affecting access, policy implementation, service integration, and the role of nutrition counseling in maternal health services.

A systematic search of Google Scholar and PubMed databases identified 2,680 studies, which were screened based on inclusion and exclusion criteria. Following title and abstract screening, 23 studies underwent full-text review, and 15 studies were included in the final analysis. Data were synthesized thematically, focusing on access, policy challenges, integration of services, and nutrition counseling.

The review identified significant barriers to accessing ANC and PNC services, particularly in rural areas, due to geographic, financial, and infrastructural limitations. Policy initiatives such as the National Health Insurance (JKN) have improved access, but gaps in implementation persist. Integration of nutrition counseling into maternal health services was associated with improved maternal and child health outcomes, although its delivery is inconsistent, particularly in underserved areas. The continuum of care model demonstrated substantial benefits for maternal and neonatal health but revealed gaps in service continuity across different stages of care.

Addressing barriers to access, strengthening policy implementation, and integrating nutrition counseling into ANC and PNC services are critical for improving maternal and child health outcomes in Indonesia. Expanding outreach, leveraging digital health tools, and ensuring service continuity are essential steps toward achieving equitable and high-quality maternal health services aligned with Sustainable Development Goals.

INTRODUCTION

Indonesia, one of the most populous countries globally, with a population exceeding 280 million, continues to face significant public health challenges in reducing maternal and infant mortality rates

and addressing undernutrition[1]. The country's vast geographic diversity and socio-economic disparities exacerbate these issues, particularly impacting rural and less-developed areas. These persistent challenges have elevated maternal and child health to national priority status within Indonesia's healthcare system.

In 2020, Indonesia recorded a maternal mortality ratio of 177 per 100,000 live births, making it the fourth highest in Southeast Asia [2]. This rate is significantly higher than those of neighboring countries with similar levels of economic development, underscoring the need for targeted interventions in maternal health. High mortality rates are frequently linked to delays in healthcare access, limited service quality, and inadequate facilities, especially in rural and remote regions.

In 2022, the national prevalence of stunting among children under five was 21.6%, though rates vary significantly across regions [3]. For instance, East Nusa Tenggara has one of the highest prevalence rates, while Jakarta records notably lower levels, illustrating the extent of regional disparities.

Achieving equitable access to high-quality maternal health services is essential to improving maternal and child health outcomes. Integrated maternal health services, which provide a continuum of care from the antenatal to postnatal stages, address multiple dimensions of maternal and child health, including skilled birth attendance, newborn care, and nutrition counseling. This integrated approach is vital for addressing Indonesia's maternal and child health challenges and advancing towards sustainable health improvements nationwide.

In maternal health, integrated care encompasses the provision of coordinated services across the continuum from pregnancy through the postpartum period. This model is essential for meeting the unique health needs of mothers and infants at each stage, from the initial antenatal visits through to postnatal follow-ups. The continuum of care in maternal health services spans three critical periods: antenatal, intrapartum, and postpartum. Each of these stages presents distinct healthcare needs and risks, necessitating a range of interventions from routine check-ups and screenings to specialized care, including skilled birth attendance and emergency obstetric services.

The continuum of care model in maternal health offers numerous benefits. It ensures that healthcare interventions build upon one another, supporting maternal and infant health holistically. For instance, mothers who receive regular antenatal care are more likely to be prepared for childbirth and seek timely postnatal support, reducing the risk of complications. This model also facilitates early intervention, allowing issues identified during antenatal care to be managed proactively, improving outcomes during labor and delivery. Additionally, the continuum of care fosters trust and engagement, as mothers receive care from familiar providers, enhancing adherence to recommended health practices.

This review aims to analyze the landscape of antenatal care (ANC) and postnatal care (PNC) services in Indonesia, with a specific focus on factors affecting access, challenges in policy implementation, and the integration of services. By examining the current state of maternal health services in Indonesia, this review seeks to identify key areas where integrated ANC and PNC services can be strengthened to support a robust continuum of care. Addressing these factors is essential for improving maternal and child health outcomes and achieving equitable access to high-quality maternal healthcare across the country.

METHODS

Search Strategy

This narrative review utilized Google Scholar and PubMed databases to identify relevant literature on Maternal Health Services (MHS) in Indonesia. These databases were selected due to their extensive coverage of academic and policy literature pertinent to maternal and child health. The search was conducted using specific keywords and Boolean operators to ensure a focused and

comprehensive search. The primary keywords included "maternal health services" AND Indonesia AND ("antenatal care" OR "postnatal care") AND "nutrition counseling". Boolean operators (AND, OR) were applied strategically to refine the search, linking specific terms to capture studies addressing various aspects of maternal health services, including antenatal and postnatal care, and integrated nutrition counseling in the Indonesian context.

Eligibility Criteria and Study Selection

Studies were included if they specifically examined maternal health services in Indonesia, were published in English, and had been published within the last five years. The types of studies eligible for inclusion were primary research studies, systematic reviews, policy reports, and government publications directly relevant to antenatal care (ANC), postnatal care (PNC), and integrated maternal health services.

Studies were excluded if the full text was unavailable or if the study did not address ANC, PNC, nutrition counseling, or the integrated maternal healthcare continuum. This approach ensured that only the most relevant and accessible studies were selected to provide a comprehensive view of maternal health services in Indonesia.

Data Extraction

Relevant data from each selected study were extracted, including key findings, study design, sample size, methodologies, and main outcomes. A thematic approach was used to synthesize the findings, grouping studies under major themes, including factors affecting access to services, policy implementation challenges, and service integration. This approach provided a comprehensive view of the current state of maternal health services in Indonesia, aligned with the continuum of care model.

RESULTS

A total of 2,680 studies were initially identified through the search process across Google Scholar and PubMed. After removing duplicates and irrelevant studies, 162 studies remained for further screening. Following a thorough review of the titles and abstracts, 23 studies were selected for full-text review based on their relevance to the research objectives. After applying the eligibility criteria and performing an in-depth evaluation, 13 studies were included in the final analysis.

The selected studies covered a wide range of topics related to antenatal care (ANC), postnatal care (PNC), and integrated maternal health services in Indonesia, with a focus on key factors such as access to services, policy implementation, service integration, and nutrition counseling. Table 1 provides a summary of the 13 studies included in the final analysis, detailing key characteristics such as study design, sample size, region of focus within Indonesia, and the specific aspects of ANC, PNC, and integrated maternal health services addressed. This table facilitates an at-a-glance comparison of the studies and highlights the main themes explored across the selected literature.

Table 1. Characteristics of studies included in the narrative review of maternal health services in Indonesia

Author, year	Study Design	Sample Size	Region / Province	Key Focus	Main Outcome
Andriani, 2021	Cross-sectional	15,288 mothers	Nationwide	ANC and SBA	Continuity of service utilization is associated with age, reproductive status, family

					influence and accessibility-related factors.
Anindya, 2020	Cross-sectional	5,429 Mothers	Nationwide	Health insurance (JKN) impact on ANC and PNC access	Improved access due to JKN
Aryastami, 2023	Cross-sectional	70,787 mothers	Nationwide	Maternal health service utilization, regional disparities	Urban vs. rural care access, education and insurance impact on optimal care utilization
Azhar, 2020	Cross-sectional	6790 mothers	Nationwide	Pregnancy classes, ANC and PNC attendance	Increased facility-based deliveries
Ekawati, 2023	Systematic review	12 studies	National and international guidelines	Maternal health policy effectiveness post-COVID	Policy gaps, recommendations for improvement
Helmyati, 2022	Implementation research	304 districts, 21 partner universities	Nationwide	Impact of COVID-19 on maternal health services	Service improvement by applied system
Noor, 2022	Cross-sectional	1218 toddlers	South Kalimantan	Maternal health utilization	Maternal health utilization related to stunting prevention
Palimbo, 2021	Systematic review	16 articles	International	Continuity of care in ANC and PNC	Quality of service is determined by the psychological comfort of women.
Rahmawati & Hsieh, 2024	Cross-sectional	29083	Nationwide	Impact of health insurance (JKN) on maternal health service utilization	Universal health coverage reduce financial barriers and Improved access to care

Rammohan, 2024	Cross-sectional	23574 children	Nationwide	Continuum of Care coverage	Socioeconomic characteristics related to declining coverage of care
Rizkianti, 2020	Cross-sectional	3435 mothers	Nationwide	Women's autonomy and ANC utilization	Impact of autonomy on healthcare access
Syafriyanti, 2024	Qualitative study	8 informants	Lampung	Policy implementation of ANC services	Policy effectiveness. Service gaps
Yuniarti, 2024	Cross-sectional	37 mothers	Magetan	Factors influencing ANC uptake	Knowledge, motivation, ANC utilization

DISCUSSION

This narrative review highlights the landscape of ANC and PNC services in Indonesia, identifying key factors influencing access, policy implementation, service integration, and the inclusion of nutrition counseling. The findings reveal several significant challenges in achieving equal and effective maternal health services while also presenting opportunities for improvement through integrated care approaches.

Accessibility of Maternal Health Services

Access to maternal health services in Indonesia is influenced by geographic, financial, and socio-economic barriers. Aryastami (2023) revealed significant disparities in maternal health service utilization between urban and rural areas, with urban mothers three times more likely to receive optimal care[4]. Rizkianti (2020) similarly highlighted that women's autonomy and decision-making capabilities significantly impact their access to ANC[5]. The findings of Noor (2022) and Anindya (2020) further underscore the role of health insurance (JKN) in reducing financial barriers, although gaps in coverage and awareness remain challenges[6], [7].

Mothers in underserved regions continue to face logistical barriers, as evidenced by Andriani (2021), who noted a lack of adequate transportation and health facilities in rural areas[8]. Azhar (2020) demonstrated that pregnancy classes increased facility-based deliveries, suggesting that community-focused interventions can play a significant role in improving access[9].

Policy Implementation and Challenges

The implementation of maternal health policies in Indonesia has achieved mixed results. Studies like Rahmawati and Hsieh (2024) and Ekawati (2023) highlighted improvements in service delivery through JKN and other national initiatives but identified critical gaps in infrastructure and personnel[10], [11]. Syafriyanti (2024) emphasized the variability in policy execution across districts, with some regions lacking the resources or capacity to implement ANC guidelines effectively[12].

The impact of the COVID-19 pandemic on maternal health services was also a recurring theme. Helmyati (2022) described how the pandemic disrupted ANC and PNC services but also illustrated the potential of digital health tools and real-time monitoring systems to mitigate service interruptions. Such innovations can strengthen policy execution and responsiveness during crises.

Integration of Nutrition Counseling

Nutrition counseling plays a crucial role in addressing maternal and child health issues, including stunting and malnutrition. Noor (2022) highlighted the importance of integrating nutrition counseling into ANC and PNC services[6]. However, several studies noted inconsistencies in its implementation. Cultural barriers, health literacy, and a lack of trained personnel hinder effective delivery, particularly in remote areas. The study by Yuniarti (2024) demonstrated that motivation and knowledge significantly influence ANC uptake, suggesting that nutrition counseling efforts must be paired with education campaigns to maximize impact[13].

Continuum of Care and Service Integration

The continuum of care model is vital for improving maternal and neonatal health outcomes. Studies like Rammohan (2024) and Palimbo (2021) highlighted the benefits of integrated maternal health services, which ensure consistent care from pregnancy through the postnatal period[14], [15]. However, Andriani (2022) and Aryastami (2021) revealed gaps in service continuity, particularly for women transitioning between ANC and PNC services in rural areas[4], [8].

Efforts to enhance the continuum of care should focus on bridging these gaps through innovative solutions like mobile health units and community health workers. Helmyati (2022) illustrated how real-time monitoring systems could improve care continuity, while Azhar (2020) emphasized the importance of group-based interventions like pregnancy classes in fostering community-level engagement[9], [16].

CONCLUSION

This review underscores the critical need to address the barriers and gaps in maternal health services in Indonesia. Key challenges identified include limited access to antenatal care (ANC) and postnatal care (PNC), particularly for rural and underserved populations, along with persistent disparities driven by geographic, financial, and systemic factors. While policy initiatives such as the National Health Insurance (JKN) have improved access, gaps in implementation and resource allocation continue to limit their effectiveness. The integration of nutrition counseling into ANC and PNC services is vital for addressing undernutrition and stunting, but challenges such as limited health literacy, insufficient trained personnel, and inconsistent program delivery hinder its impact. Additionally, gaps in the continuum of care, particularly between antenatal and postnatal phases, underscore the need for better integration and coordination of maternal health services.

AUTHORS' CONTRIBUTIONS

K was responsible for the study design, data collection, and data analysis, and also took the lead in writing the manuscript.

W contributed to the study design and provided critical review and revisions to the manuscript.

ILM was involved in the study design and played a key role in reviewing and refining the manuscript.

A contributed by providing thorough reviews and constructive feedback on the manuscript.

D assisted in data analysis and also contributed to the review process, ensuring the accuracy and integrity of the data presented.

AIM provided valuable insights during the review process, helping to refine and enhance the quality of the manuscript.

ACKNOWLEDGEMENT

None declared

REFERENCES

- [1] Badan Pusat Statistik – Indonesian Central Statistical Institute, 2024.
- [2] M. Syairaji, D. S. Nurdiati, B. S. Wiratama, Z. D. Prüst, K. W. M. Bloemenkamp, and K. J. C. Verschueren, “Trends and causes of maternal mortality in Indonesia: a systematic review,” *BMC Pregnancy Childbirth*, vol. 24, no. 1, Dec. 2024, doi: 10.1186/s12884-024-06687-6.
- [3] S. L. Munira, “Survei Status Gizi Indonesia 2022,” Jakarta, Feb. 2022.
- [4] N. K. Aryastami and R. Mubasyiroh, “Optimal utilization of maternal health service in Indonesia: a cross-sectional study of Riskesdas 2018,” *BMJ Open*, vol. 13, no. 9, Sep. 2023, doi: 10.1136/bmjopen-2022-067959.
- [5] A. Rizkianti, T. Afifah, I. Saptarini, and M. F. Rakhmadi, “Women’s decision-making autonomy in the household and the use of maternal health services: An Indonesian case study,” *Midwifery*, vol. 90, Nov. 2020, doi: 10.1016/j.midw.2020.102816.
- [6] M. S. Noor *et al.*, “Analysis of Socioeconomic, Utilization of Maternal Health Services, and Toddler’s Characteristics as Stunting Risk Factors,” *Nutrients*, vol. 14, no. 20, Oct. 2022, doi: 10.3390/nu14204373.
- [7] K. Anindya, J. T. Lee, B. McPake, S. A. Wilopo, C. Millett, and N. Carvalho, “Impact of Indonesia’s national health insurance scheme on inequality in access to maternal health services: A propensity score matched analysis,” *J Glob Health*, vol. 10, no. 1, Jun. 2020, doi: 10.7189/JOGH.10.010429.
- [8] H. Andriani, S. D. Rachmadani, V. Natasha, and A. Saptari, “Continuum of care in maternal, newborn and child health in Indonesia: Evidence from the Indonesia Demographic and Health Survey,” *J Public Health Res*, vol. 11, no. 4, Oct. 2022, doi: 10.1177/22799036221127619.
- [9] K. Azhar, I. Dharmayanti, D. H. Tjandrarini, and P. S. Hidayangsih, “The influence of pregnancy classes on the use of maternal health services in Indonesia,” *BMC Public Health*, vol. 20, no. 1, Mar. 2020, doi: 10.1186/s12889-020-08492-0.
- [10] T. Rahmawati and H. M. Hsieh, “Appraisal of universal health insurance and maternal health services utilization: pre- and post-context of the Jaminan Kesehatan Nasional implementation in Indonesia,” *Front Public Health*, vol. 12, 2024, doi: 10.3389/fpubh.2024.1301421.
- [11] F. M. Ekawati, M. Muchlis, N. Ghislaine Iturrieta-Guaita, and D. Astuti Dharma Putri, “Recommendations for improving maternal health services in Indonesian primary care under the COVID-19 pandemic: Results of a systematic review and appraisal of international guidelines,” Mar. 01, 2023, *Elsevier B.V.* doi: 10.1016/j.srhc.2023.100811.
- [12] “Policy Implementation Analysis of Antenatal Care Services at Puskesmas Negara Ratu and Puskesmas Cempaka Kabupaten Lampung Utara,” *Journal of Indonesian Health Policy and Administration*, vol. 9, no. 2, May 2024, doi: 10.7454/ihpa.v9i2.8271.
- [13] D. Yuniarti, Agung Suharto, and Nuryani, “The Relationship Between Knowledge and Motivation of Pregnant Women with the Implementation of Integrated ANC at UPTD Plaosan Health Center,” *International Journal of Advanced Health Science and Technology*, vol. 4, no. 3, Jul. 2024, doi: 10.35882/ijahst.v4i3.341.
- [14] A. Rammohan, S. Goli, and H. Chu, “Continuum of care in maternal and child health in Indonesia,” *Prim Health Care Res Dev*, vol. 25, Apr. 2024, doi: 10.1017/S1463423624000094.

- [15] A. Palimbo, A. U. Salmah, R. Amiruddin, and A. Syam, "An overview of the implementation of the continuity of care model in maternal health services: A literature review," *Gac Sanit*, vol. 35, pp. S388–S392, Jan. 2021, doi: 10.1016/j.gaceta.2021.10.058.
- [16] S. Helmyati et al., "Monitoring continuity of maternal and child health services, Indonesia," *Bull World Health Organ*, vol. 100, no. 2, pp. 144-154A, Feb. 2022, doi: 10.2471/BLT.21.286636.