



ASSOCIATION BETWEEN FAMILY SUPPORT AND ADHERENCE TO TRIPLE ELIMINATION SCREENING AMONG PREGNANT WOMEN IN A PRIMARY HEALTHCARE SETTING IN INDONESIA

Zam Zam Lestari*, Wilis Dwi Pangesti

Midwifery's Program, Universitas Muhammadiyah Purwokerto, Jl. Letjen Soepardjo Roestam, PO. Box 229, Purwokerto 53181, Indonesia

*zamzam.mijan@gmail.com

ABSTRACT

Mother to child transmission of Human Immunodeficiency Virus (HIV), syphilis, and hepatitis B remains a major public health concern, particularly in low- and middle-income countries. Triple elimination screening during antenatal care is a key strategy to prevent vertical transmission; however, adherence to the recommended screening among pregnant women remains suboptimal. Family support has been recognized as an important determinant of maternal health behavior, yet evidence regarding its association with adherence to triple elimination screening in Indonesian primary healthcare settings remains limited. This study aimed to examine the association between family support and adherence to triple elimination screening among pregnant women attending a primary healthcare center in Indonesia. A quantitative study with a cross-sectional design was conducted at Cilacap Tengah II Primary Health Center, Central Java, Indonesia. A total of 76 pregnant women were recruited using purposive sampling. Data on family support and adherence to triple elimination screening were collected using validated structured questionnaires. Descriptive statistics were used to summarize participant characteristics and study variables. Since the data were not normally distributed, the association between family support and adherence to triple elimination screening was analyzed using Spearman's rank correlation test with a significance level of 0.05. The median family support score was 65 (range: 45–75), while the median adherence score for triple elimination screening was 65 (range: 30–75). Spearman's rank correlation analysis demonstrated a statistically significant positive association between family support and adherence to triple elimination screening ($r = 0.676$, $p = 0.001$). These findings indicate that pregnant women who received greater family support were more likely to comply with triple elimination screening during antenatal care. Family support was significantly associated with adherence to triple elimination screening among pregnant women. Strengthening family involvement, particularly spousal participation, in antenatal care education and counseling may improve adherence to triple elimination screening and contribute to the prevention of mother-to-child transmission of HIV, syphilis, and hepatitis B. Family centered interventions should therefore be considered an integral component of maternal healthcare programs in primary healthcare settings.

Keywords: adherence; family support; pregnant women; primary healthcare; triple elimination screening

How to cite (in APA style)

Lestari, Z. Z., & Pangesti, W. D. (2026). Association Between Family Support and Adherence to Triple Elimination Screening Among Pregnant Women in A Primary Healthcare Setting in Indonesia. *Indonesian Journal of Global Health Research*, 8(6), 397–404. <https://doi.org/10.37287/ijghr.v8i6.2593>.

INTRODUCTION

Mother To Child Transmission (MTCT) of Human Immunodeficiency Virus (HIV), syphilis, and hepatitis B remains a major public health challenge worldwide. These infections can be transmitted during pregnancy, childbirth, or breastfeeding and contribute substantially to maternal and neonatal morbidity and mortality if not detected and managed appropriately. Therefore, eliminating vertical transmission of these infections has become one of the global priorities in achieving the Sustainable Development Goals (SDGs), particularly those related to maternal and child health (World Health Organization [WHO], 2022; Ministry of Health of the Republic of Indonesia, 2023). To address this challenge, the World Health Organization (WHO) has strengthened the global Triple Elimination initiative to prevent mother-to-child transmission of HIV, syphilis, and hepatitis B virus through an integrated and person-centred approach. The strategy emphasizes the integration of essential maternal health services, including routine screening for HIV, syphilis, and hepatitis B during antenatal care (ANC), followed by timely treatment, appropriate interventions, and follow-up care

for mothers and infants. Early identification and effective management of these infections are essential to reducing the risk of vertical transmission and improving maternal and newborn health outcomes. In Indonesia, Triple Elimination efforts are integrated into maternal and child health services and support the national commitment to strengthening HIV, sexually transmitted infection, and hepatitis prevention and control toward the 2030 global health targets (World Health Organization & United Nations Children's Fund, 2025; World Health Organization, 2025). Despite the implementation of national policies, the coverage of triple elimination screening among pregnant women remains suboptimal in many regions. According to the Ministry of Health of the Republic of Indonesia (2023), the prevalence of HIV, syphilis, and hepatitis B among pregnant women was approximately 0.39%, 1.7%, and 2.5%, respectively. These findings indicate that strengthening early detection through routine triple elimination screening remains essential to prevent vertical transmission and improve maternal and neonatal health outcomes.

The successful implementation of triple elimination programs depends not only on the availability of health services but also on pregnant women's adherence to recommended screening. The Theory of Planned Behavior (TPB) explains that an individual's behavior is determined by behavioral intention, which is influenced by attitudes, subjective norms, and perceived behavioral control (Ajzen, 2022). Within this framework, family support represents an important component of subjective norms because encouragement and approval from family members may strengthen pregnant women's intention to utilize preventive health services, including triple elimination screening. Previous evidence has highlighted the importance of family and social support in facilitating maternal engagement with antenatal health services. In the context of the Triple Elimination of mother-to-child transmission of HIV, syphilis, and hepatitis B, family-centred and person-centred approaches are increasingly recognised as important components of comprehensive maternal health care. Support from partners and family members may facilitate women's access to antenatal services, encourage timely health-seeking behaviour, and promote engagement with recommended screening and follow-up care. The World Health Organization and UNICEF emphasize that achieving Triple Elimination requires health services that respond not only to the needs of women and newborns but also to the broader role of families and communities in supporting maternal health and access to essential services (World Health Organization & United Nations Children's Fund, 2025). Similarly, Asih and Djanas (2022) found a significant relationship between family support and pregnant women's willingness to undergo triple elimination screening. Sude et al. (2024) further demonstrated that family support was significantly associated with adherence to triple elimination screening ($p = 0.028$). Comparable findings were reported by Pitriani et al. (2024), Kurnia (2023), Kapoh et al. (2025), and Salsalina et al. (2024), highlighting that family support, motivation, and access to health information are important determinants of screening adherence. Furthermore, Armini et al. (2024) emphasized that understanding patients' perspectives is essential for improving the implementation of mother-to-child transmission elimination programs.

Although previous studies have identified several determinants of triple elimination screening, evidence regarding the influence of family support on screening adherence at the primary healthcare level remains limited, particularly in the Cilacap Regency. Local health records from Cilacap Tengah II Primary Health Center showed that only 72.4% of pregnant women underwent triple elimination screening in 2025, which was below the national target of 100%, leaving approximately 27.5% of pregnant women unscreened. Preliminary interviews with pregnant women also suggested that insufficient family support was one of the barriers to completing the recommended screening. Considering these findings, further investigation is needed to examine the relationship between family support and pregnant women's adherence to triple elimination screening. Understanding this relationship may provide evidence for developing family-centered interventions to improve screening uptake and strengthen the implementation of the national triple elimination program. Therefore, this study aimed to analyze the association between family support and adherence to

triple elimination screening among pregnant women attending Cilacap Tengah II Primary Health Center.

METHOD

This quantitative study employed an analytical cross sectional design to examine the relationship between family support and adherence to triple elimination screening among pregnant women. The study was conducted at Cilacap Tengah II Primary Health Center, Cilacap Regency, Central Java, Indonesia, between April and June 2026. The study population comprised 193 pregnant women who attended antenatal care services at the study site. The minimum sample size was calculated using the formula for correlation analysis with an expected correlation coefficient of 0.30, a significance level of 5%, and 80% statistical power. After adding a 10% allowance for potential non-response, the required sample size was 75 participants. Participants were recruited using purposive sampling. Eligible participants were pregnant women in the first or second trimester, attended antenatal care at the health center, were able to read and write, and agreed to participate in the study. Pregnant women with emergency conditions, severe communication or cognitive impairments, those living separately from their families, or non-permanent residents of the study area were excluded.

The independent variable was family support, while the dependent variable was adherence to triple elimination screening. Family support was measured using a self-administered questionnaire consisting of 15 items covering four domains: instrumental support, informational support, emotional support, and appraisal support. Adherence to triple elimination screening was assessed using a 15-item questionnaire evaluating regular attendance, completeness of screening, timeliness, repeat screening when indicated, retrieval of test results, and compliance with recommended follow-up. All questionnaire items were rated on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), with higher scores indicating better family support and higher adherence. Prior to data collection, the questionnaires were pilot-tested among 30 pregnant women at another primary health center with characteristics similar to the study population. All questionnaire items demonstrated satisfactory construct validity, with corrected item-total correlation coefficients ranging from 0.487 to 0.890 for the family support questionnaire and from 0.623 to 0.895 for the adherence questionnaire. Internal consistency was excellent, with Cronbach's alpha values of 0.948 for family support and 0.974 for adherence, indicating high reliability.

Data were collected using self-administered questionnaires after participants had provided written informed consent. Four trained midwife enumerators assisted the data collection process after receiving standardized training regarding study procedures, ethical principles, and questionnaire administration. Completed questionnaires were reviewed daily for completeness and consistency before data entry. Data were analyzed, Descriptive statistics were used to summarize participants' characteristics and study variables. Data normality was assessed using the Kolmogorov–Smirnov test, which indicated that both family support and adherence scores were not normally distributed ($p < 0.05$). Therefore, the association between family support and adherence to triple elimination screening was analyzed using Spearman's rank correlation test. Statistical significance was established at $p < 0.05$. The study received ethical approval from the Health Research Ethics Committee, Faculty of Health Sciences, Universitas Muhammadiyah Purwokerto (Approval No. KEPK/UMP/180/III/2026). Written informed consent was obtained from all participants before enrollment. Participants' anonymity and confidentiality were maintained throughout the study.

RESULT

Participant Characteristics

A total of 76 pregnant women participated in this study. Most participants were aged 20–35 years (77.6%), were multigravida (67.1%), had completed secondary education (50.0%), and were housewives (86.8%). The demographic characteristics of the participants are presented in Table 1.

Table 1.
Characteristics of the Participants (n = 76)

Characteristics	f	%
Age (years)		
<20	2	2.6
20–35	59	77.6
>35	15	19.7
Gravidity		
Primigravida	24	31.6
Multigravida	51	67.1
Grand multiparous	1	1.3
Education		
Primary (Elementary–Junior High School)	34	44.7
Secondary (Senior High School)	38	50.0
Higher education	4	5.3
Occupation		
Housewife	66	86.8
Employed	10	13.2

Family Support

The Kolmogorov–Smirnov test indicated that family support scores were not normally distributed ($p = 0.040$). Therefore, the data are presented as median and range. The median family support score was 65, with a range of 45–75, indicating that most participants reported relatively high levels of family support (Table 2).

Table 2.
Distribution of Family Support Scores (n = 76)

Variable	Median	Min–Max
Family support	65	45–75

Adherence to Triple Elimination Screening

The adherence scores were also not normally distributed according to the Kolmogorov–Smirnov test ($p < 0.001$). The median adherence score was 65, with scores ranging from 30 to 75, suggesting that participants generally demonstrated a high level of adherence to triple elimination screening during antenatal care (Table 3).

Table 3.
Distribution of Adherence to Triple Elimination Screening (n = 76)

Variable	Median	Min–Max
Adherence to triple elimination screening	65	30–75

Association Between Family Support and Adherence to Triple Elimination Screening

Spearman's rank correlation analysis revealed a statistically significant positive correlation between family support and adherence to triple elimination screening ($r = 0.676$, $p = 0.001$). The correlation coefficient indicated a strong positive relationship, suggesting that higher levels of family support were associated with greater adherence to triple elimination screening among pregnant women (Table 4).

Table 4.
Correlation Between Family Support and Adherence to Triple Elimination Screening

Variables	n	r	p-value
Family support and adherence to triple elimination screening	76	0.676	0.001

DISCUSSION

Characteristics of the Participants

The majority of participants in this study were 20–35 years old (77.6%), multigravida (67.1%), had secondary education (50.0%), and were housewives (86.8%). These characteristics are consistent with the profile of pregnant women who are generally within the reproductive age range commonly observed among users of antenatal care services. Maternal age is an important factor associated with the timing and utilization of antenatal care, with women aged 20–35 years more frequently represented among those accessing timely and integrated ANC services. Recent evidence from Indonesia has shown that maternal age, parity, education, health insurance, and other socioeconomic characteristics may influence women's access to and utilization of antenatal care services (Iskandar et al., 2025; Elfrida et al., 2025; Titaley et al., 2025). Although multigravida women may have previous pregnancy experience and greater familiarity with maternal health services, previous pregnancy experience does not necessarily guarantee timely or adequate utilization of ANC. Therefore, parity should be considered as one of several maternal characteristics that may influence health-seeking behaviour and engagement with recommended antenatal services, including triple elimination screening. Educational attainment may also contribute to health seeking behavior. Women with secondary or higher education generally have better health literacy, enabling them to understand information provided by healthcare professionals and make informed decisions regarding preventive health services. Bayti and Pratiwi (2023) emphasized that maternal health behavior is influenced not only by individual knowledge but also by psychological and social factors that shape health related decision-making. Nevertheless, education alone is insufficient to ensure compliance, as family support and social influences remain essential determinants of maternal behavior.

Family Support Among Pregnant Women

The present study demonstrated that the median family support score was 65 (range 45–75), indicating that most pregnant women perceived relatively high family support. Family support encompasses emotional, informational, instrumental, and appraisal support, all of which contribute to improving pregnant women's confidence and motivation to seek appropriate maternal healthcare. According to the Theory of Planned Behavior (TPB), behavioral intention is a central determinant of subsequent behavior. Intention is primarily shaped by three key psychological constructs: attitudes toward the behavior, subjective norms, and perceived behavioral control. Attitudes reflect an individual's positive or negative evaluation of performing a behavior, subjective norms represent perceived social expectations or pressures, and perceived behavioral control reflects an individual's perception of their ability and capacity to perform the behavior. These constructs collectively influence an individual's intention and, consequently, the likelihood of engaging in the intended health behavior (Hagger & Hamilton, 2025; Naskar & Merigó Lindahl, 2026). Family support represents an important component of subjective norms because encouragement, approval, and assistance from family members reinforce pregnant women's intention to comply with recommended health services. Similar applications of TPB have demonstrated that social support significantly predicts individuals' intentions to engage in preventive health behaviors, including vaccination and other health promotion activities (Che et al., 2023).

The findings of this study are consistent with recent evidence highlighting the important role of family support in pregnant women's engagement with Triple Elimination screening. A qualitative study conducted in Indonesia found that family support, particularly emotional and instrumental support, helped strengthen pregnant women's confidence and facilitated their decision to undergo Triple Elimination testing (Erika & Muda, 2026). Similarly, recent evidence from Bandung demonstrated that family support was among the factors associated with pregnant women's compliance with the Triple Elimination programme (Raya et al., 2026). These findings suggest that positive support from family members may facilitate women's engagement with recommended screening services and encourage timely participation in Triple Elimination programmes. Likewise, Kurnia (2023) found that family support, together with positive perceptions and support from healthcare providers, significantly contributed to maternal compliance with triple elimination screening. Pitriani et al. (2024) further reported that family support, motivation, and information

sources collectively improved adherence to screening recommendations. These findings suggest that family involvement extends beyond emotional encouragement. Practical assistance, such as accompanying pregnant women to health facilities, reminding them of scheduled antenatal visits, and facilitating communication with healthcare providers, may substantially increase compliance with maternal health services. Similar conclusions were reported in a recent scoping review identifying family support as one of the principal determinants of pregnant women's participation in triple elimination screening.

Adherence to Triple Elimination Screening

The median adherence score in this study was 65 (range 30–75), indicating generally good adherence among pregnant women. Nevertheless, several participants still demonstrated low adherence, suggesting that barriers to screening remain despite the availability of national guidelines. The Indonesian Ministry of Health has mandated universal triple elimination screening for all pregnant women through antenatal care services as stipulated in Regulation No. 52 of 2017 and reinforced in the national guideline for triple elimination screening (Ministry of Health of the Republic of Indonesia, 2023). Similarly, the World Health Organization recommends universal screening to prevent mother-to-child transmission of HIV, syphilis, and hepatitis B (WHO, 2022). Despite these policies, implementation challenges persist in many healthcare settings, including limited awareness among pregnant women, insufficient health promotion, and variations in service delivery. The present findings are comparable to those reported by Sude et al. (2024), who found that approximately three-quarters of pregnant women adhered to triple elimination screening, although a considerable proportion remained non-compliant. Similar observations were reported by Salsalina et al. (2024) and Widyastuti et al. (2023), both of whom identified variability in screening adherence among pregnant women attending primary healthcare facilities. Program evaluation studies have further demonstrated that successful implementation of triple elimination depends not only on maternal willingness but also on healthcare system readiness. Halizhah et al. (2025) emphasized that strengthening program implementation, while Riauni et al. (2025) identified deficiencies in health promotion, stakeholder involvement, and service organization as barriers to optimal screening performance. Geographic analyses by Utami et al. (2025) likewise revealed disparities in the implementation of triple elimination services across regions, indicating unequal access and program coverage.

Association Between Family Support and Adherence to Triple Elimination Screening

The principal finding of this study is the significant positive association between family support and adherence to triple elimination screening ($r = 0.676$; $p = 0.001$). The correlation coefficient indicates a strong positive relationship, suggesting that pregnant women receiving greater family support are more likely to comply with recommended triple elimination screening during antenatal care. This finding is theoretically supported by the Theory of Planned Behavior, which proposes that subjective norms significantly influence behavioral intentions and subsequent health behaviors (Ajzen, 2022). Family members, particularly husbands, constitute influential subjective norms during pregnancy. Their encouragement, approval, and practical assistance strengthen pregnant women's confidence and intention to undergo recommended health examinations. The present findings are consistent with those of Kapoh et al. (2025), who reported a significant relationship between family support and adherence to antenatal care. Similarly, Sude et al. (2024) demonstrated that family support significantly influenced adherence to triple elimination screening, while Pitriani et al. (2024) concluded that family support, motivation, and information sources collectively improved maternal compliance.

Comparable findings have also been reported in recent studies. Raya et al. (2026) found that family support was significantly associated with pregnant women's compliance with the Triple Elimination programme and represented the strongest determinant of compliance among the factors examined. Similarly, Erika and Muda (2026) reported that family support, including attention, motivation, accompaniment, and emotional reinforcement, strengthened pregnant women's confidence and

decision-making to undergo Triple Elimination screening. These findings indicate that family support may play an important role in encouraging pregnant women's participation in Triple Elimination screening and facilitating adherence to recommended maternal health services. Asih and Djanas (2022) likewise demonstrated that family support increased pregnant women's interest in participating in triple elimination screening. More recently, Kahar (2025) emphasized that behavioral factors remain central determinants of pregnant women's participation in the program.

International evidence also supports these findings. Armini et al. (2024) reported that women's experiences and perceptions play a crucial role in the successful implementation of elimination programs, indicating that patient-centered and family-centered approaches should be integrated into maternal healthcare. Chekole et al. (2025) similarly identified social support as one of the determinants of adherence to antenatal care, suggesting that interventions targeting family involvement may improve maternal compliance. These findings are reinforced by broader evidence showing that husband and family support consistently predicts compliance with triple elimination screening among pregnant women. Taken together, these findings indicate that improving family engagement should become an integral component of triple elimination programs. Health education should therefore target not only pregnant women but also husbands and other family members, enabling them to provide emotional encouragement, accurate information, and practical assistance throughout pregnancy. Strengthening family participation has the potential to increase adherence to triple elimination screening, thereby contributing to the prevention of mother-to-child transmission of HIV, syphilis, and hepatitis B and supporting national and global elimination targets.

CONCLUSION

This study demonstrated a significant association between family support and compliance with triple elimination screening among pregnant women at Puskesmas Cilacap Tengah II. The positive correlation indicates that higher levels of family support are associated with greater adherence among pregnant women to undergo triple elimination screening as an integral component of antenatal care services.

REFERENCES

- Ajzen, I. (2022). *Theory of planned behavior*. Routledge.
- Armini, L. N., et al. (2024). Patient perspective on elimination of mother-to-child transmission of HIV, syphilis, and hepatitis B. *BMC Public Health*. <https://doi.org/10.1186/s12889-024-19692-3>
- Bayti, B. J., & Pratiwi, C. S. (2023). Health behaviors in pregnant women with psychological problems and disorders: A scoping review. *Women, Midwives and Midwifery*.
- Che, H., et al. (2023). Understanding the intention to use COVID-19 vaccine: A study based on the theory of planned behavior. *Journal of Health Psychology*, 28(1), 3–15.
- Chekole, M. S., et al. (2025). Determinants of non-adherence to antenatal care among pregnant women. *Maternal Health, Neonatology and Perinatology*. <https://doi.org/10.1186/s40748-025-00219-6>
- Elfrida, I., Widowati, H., Azizah, N., & Hanum, S. M. F. (2025). Maternal age, parity, and education in early antenatal care attendance. *Indonesian Journal on Health Science and Medicine*, 2(2).
- Erika, & Muda, I. (2026). The family and health workers support role to undergo Triple Elimination screening in pregnant women based on the Health Belief Model perspective. *Jurnal Ners dan Kebidanan (Journal of Ners and Midwifery)*, 13(2), 232–240. <https://doi.org/10.26699/jnk.v13i2.ART.p232-240>
- Hagger, M. S., & Hamilton, K. (2025). Progress on theory of planned behavior research: Advances in research synthesis and agenda for future research. *Journal of Behavioral Medicine*, 48, 43–56. <https://doi.org/10.1007/s10865-024-00545-8>
- Halizhah, Z. N., et al. (2025). Evaluasi program triple eliminasi pada ibu hamil di Kota Makassar. *Hasanuddin Journal of Public Health*.

- Iskandar, S. I., Aryanto, S., Prawitasari, S., & Wiratama, B. S. (2025). Strengthening the first antenatal visit to improve maternal health: Results from a cross-sectional study in Bantul, Indonesia. *BMC Pregnancy and Childbirth*, 25, 911.
- Kahar, F. (2025). Perilaku ibu hamil dalam pemeriksaan triple eliminasi. *Jurnal Laboratorium Medis*.
- Kapoh, M. G., et al. (2025). Hubungan dukungan keluarga dengan kepatuhan ibu hamil dalam pemeriksaan antenatal care. *JINTAN: Jurnal Ilmu Keperawatan*, 5(1), 199–206. <https://doi.org/10.51771/jintan.v5i1.941>
- Kementerian Kesehatan Republik Indonesia. (2023). Pedoman pemeriksaan triple eliminasi pada ibu hamil. Kementerian Kesehatan Republik Indonesia.
- Kurnia, N. (2023). Persepsi, dukungan keluarga, dan peran petugas kesehatan hubungannya dengan kepatuhan ibu hamil trimester III dalam pemeriksaan triple eliminasi di Klinik Pratama Sumarno Medika 2022. *Jurnal Keperawatan*, 11(2), 123–130.
- Naskar, S. T., & Merigó Lindahl, J. M. (2026). Forty years of the theory of planned behavior: A bibliometric analysis (1985–2024). *Management Review Quarterly*, 76, 573–632.
- Pitriani, E., et al. (2024). Hubungan motivasi, dukungan keluarga, dan sumber informasi dengan kepatuhan pemeriksaan triple eliminasi. *Jurnal Ilmiah Kebidanan Indonesia*.
- Prastia, T. N., Nauli, H. A., Listyandini, R., Parwati, S. S., Ranida, L., Putri, D. A., Fitriani, A., & Nuraini, F. D. (2025). Edukasi ibu hamil dan penguatan peran suami dalam pemeriksaan Triple Eliminasi sebagai strategi pencegahan masalah gizi dan kesehatan anak. *Jurnal Pemberdayaan Masyarakat Universitas Al Azhar Indonesia*, 7(2), 121–128. <https://doi.org/10.36722/jpm.v7i2.4049>
- Raya, R. P., Holizah, S. N., & Imansari, B. (2026). Determinants of pregnant women's compliance with the Triple Elimination programme in Bandung City, Indonesia. *Journal of Public Health Sciences*, 5(2), 573–582. <https://doi.org/10.56741/IISTR.jphs.001350>
- Riauni, S., et al. (2025). Performance analysis of triple elimination screening programme in antenatal care. *Viva Medika: Jurnal Kesehatan, Kebidanan dan Keperawatan*, 17(3), 391–401. <https://doi.org/10.35960/vm.v17i3.1617>
- Salsalina, Y. G., et al. (2024). Kepatuhan ibu hamil dalam pemeriksaan triple eliminasi. *Jurnal Kebidanan*, 14(2).
- Sari, R. P. E., et al. (2024). Correlation between perception and attitude of pregnant women toward triple elimination examination. *An Idea Health Journal*.
- Scott, A. M., et al. (2025). Effective dietary interventions during pregnancy. *BMC Pregnancy and Childbirth*.
- Sude, E. V., et al. (2024). Kepatuhan ibu hamil dalam pemeriksaan triple eliminasi di Puskesmas Waena. *Jambura Journal of Health Sciences and Research*, 6(2), 71–80. <https://doi.org/10.35971/jjhsr.v6i2.22048>
- Titaley, C. R., Tjandrarini, D. H., Malakauseya, M. L. V., et al. (2025). Determinants of non-use of antenatal care services in eastern Indonesia: Analysis of the 2023 Indonesia health survey. *Frontiers in Global Women's Health*, 6, 1649276.
- Utami, F. P., et al. (2025). GIS distribution of triple elimination implementation in pregnant women. *Jurnal Ilmiah Kesehatan*, 17(1), 84–92. <https://doi.org/10.37012/jik.v17i1.2264>
- WHO Country Guidance for Triple Elimination (2025)
- Widyastuti, E., et al. (2023). Pemeriksaan triple eliminasi pada ibu hamil. *Jurnal Kesehatan Reproduksi*, 10(1), 1–8.
- World Health Organization & United Nations Children's Fund. (2025). Country guidance for planning triple elimination of mother-to-child transmission of HIV, syphilis and hepatitis B virus programmes. WHO. WHO publication
- World Health Organization. (2022). Triple elimination of mother-to-child transmission of HIV, syphilis, and hepatitis B.
- World Health Organization. (2025). First-ever guidance for Triple Elimination of mother-to-child transmission of HIV, syphilis and hepatitis B. WHO Triple Elimination guidance.