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MIDWIVES' PERFORMANCE IN IMPLEMENTING THE PREVENTION OF MOTHER-TO-CHILD HIV TRANSMISSION PROGRAM: A QUALITATIVE STUDY IN TWO INDONESIAN HEALTH CENTERS

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Abstract

Mother-to-child transmission (MTCT) remains an important route of HIV infection in children. Indonesia's Prevention of Mother-to-Child HIV Transmission (PPIA) program integrates HIV counseling and screening into antenatal care (ANC), with midwives playing a key role in service delivery. However, qualitative evidence from Indonesia examining midwives' implementation of PPIA against service standards remains limited. Previous studies have largely focused on program-level challenges, health-system readiness, or the experiences of mothers living with HIV. This study addresses this gap by examining both the quality and coverage of PPIA services, triangulating perspectives from midwives, health-center managers, and pregnant women with direct observations, and exploring implementation across two health-center settings. This study aims to assess midwives' performance in implementing the PPIA program in ANC services. The research was conducted at Bandar Baru and Padang Pasir Health Centers, focusing on VCT services. This descriptive qualitative study was conducted at Bandar Baru Health Center, North Sumatra, and Padang Pasir Health Center, West Sumatra, in 2024. The study involved 26 informants, comprising 12 midwives, four health-center managers, and 10 pregnant women. Data were collected through in-depth interviews, observation, and document review. Data were analyzed using qualitative content analysis, with triangulation of sources, methods, and study sites employed to enhance the trustworthiness of the findings. The results indicate that midwives' performance in implementing the PPIA program in ANC services is still suboptimal in terms of both quality and quantity. Factors affecting midwives' performance that need improvement for the PPIA program include job description distribution. PPIA training, provision of counseling aids, collaboration with private HIV prevention foundations, and religious leaders.

Keywords: Antenatal Care; HIV Screening; Midwives' Performance; Prevention of Mother-to-Child Transmission (PMTCT); PPIA.

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1. INTRODUCTION

MTCT remains an important route of HIV infection in children. Without intervention, the risk of transmission from an HIV-positive mother to her child is estimated at 20–45% (1). Globally, an estimated 38.4 million people were living with HIV, while Indonesia was reported to have 640,000 cases, placing it among the

countries with a substantial HIV burden in the Asia-Pacific region (2,3). In West Sumatra, Padang City recorded the highest number of new HIV/AIDS cases in the province during 2020–2023, with annual counts increasing from 225 in 2020 to 333 in 2023 (4). These findings highlight the importance of considering local epidemiological patterns when planning HIV prevention and testing services. These figures highlight the importance of strengthening HIV prevention services for pregnant women while taking local epidemiological contexts into account.

Indonesia implements PPIA program through health services, including ANC, under Minister of Health Regulation No. 52 of 2017 (5). Integrated ANC is also regulated under Minister of Health Regulation No. 21 of 2021 and includes clinical assessments and examinations, including the 10-T components, alongside relevant maternal health interventions (6). Midwives play an important role in providing ANC, identifying potential health risks, and facilitating HIV counseling and screening for pregnant women. Their performance is therefore important to the implementation of PPIA, particularly in ensuring that services are delivered not only at the expected coverage level but also with appropriate quality (7).

However, PPIA implementation remains challenging. Previous reports indicated that coverage reached 60%, below the stated target of 80% (5,8). In addition, the absence of standard operating procedures (SOPs) for midwives has been associated with pregnant women diagnosed with HIV being lost to follow-up (9). These findings suggest that evaluating PPIA implementation requires attention to both service coverage and the quality of counseling, screening, and linkage to further care.

Previous studies in Indonesia have examined program implementation, health-system readiness, program managers' perspectives, and the experiences of mothers living with HIV (8,10,11). International evidence has also highlighted concerns regarding provider-initiated antenatal HIV testing, including limited pre-test counseling and uncertainty about informed consent (12). The World Health Organization identifies five essential principles for HIV testing: consent, confidentiality, counseling, correct test results, and connection to care (the 5Cs) (13). These principles provide a framework for examining whether routine screening is accompanied by appropriate counseling and ethical testing practices. Nevertheless, further investigation is needed to understand how these principles are implemented in routine ANC services and how service quality relates to reported screening coverage in different primary healthcare settings.

This study addresses this issue by examining midwives' performance in PPIA implementation through multiple perspectives, including those of midwives, health-center managers, and pregnant women. It combines interviews with observation and document review to explore service quality, screening coverage, pregnant women's participation and understanding, and factors influencing implementation. The study also examines two health-center settings with different reported HIV-service contexts: Bandar Baru Health Center in Deli Serdang and Padang Pasir Health Center in Padang Barat. The findings are intended to provide contextual evidence to support improvements in PPIA counseling and HIV screening within integrated ANC. Therefore, this study aimed to explore midwives' performance in delivering PPIA counseling and HIV screening during integrated ANC and the factors influencing this performance.

2. METHOD

This study employed a descriptive qualitative design to explore midwives' performance in implementing the PPIA program during integrated ANC and to identify factors influencing their performance. The study was conducted in 2024 at Bandar Baru Health Center in North Sumatra and Padang Pasir Health Center in West Sumatra.

Informants were selected using purposive sampling based on their relevance to the study objectives. The final sample consisted of 26 informants: 12 midwives, four health-center managers, and 10 pregnant women from Bandar Baru Primary Health Center and Padang Pasir Primary Health Center. These informants were selected to provide information on the implementation of prevention of PPIA services, including counseling, HIV screening, and factors affecting service delivery. The analysis was based on data obtained from these 26 informants.

Data were collected through in-depth interviews, observation, document review, and focus group discussion (FGD). In-depth interviews were conducted using an interview guide and recorded using a voice recorder after consent had been obtained from the informants. The interviews explored midwives' performance in implementing PPIA services during ANC. Observations focused on the availability of facilities and infrastructure and the implementation of counseling and HIV screening for pregnant women. Document review involved examining health-center reports related to HIV screening and case detection. The FGD involved midwives from both health centers and was described in the original study as a means of introducing the research and identifying potential informants.

Data were analyzed using qualitative content analysis. The analysis followed six stages described in the original manuscript: (1)

transcription of recorded interviews into written text; (2) coding of relevant words, statements, or paragraphs; (3) grouping related codes into categories; (4) presenting the data in a matrix to examine relationships between categories; (5) analyzing data during the collection process to identify information requiring further exploration; and (6) conducting content analysis to identify meaningful patterns in the data. The analysis focused on information relevant to midwives' performance in implementing PPIA services and the factors influencing service delivery.

This study was reviewed and approved by the Health Research Ethics Committee (Komite Etik Penelitian Kesehatan, KEPK) of the Medan Health Polytechnic of the Ministry of Health, Indonesia, under Protocol No. 01.25 486/KEPK/POLTEKKES KEMENKES MEDAN 2024.

3. RESULTS AND DISCUSSION

Results

Table 1. Characteristics of Informants (n = 26)

Informant group	Codes	n (PP/BB)*	Age (years)	Education / profile
Head of health center	In-1P, In-1B	2 (1/1)	47–49	Medical doctor, Master of Public Health
Head of administration	In-2P, In-2B	2 (1/1)	34–52	Bachelor of Public Health
Coordinator midwife	In-3P, In-3B	2 (1/1)	40–42	Midwifery diploma (D-III/D-IV)
Village midwife	In-4P to In-8P; In-4B to In-8B	10 (5/5)	32–52	Midwifery diploma (D-III/D-IV)
Pregnant woman	PW-1P to PW-5P; PW-1B to PW-5B	10 (5/5)	23–34	Education: senior high school 5, junior high school 2, bachelor's degree 1, primary school teacher education 2. Occupation: housewife 3, employee 3, teacher 2, farmer 1, pastor 1. Gravidity: primigravida 3, multigravida 7. Trimester: first 4, second 4, third 2.

Source: Primary Data, 2024 * PP = Padang Pasir Health Center; BB = Bandar Baru Health Center. Codes: In = provider informant; PW = pregnant woman; suffix P/B = Padang Pasir/Bandar Baru.

Table 1 presents the characteristics of the 26 supporting informants included in the analysis. These informants comprised health-center heads, heads of administration, coordinating midwives, village midwives, and pregnant women from Padang Pasir and Bandar Baru Health Centers. The informants represented both service providers and service users, allowing the study to explore PPIA implementation from different perspectives. The age range and educational background of the informants varied across groups, while the pregnant women also differed in occupation, gravidity, and trimester of pregnancy.

Table 2. Example of the Analytic Process, from Meaning Unit to Theme

Meaning unit	Code	Subtheme	Theme
"...the 10 T examination is not performed because the posyandu is held on the porch	Open-space setting prevents full	Workload, time and setting	Factors influencing performance

Meaning unit	Code	Subtheme	Theme
of the house, in an open space." (In-4P, In-5P, In-7P)	examination		
"There is no informed consent because I am afraid that counseling will be explained to pregnant women, and they will not want to undergo further examinations." (In-3B, In-4B)	Consent and counseling omitted for fear of refusal	Screening without the 5C principles	Quality of PPIA services
"I have had my blood checked at the health center but I don't know what the health check says." (PW-4P, PW-5P, PW-5B)	Tested without knowing the purpose	Involvement in HIV testing	Participation and understanding of pregnant women

Source: Authors' Analysis of Interview Data, 2024.

Table 2 presents an example of the analytical process, illustrating how meaning units from interview data were categorized into subthemes and themes. The analysis identified four main themes and 13 subthemes related to midwives' performance in implementing PPIA services during integrated ANC, as presented in Table 3.

Table 3. Themes and Subthemes Identified in the Study

Theme	Subthemes	Key findings
1. Quality of PPIA services in integrated ANC	Incomplete 10-T examination Counseling: referral, staffing, materials, facilities Screening without the 5C principles	10-T not completed; counseling referred to doctor or coordinator midwife; HIV tests done without consent or counseling
2. Coverage of PPIA services	ANC visits and access Pre- and post-test counseling HIV screening	Six-visit target reported as met; counseling not fully delivered; all attending women tested
3. Participation and understanding of pregnant women	Involvement in HIV testing Understanding of HIV	Some never tested, some self-initiated, some tested without knowing why; knowledge partial, with misconceptions
4. Factors influencing performance	Workload, time and setting Limited counseling staff and training Stigma and fear of refusal Geography, transport and weather Enabling factors	Barriers: time, staffing, stigma, access. Enablers: SOPs, training, funding, IMUD class, cadres, churches, media

Source: Authors' Analysis of Interview Data, 2024.

Theme 1. Quality of PPIA services in integrated ANC

a. Incomplete 10-T examination

All 16 provider informants (midwives and managers) at both centers said that the full 10-T examination was not carried out in integrated ANC. Pregnant women usually received only a brief interview and a limited set of examinations.

"Pregnant women who undergo ANC examinations do not have the 10 T performed, only a casual interview regarding weight and height and fundal height, fetal heart rate, Fe tablets, laboratory examinations if necessary, due to long waiting times and many patients besides pregnant women." (In-2P, In-3P, In-2B, In-3B)

b. Counseling: referral, staffing, materials and facilities

Fourteen of the 16 provider informants said that HIV counseling is referred to the health center because pregnant women must see a doctor, so it is mainly done by the doctor or the coordinator midwife rather than by village midwives. Managers described complete SOPs and guidelines from the Ministry of Health. A coordinator midwife at Bandar Baru described giving booklets and brochures, while one at Padang Pasir said counseling was delivered mainly in group meetings rather than individually (In-3B, In-3P). Both centers had a separate counseling room and VCT clinic, equipped through grants, local government budgets (APBD) and National Health Insurance (JKN) funds, and counseling was also delivered outside the building when needed (In-1P, In-1B, In-3P, In-3B).

a. Screening without the 5C principles

Screening is a laboratory test that should follow informed consent, confidentiality, counseling, correct test results and connection to care. Managers described testing as complete and consent-based.

"Pregnant mothers should indeed receive VCT services 100%, everyone must be examined, of course based on the consent of the pregnant mother." (In-1B)

Midwives, however, said that every attending pregnant woman was tested but without counseling or consent, and at Bandar Baru the purpose of the test was not communicated and no SOP was yet in place (In-5B to In-8B).

"Every pregnant woman who comes to the health center will definitely undergo an HIV examination, but counseling and informed consent are not conducted." (In-4P, In-5P)

Midwives linked these omissions to stigma.

"The obstacles we face in the field or in the community are stigma. Stigma is the condition where the patient or community feels ashamed and afraid of being diagnosed with HIV, so they fear being ostracized in society, which leads to a lack of informed consent and counseling according to protocols." (In-3P, In-6P, In-8P, In-3B, In-4B)

Theme 2. Coverage of PPIA services

a. ANC visits and access

National standards require at least six ANC visits (one in the first trimester, two in the second and three in the third). Informants reported that the 80% target for six visits was met, but some pregnant women did not reach the health center because of lack of transport or bad weather. Midwives compensated by taking women to the health center themselves, and the coordinator midwife sometimes went to villages to perform rapid HIV tests.

"If the pregnant mother has not gone to the health center, I will take her there with my own vehicle and she will undergo triple elimination

screening without informed consent." (In-4P, In-7P, In-8P)

b. Pre- and post-test counseling

Pre-test counseling was presented as a health check rather than an HIV test, for fear that women would refuse. Consequently, pre- and post-test counseling were not fully delivered at either center, and results were simply recorded in the maternal and child health (KIA) book.

"To explain what the examination was, I told them it was for a health check." (In-4B, In-5B, In-7B, In-8B)

"I didn't do pre-test counseling, and after the test there were results; the test results are written in the KIA book." (In-6B)

c. HIV screening

Informants reported that all pregnant women who came for pregnancy check-ups were tested, with a reported reagent target of 90%. Yet consent, confidentiality, counseling, communication of correct results and connection to care were not applied, again for fear of refusal. Village midwives gave only very simple counseling that did not follow protocol and referred women to the health center for examination by a doctor (In-5B, In-6B, In-7B).

"There is no informed consent because I am afraid that if counseling is explained to pregnant women, they will not want to undergo further examinations and will go home." (In-3B, In-4B)

Theme 3. Participation and Understanding of Pregnant Woman

a. Involvement in HIV testing

Experiences of testing varied among the ten pregnant women. Some had been examined by the midwife but had never had blood tested; others had asked to be tested because women with HIV lived in their area; others had been tested without knowing why.

"I have checked with the midwife 2 times and my blood has never been tested." (PW-1P, PW-2P, PW-2B)

"I once had my blood checked at the health center because I wanted to know whether I was infected with HIV, because I live in an area where there are mothers suffering from HIV." (PW-3P, PW-3B, PW-4B)

"I have had my blood checked at the health center but I don't know what the health check says." (PW-4P, PW-5P, PW-5B)

b. Understanding of HIV

Most pregnant women knew that HIV is an infectious disease transmitted through blood and sexual contact. Others held misconceptions, for example that HIV spreads through sharing food or glasses, or that it affects people who change partners.

"HIV is an infectious disease. Transmission is through blood, sexual contact if there is a wound." (PW-3P, PW-3B, PW-4B)

"According to my friends, we can't ask HIV sufferers for food and we can't share glasses, or we'll get infected." (PW-1P, PW-2P, PW-2B)

Theme 4. Factors influencing midwives' performance

a. Workload, time and setting

Long waiting times, many patients besides pregnant women, inadequate facilities, and outreach settings that offered no privacy prevented the full examination and private counseling.

"If there are pregnant women who undergo ANC examinations at the posyandu, the examination is only a casual interview, Leopold examination and provision of Fe tablets and casual counseling; the 10 T examination is not performed because the posyandu is held on the porch of the house, in an open space." (In-4P, In-5P, In-7P)

b. Limited counseling staff and training

Informants said that counseling staff were insufficient: counselors also worked as doctors, and doctors and midwives doubled as counselors or health promoters. Trained staff received certificates, but informants called for dedicated counselors.

"Actually, if we say it is sufficient, it is not yet, because we need a psychologist as our counselor, because our current counseling staff is only one and also serves as a doctor." (In-1P, In-2P, In-1B, In-2B)

c. Stigma and fear of refusal

Midwives feared that explaining the test would make women refuse. They also avoided lecture-style counseling in the community because of stigma, discrimination and taboo.

"In our counseling implementation we do not conduct it with lectures because we are afraid of stigma, discrimination and taboos, because our work area includes locations for women with social issues." (In-3B)

d. Geography, transport and weather

Remote villages, lack of public transport and weather limited access to the health center and the doctor. Midwives involved village heads and used two-wheeled vehicles to bring women in.

"I report to the village head so that I can take the pregnant mother to the health center using the village head's vehicle if the weather permits; we take her on a two-wheeled vehicle." (In-5B, In-8B)

e. Enabling factors

Informants also identified supports: Ministry of Health SOPs and guidelines, certified training, funding from grants, APBD and JKN, and separate VCT rooms. Some pregnant women accepted testing because they had heard about it from the church or mass media (In-4P, In-7P, In-8P). At Padang Pasir, the young mothers' class (IMUD) was described as an innovation that introduces HIV prevention (In-3P), and managers said that women who had

attended it did not refuse testing (In-1P, In-2P).

Discussions

This study shows that midwives' performance in PPIA was suboptimal in quality, even though testing was described as widely achieved. Coverage was reported to be high, yet the full 10-T examination, pre- and post-test counseling and informed consent were frequently omitted, so that many women were tested without understanding why. Similar gaps between routine testing and counseling quality have been described elsewhere. In northern Ghana, where HIV testing is routinely offered in ANC, not all women were informed before testing, pre-test counseling was limited although midwives said they provided it, and accounts differed on whether testing was voluntary (14,15). A systematic review of provider-initiated testing programs in sub-Saharan Africa likewise documented shortfalls in their operational implementation (16).

Routine testing is not testing without consent. The 5C principles apply to all testing models, including routine antenatal testing, and women must be able to decline (17). Presenting the test as a general "health check", as several midwives reported, falls short of this standard and of Article 293 of Health Law No. 17 of 2023, which requires adequate explanation before consent is given. In Bali, insufficient information from providers was also a barrier reported by mothers living with HIV (18). Managers described complete, consent-based services while midwives described omissions, which suggests that supervision based on coverage alone may not detect lapses in quality. Indicators for consent, counseling and communication of results should therefore be monitored alongside coverage.

The reason midwives gave most often for omitting counseling and consent was the fear that women would refuse or leave, in a context of stigma. Stigma is a recognized barrier along the PMTCT cascade (19), and in Indonesia fear of stigma and discrimination was a community-level barrier, while involvement of non-governmental organizations and cross-sector support were facilitators (8). Our findings add that stigma also shapes provider behavior: midwives altered how they counsel, avoiding lectures and presenting the test as a health check, to protect uptake, at the cost of informed choice. Approaches that reduce stigma without compromising consent, such as the group format of the IMUD class at Padang Pasir and partnerships with HIV foundations and religious leaders, as proposed in this study, deserve evaluation.

Performance was also constrained by time and system capacity. Long waiting times, many patients and open-space posyandu made the full 10-T examination and private counseling difficult. Counseling was concentrated in one doctor-counselor or the coordinator midwife,

and village midwives referred rather than counseled, although counseling is part of midwives' legal responsibility and competence (20,21). Indonesian evidence points in the same direction. In a national facility analysis, readiness for PMTCT was very low, and facilities with higher readiness and more trained counselors were more likely to achieve higher antenatal HIV testing coverage (8). Health-center heads and program managers in Yogyakarta identified needs for PMTCT training, infrastructure and HIV knowledge, and health-systems analyses have examined the reasons for low antenatal testing coverage in Indonesia (22). These findings support the recommendations to clarify the distribution of PPIA tasks among doctors, coordinator midwives and village midwives, to provide PPIA and counseling training, and to supply counseling aids usable in the open settings where village midwives work.

Access constraints were also visible. Remote villages, lack of public transport and weather limited ANC visits, and midwives bridged the gap with their own vehicles and the help of village heads, which sustained coverage but, in some accounts, without informed consent. Pregnant women's understanding of HIV was partial and included misconceptions, consistent with the limited HIV knowledge reported by Marsela et al. (2026) (23). Cadres, churches, mass media and the IMUD class were already shaping acceptance of testing, which supports the proposed collaboration with religious leaders and HIV-prevention foundations.

Strengths of this study include the purposive selection of two contrasting settings, triangulation across managers, midwives and pregnant women, and the combination of interviews with observation and document review. Its limitations are that findings rely largely on self-reported practice, which may be affected by social desirability; that pregnant women were identified at posyandu, so women who do not attend are not represented; and that only two health centers were studied, so transfer to other settings should be cautious. Private midwives, who provide much antenatal care in Indonesia (8), were not included.

4. CONCLUSIONS

Midwives' performance in implementing PPIA within integrated ANC was suboptimal in service quality despite reported HIV testing coverage. Key gaps included incomplete 10-T examinations, inconsistent counseling, and omitted informed consent, associated with workload, limited staff and training, stigma, and access barriers. Improvements require clearer task allocation, enhanced PPIA and counseling training, appropriate counseling materials, monitoring of consent and counseling practices, and collaboration with HIV-prevention organizations and religious leaders.

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Conflict of Interest

The authors declare no conflict of interest

Ethical Clearance

This study was reviewed and approved by the Health Research Ethics Committee (Komite Etik Penelitian Kesehatan, KEPK) of the Medan Health Polytechnic of the Ministry of Health, Indonesia, under Protocol No. 01.25 486/KEPK/POLTEKKES KEMENKES MEDAN 2024. Written informed consent was obtained from all participants before their participation in the study.

Author Contributions

J.B.S.: Conceptualization, funding acquisition, investigation, and writing – original draft. A.B.S.: Methodology-related instrument development, investigation, and project administration. S.: Investigation and resources. E.Y.: Methodology, investigation, project administration, and formal analysis. All authors contributed to manuscript review and editing and approved the final version for publication.

Artificial Intelligence (AI) Use Disclosure / AI Usage Statement

During the preparation of this manuscript, the authors used ChatGPT to assist with language editing, sentence structure, and readability. The authors subsequently reviewed and revised the AI-assisted text, verified its accuracy, and approved the final manuscript. The authors take full responsibility for the integrity, accuracy, and authenticity of the content.

Data Availability

The data supporting the findings of this study are available from the corresponding author upon reasonable request.

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