



INTERNASIONAL CONFERENCE ON MULTIDISCIPLINARY APPROACHES IN HEALTH SCIENCE

VOLUME 3, No 1. Tahun 2025 , ISSN 3032-4408 (Online)

<https://ejournal.poltekkes-denpasar.ac.id/index.php/icmahs>

Midwives as Catalysts for Change: A Literature Review on Reproductive Health Education and Promotion to Prevent Cervical Cancer

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Article history

Posted : 2025-09-20
Reviewed : 2025-10-26
Received : 2025-12-13

Abstract

Cervical cancer remains a major public health problem worldwide, particularly in low- and middle-income countries where screening coverage and awareness levels are still limited. Midwives, as primary providers of reproductive health services, play an important role in prevention strategies through education, counseling, and health promotion. This review examines how midwives contribute to reproductive health education and promotion for the prevention of cervical cancer. The method used in this search is based on PICO criteria and the scope of literature is identified using PRISMA-ScR. Relevant studies were identified from databases such as PubMed, Scopus, and ScienceDirect. The inclusion criteria comprised articles published between 2015–2025, written in English, open access, and relevant to the topic. A total of 10 articles were selected. The findings of this review indicate that midwives significantly improve reproductive health literacy and empower women to engage in preventive behaviors. This review identifies midwives as key actors who bridge clinical services with education and community engagement, framing them as agents of change in global cervical cancer prevention efforts. This study emphasizes the need to strengthen midwives' capacity to optimize their contribution, presenting an approach that goes beyond the traditional clinical perspective and places midwives on the global health agenda.

Keywords: cervical cancer, early detection, midwives, reproductive health education

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INTRODUCTION

Cervical cancer is a significant public health problem globally, including in Indonesia. According to data from the Global Burden of Cancer (GLOBOCAN) 2022, a total of 661,021 women were diagnosed with cervical cancer (Bray et al., 2024). China, India, and Indonesia had the highest number of cervical cancer cases in 2022. In Indonesia, this type of cancer ranks as the second most common cancer in women, after breast cancer. Since that year, an estimated 36,964 cases were reported, with 20,708 deaths caused by cervical cancer (Ferlay et al., 2021). Human papillomavirus (HPV) infection is a well-established major risk factor for this cancer. High-risk types of HPV can lead to cervical intraepithelial lesions that, over time, may develop into cervical cancer. This infection can be transmitted by sexually active individuals, both men and women (Baba et al., 2025). Women living with HIV are six times more likely to develop cervical cancer compared to the general population, and an estimated 5% of all cervical cancer cases are attributed to HIV (Rohayati et al., 2023). IARC 2021 data shows that in Indonesia, 0.3% of cervical cancer cases were caused by co-infection with HIV (Somia et al., 2025). Cervical cancer can be prevented through human papilloma virus (HPV) vaccination, early screening, and timely treatment of precancerous lesions (Vigneshwaran et al., 2023). The World Health Organisation (WHO) has recommended that countries integrate HPV vaccination into their routine vaccination programmes (World Health Organization, 2016). The provision of the HPV vaccine is supported by the issuance of the Decree of the Minister of Health of the Republic of Indonesia Number HK.01.07/MENKES/6779/2021 concerning the Introduction Program of the Human Papillomavirus Vaccine Immunization for the Years 2022–2024 (Kemenkes RI, 2021).

Despite the introduction of the HPV vaccine contributing to a global decline in cervical cancer incidence, comprehensive preventive and promotive efforts remain essential. Vaccine coverage remains uneven across countries and regions, with significant disparities between high-income and low to middle-income nations. As of 2024, global coverage for the first dose of HPV vaccination reached only about 31%, leaving many populations, particularly in low-resource settings, unprotected (World Health Organization, 2024).

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Furthermore, immunity gaps persist among communities not yet reached by immunization programs, and behavioral, cultural, and socioeconomic barriers continue to hinder participation in both vaccination and screening initiatives (Cangelosi et al., 2025; Han et al., 2025). Several studies have shown that limited awareness, misconceptions, embarrassment, religious or cultural taboos, and lack of access to healthcare services are key deterrents to cervical cancer prevention behaviors (Mantula et al., 2024; Rezapour et al., 2025). Moreover, the full impact of vaccination programs will take years to be fully realized, as most benefits occur after cohorts of vaccinated girls reach adulthood (Brisson et al., 2020). Therefore, continuous and comprehensive promotive-preventive strategies, including health education, community engagement, and culturally sensitive interventions, alongside ongoing health promotion, education, and early detection campaigns, are vital to ensure equitable access and to sustain the decline in cervical cancer incidence globally, while accelerating progress toward its elimination (Kutz et al., 2023; Sarikhani et al., 2024; Zheng et al., 2021). Regional disparities in the burden of cervical cancer are linked to unequal access to vaccination, screening, and treatment services, risk factors such as HIV prevalence, and social and economic determinants including gender bias (Chirwa, 2022). Many women are unable to access essential services, and communities with low socioeconomic status have higher incidences of cervical cancer (Symmons et al., 2025).

Early detection of cervical cancer is a preventive effort that involves raising public awareness of the risks and symptoms of cervical cancer. Although HPV testing is not recommended for women under the age of 30, low-risk young women are advised to begin screening with Pap smears at the age of 21 and continue until age 65, in accordance with recommendations from the United States Preventive Services Task Force (USPSTF) (Curry et al., 2018). The latest guidelines offer a screening interval of 3 to 5 years, depending on previous results and the combined use of Pap smears and HPV testing (Curry et al., 2018; Fowler et al., 2023). Factors influencing early detection include access to information, family support, support from healthcare professionals, and peer support. However, barriers may include discomfort, embarrassment, interactions with healthcare professionals, and past

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experiences (Chorley et al., 2017; Olewinski et al., 2025). Additionally, the women with lower health literacy are less likely to participate in screening programs and may have misconceptions about the purpose and process of screening (Kim & Han, 2016). This highlights the need for tailored education and communication strategies to effectively reach underserved populations, as health care provider recommendation has been consistently identified as one of the strongest predictors of screening uptake (Farajimakin, 2024). Despite positive attitudes, inadequate knowledge about HPV vaccination and screening could lead to misinformation and possible stigma since health professionals constantly interact with the public (Sherman et al., 2018).

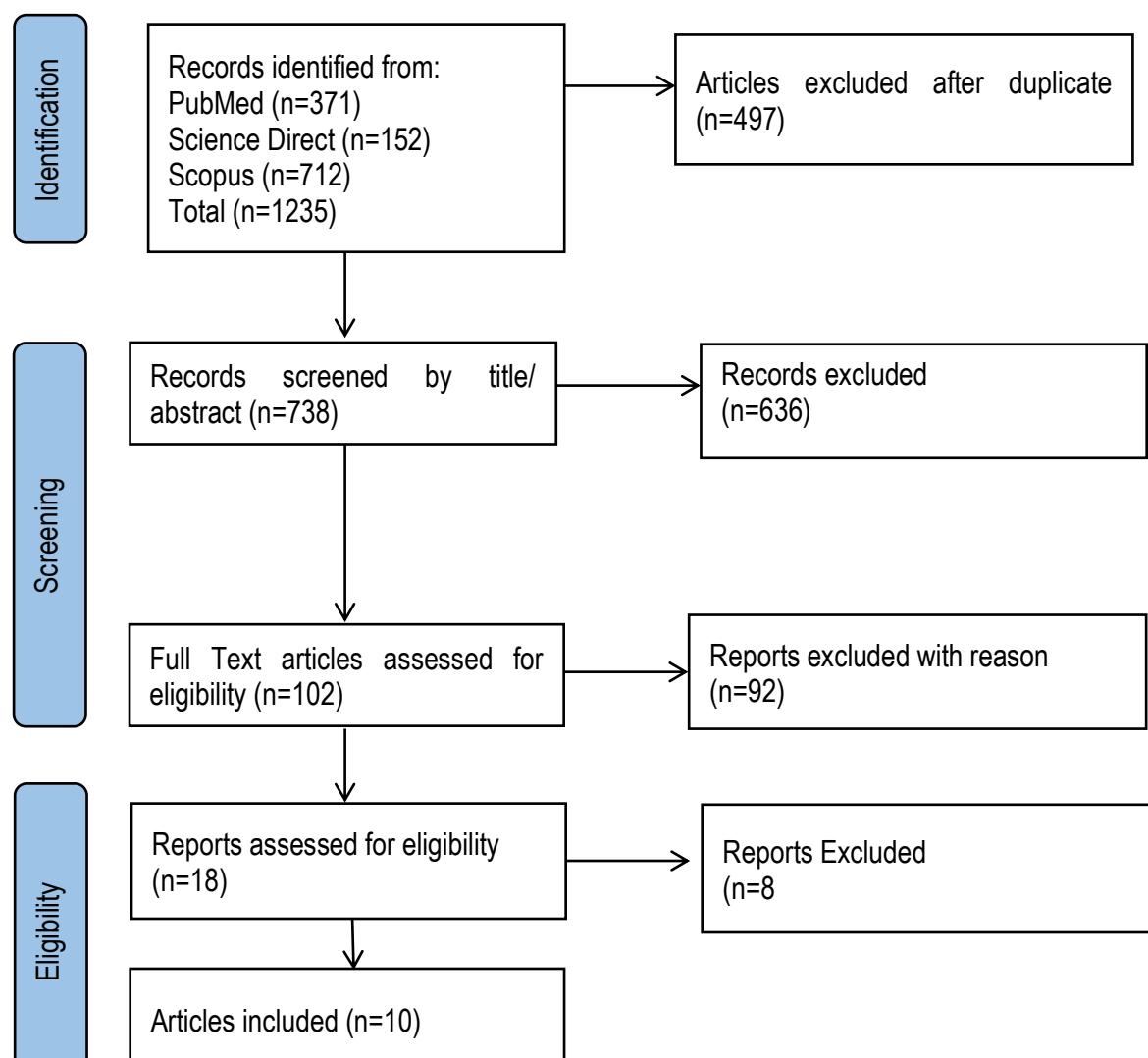
Midwives, as primary providers of reproductive health services, play a crucial role in prevention strategies by educating the public through culturally relevant health education and promotion strategies (Ebu et al., 2021; Yuliwati & Sulistyaningrum, 2025). As care providers, midwives deliver clinical services such as counseling, screening, and vaccination (Mabadha, 2023). In contrast, as catalysts, they act as change agents facilitating behavioral transformation, mobilizing community participation, and fostering intersectoral collaboration for sustained health promotion (Khomami et al., 2018; Seguin, 2023). Their close relationship with women across the reproductive life span allows them to bridge the gap between healthcare systems and the community, ensuring culturally sensitive, equitable, and continuous prevention efforts. Therefore, understanding and strengthening the catalytic role of midwives in promoting cervical cancer prevention is vital to achieving the WHO's global strategy for the elimination of cervical cancer as a public health problem by 2030. This literature review aims to examine how midwives contribute to reproductive health education and promotion for cervical cancer prevention.

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METHOD

The literature search in three databases (PubMed, Science Direct, and Scopus) identified a total of 1,235 articles (PubMed = 371, Science Direct = 152, Scopus = 712). After removing 497 duplicate articles, 738 records remained for title and abstract screening. A total of 636 articles were excluded at this stage because they were not relevant to the research objectives. The remaining 102 full-text articles were then assessed for eligibility. After further evaluation, 92 articles were excluded with specific reasons, leaving 18 reports for detailed eligibility assessment. Finally, 10 articles met the inclusion and exclusion criteria and were included in this review. The process of research selection is encapsulated in Figure 1.





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Figure 1. PRISMA flowchart

Search strategy

The objective of this search strategy was to identify published literature that was pertinent to the research topic. Using the PICO criteria (Population, Intervention, Comparison, Outcome). The PICO framework was employed to organize keywords, which were then used to construct the search strategy (Table 1).

Table 1. PICO Framework

PICO	Description
Population (P)	Women of reproductive age
Intervention (I)	Reproductive health education and promotion programs delivered by midwives (including HPV vaccination promotion and cervical cancer screening)
Comparison (C)	Women who receive no or minimal education from midwives
Outcome (O)	Increased awareness of cervical cancer, increased cervical cancer screening uptake, and behavioral change in reproductive health practices

Research question: How do midwives contribute to reproductive health education and promotion in the prevention of cervical cancer?"

Data Sources and Searches

PubMed, ScienceDirect, and Scopus comprised the databases that executed the search protocol for this literature review. The search was limited to studies published between 2015 until 2025 to ensure the incorporation of recent research while still covering relevant cervical cancer related work. We employed precise search terms that were associated with both physiological and psychosocial factors that affect the production of breast milk. Variations of

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these terms included: (Cervical Cancer) AND (early detection OR screening) AND (midwives OR healthcare provider) AND (reproductive health education).

Inclusion and Exclusion Criteria

The extracted studies were exported, and duplicates were eliminated. Team assessed the titles and abstracts according to established criteria. Studies were included if they involved women of reproductive age, examined the role of midwives in reproductive health education and promotion specifically aimed at the prevention of cervical cancer (such as increasing awareness of Pap smears or HPV vaccination), utilized observational or interventional designs (cohort, case control, RCT), evaluated relevant outcomes like knowledge improvement, screening uptake, and were peer reviewed articles published in English from 2015 onwards. Studies were excluded if they did not involve midwives, focused on other healthcare professionals or treatment/diagnosis of cervical cancer, involved animal subjects, were not peer reviewed, were case reports, or were published before 2015 or in languages other than English. Table 2 outlines the inclusion and exclusion criteria applied during the study selection process.

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Table 2. Summary of inclusion and exclusion criteria

Study characteristic	Inclusion	Exclusion
Population	Women of reproductive age (e.g., adolescents, pregnant/postpartum women)	Studies not involving women of reproductive age or not related to midwives' roles)
Study Design	Observational or interventional (cohort, case-control, RCTs)	Animal studies, laboratory-based research, case reports, editorials, opinion pieces
Outcomes	Knowledge improvement, Pap smear screening uptake, behavior change, cervical cancer prevention	Unrelated to cervical cancer prevention
Publication Language	Published in English	Non-English publications
Publication Type	Peer reviewed literature	Non peer reviewed literature (e.g., editorials, opinion pieces)
Publication Date	Published after 2015	Studies published prior to 2015

The outcomes from the database searches were entered into Rayyan, where two independent reviewers assessed the titles and abstracts according to the inclusion and exclusion criteria. Upon completion of the screening of titles and abstracts, full text articles were obtained for additional examination. To ensure the eligibility of the evidence in this review, we thoroughly assessed the quality and potential for bias of the ten studies we included. We used the Joanna Briggs Institute (JBI) Critical Appraisal Tool, which is well-suited for a variety of research designs, including qualitative, RCT, and cross-sectional

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studies (Moola et al., 2020). Using the JBI tool, we were able to classify each study's risk of bias as low, medium, or high (Aromataris, E. & Munn, 2020). To minimize subjectivity and increase the dependability of our findings, two reviewers independently appraised each study. All studies that satisfied the inclusion criteria were incorporated into the final synthesis. Finally, 10 articles met the inclusion and exclusion criteria and were included in this review.

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Table 3. Characteristics of the Selected Studies (n = 10)

No	Author(s) and Year	Country	Methods	Results	Key Findings
1	An Assessment of the Acceptability of Cervical Cancer Education Intervention Materials Among Healthcare Providers in Ghana (Bonnah & Williams, 2024). A1	Ghana	Cross sectional study	Culturally sensitive cervical cancer educational intervention materials have proven acceptable and effective in conveying cervical cancer prevention messages. These values-based messages are effective in motivating female participants to undergo cervical cancer screening	Validating an educational toolkit that midwives can use (posters/ audio/ video) to encourage screening the foundation of health promotion interventions by midwives
2	Knowledge, barriers and uptake towards Cervical Cancer screening among female health workers in Ghana: A perspective of	Ghana	Cross sectional study	This study has highlighted challenges that impact the current situation, including inadequate knowledge, high screening costs, discomfort and pain	Providing practical promotional strategies for midwives such as screening during ANC/KB visits and ensuring female examiners.

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	the Health Belief Model (Nyaaba & Akurugu, 2023). A2			screening, and the gender of the screening staff.	
3	Nurses' and midwives' knowledge, attitudes, and acceptance regarding human papillomavirus vaccination in Ghana (Ebu et al., 2021). A3	Ghana	Cross sectional study	41.5% of the participants had high levels of knowledge about cervical cancer risk factors, and 17.6% of the respondents had received at least one dose of the HPV vaccine.	study identified critical barriers that hindered participants from seeking HPV vaccination, including fear of adverse effects of HPV vaccination, fear of experiencing pain during injections and cost of the vaccine
4	Midwives as the Primary Care Providers: Knowledge, Attitude, Practice, and Skill of Early Detection of Cervical Cancer Using Visual Inspection with Acetic Acid	Indonesia	cross-sectional analytic observational study	interventions to improve midwives' knowledge through professional training programs and address any knowledge gaps can positively impact cervical cancer screening rates and early detection	Midwives can be the primary implementers of VIA screening; increased training will strengthen the role of midwives as educators and implementers of prevention.

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	(Winata et al., 2023). A4	VOLUME 3, No 1. Tahun 2025 ISSN 3032-4408 (Online) https://ejournal.poltekkes-denpasar.ac.id/index.php/icmahs		
5	Cervical cancer screening program in Indonesia: is it time for HPV-DNA tests? Results of a qualitative study exploring the stakeholders' perspectives (Ekawati et al., 2024). A5	Indonesia	Qualitative study	The VIA method is the most widely used, barriers include low coverage, JKN restrictions, and regulations, HPV-DNA is promising but requires readiness of personnel and facilities. HPV DNA testing remains widely available throughout Indonesia. Mass screening programs need to be further promoted, as well as their benefits in preventing severe morbidity and mortality associated with cervical cancer.
6	Healthcare provider challenges to early detection of cervical cancer at primary healthcare level (Nkurunziza et al., 2021). A6	Rwanda	Cross sectional study	Only 15 (17.6%) reported prior training on visual inspection with acetic acid (VIA) cervical cancer screening, and they were distributed among 6 of the 10 health centers surveyed. There is a gap in the number of primary healthcare providers. Health centers are the first point of contact for patients with the healthcare system, there is a need to improve knowledge and skills in cervical cancer screening and detection.

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				skills to perform pelvic exam and VIA cervical cancer screening at health centers in Rwanda	
7	The effect of the music supported education program on the awareness and health beliefs of Roma women about cervical cancer and screening (Aydin & Avci, 2025). A7	Turkey	Quasi experimental	After the program, 27.5% of women in the intervention group went on to get a Pap smear (versus 0% before). The intervention led to a significant increase in awareness about cervical cancer and improved beliefs on the HBM scale (post-test scores were much higher than pre-test)	The music-based education program had a positive effect on the perceived susceptibility to cervical cancer, cervical cancer seriousness, pap smear benefits and motivation factor scores of the participants in the experimental group compared to the participants in the control group.
8	Use of Spiritually Framed Information Messages to Improve Cancer Screening	Turkey	Randomized controlled trial	Spiritually framed in formational messages have a significant effect on self-efficacy and participation plans in breast and	Midwives as educators can use spiritual/ religious framing to overcome psychosocial barriers &

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	(Sabancı Baransel & Barut, 2023). A8	VOLUME 3, No 1. Tahun 2025 , ISSN 3032-4408 (Online) https://ejournal.poltekkes-denpasar.ac.id/index.php/mhs	cervical cancer	increase acceptance of screening
9	Women's knowledge and attitudes towards cervical cancer prevention: A qualitative study in the Spanish context (Borrull-Guardeña et al., 2021). A9	Spain	Qualitative study	Women expressed their knowledge about cervical cancer was low. None of the participants identified the human papillomavirus as a cause of cervical cancer, nor did they mention the vaccine as a preventive measure. There was a self-perceived low level of knowledge about cervical cancer risk factors and its prevention in the participants.
10	Knowledge, and practice of cervical cancer prevention and associated factors among commercial sex workers in Shashemene Town, West Arsi, Oromia Region, Ethiopia (Argaw et al.,	Ethiopia	Cross sectional study	50.1% had good knowledge about cervical cancer prevention; only 20.3% had ever been screened. Factors associated with knowledge included use of combined oral contraceptives and a history of sexually transmitted reducing cervical cancer through increased knowledge by integrating sexual and reproductive health services into cervical cancer screening clinics and providing them with audiovisual materials will

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RESULTS

Demographic Characteristic of Articles

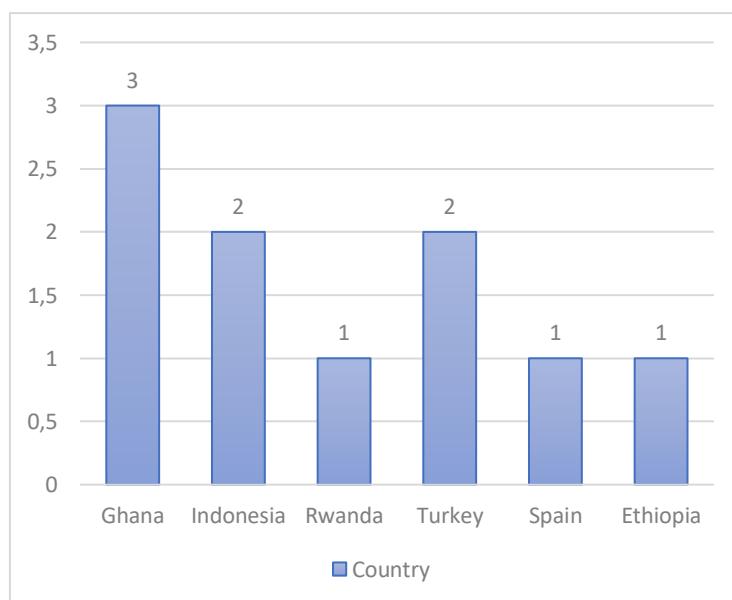


Figure 2. Article characteristics by country

Ten studies from six countries were selected for review, with a notable focus on developing countries (Figure 2). Ghana had the highest representation with three articles, while Indonesia and Turkey each contributed two articles. The other countries, Rwanda, Spain, and Ethiopia, each had one article. The studies primarily used cross-sectional, quasi-experimental, randomized controlled trial, and qualitative methods to explore various aspects of cervical cancer prevention.



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Thematic Analysis

Based on the analysis of article themes carried out after data analysis through data extraction and quality assessment of research articles, the themes of the selected research articles were identified, namely:

Table 4. Results of Article Synthesis

Theme	Sub-Theme	Articles
The Role of Midwives as Agents of Change	a. Screening and Follow up Implementers b. Health Advocates & Educators	A4, A6, A5, A2 A1, A3, A9
Reproductive Health Education & Promotion Strategy	a. Innovative Approaches b. Integration of Maternal/ ANC/ FP Services	A1, A7, A8, A10 A4, A6
Barriers and Driving Factors	a. Structural Barriers b. Psychosocial & Cultural Barriers	A2, A5, A6 A2, A9, A10
Policy Implications	a. Ongoing Training b. Policy & Financing	A4, A6 A1, A5

DISCUSSION

The Role of Midwives as Catalyst of Change

a. Screening and Follow up Implementers

Midwives emerged as the screening implementers closest to the community. Midwives act as *change agents* who influence women's understanding, attitudes, and health-seeking behaviors through culturally sensitive and empathic communication. Their continued interaction with communities enables them to address myths, fears, and taboos related to reproductive examinations and screening. (Winata et al., 2023) demonstrated that midwives' knowledge-attitude-skills competencies are associated with VIA practices, confirming that increased capacity directly impacts screening coverage.

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However, (Nkurunziza et al., 2021) revealed significant gaps at the primary care level—the proportion of VIA-trained personnel remains low and basic screening knowledge is uneven, hindering screening integration. (Ekawati et al., 2024) positions midwives as the “main force” for the adoption of more sensitive methods (HPV-DNA), but system readiness (training, logistics, referral channels) is a prerequisite. From the demand side, (Nyaaba & Akurugu, 2023) demonstrated that screening knowledge and uptake among female health workers (including midwives) are not yet optimal; this means that strategies to enhance the role of midwives must go hand in hand with strengthening the role models of screening practices among health workers.

b. Drivers of Multisectoral Collaboration

Midwives as catalysts also facilitate cross-sectoral collaboration between the health, education, and social sectors. They are able to connect communities with formal healthcare services, non-governmental organizations (NGOs), and educational institutions to expand the reach of cervical cancer promotion and early detection programs. Their involvement in local policy advocacy helps prioritize HPV vaccination and VIA screening programs at the regional level. Strengthening these collaborative linkages ensures that prevention efforts are sustained and culturally aligned across community settings (Ekawati et al., 2024; Seguin, 2023)

c. Health Advocates & Educators

The role of midwives as educators and advocates is crucial. (Bonnah & Williams, 2024) demonstrates that multichannel educational materials (posters, audio, and video) are well-received by healthcare workers and readily available for use by midwives for outreach. (Ebu et al., 2021) highlights gaps in knowledge and acceptance of the HPV vaccine among nurses and midwives; strengthening communication competencies and immunization content will enhance midwives' credibility as "trusted messengers." Women want professional guidance and reminders. Midwives are in an ideal position to bridge the information gap and encourage screening/vaccination decisions (Borrull-Guardeño et al., 2021)



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Reproductive Health Education & Promotion Strategy

a. Innovative Approaches

Contextual, multichannel educational materials such as posters, audio, and short videos, make it easier for midwives to convey three core messages: what HPV is, screening options (VIA/HPV DNA/ self-sampling), and post result steps. Because the language is culturally relevant, messages are easier to understand, conversations are more efficient, and screening decisions are made more quickly (Bonna & Williams, 2024).

Innovative approaches strengthen the educational effect. Music based education reduces resistance and creates an emotional “call to action” and also spiritual framing increases self-efficacy and acceptance within religious communities by positioning screening as a form of responsibility/effort to maintain family health, Both provide a “bridge” from knowledge to decisions, and are easily integrated into short midwife counseling sessions, integrated health post activities, or community meetings. (Aydin & Avci, 2025; Sabancı Baransel & Barut, 2023). For high-risk groups, education must be specific and targeted: messages about screening frequency, warning symptoms, and the “see act” process, along with easy access (STI clinics, mobile services) and rapid follow-up pathways. Here, midwives act as navigators, offering self-sampling options when available, scheduling on-site examinations, and ensuring referrals are completed (Argaw et al., 2022).

b. Integration of Maternal/ANC/FP Services

Integration with ANC/FP services is the most natural entry point because women are already present at these services. Midwives are able to integrate education and screening into routine visit flows, for example, screening during ANC or family planning consultations, thereby reducing transaction costs (time or embarrassment) (Winata et al., 2023). However, integration does not automatically occur without adequate training, equipment availability, and workload management (Nkurunziza et al., 2021). When these elements are met, integration creates continuity: from education → screening → results



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→ counseling → initial management/referral, all guided by midwives within a single service ecosystem.

Barriers to Reproductive Health Education

a. Structural Barriers

Structural barriers are evident in limited training, uneven distribution of tools and resources, and funding policies that do not fully support this. VIA training coverage is a major barrier to screening integration in primary care. Furthermore, without a regulatory and funding framework (e.g., insurance coverage) for HPV-DNA, this will be difficult to implement (Ekawati et al., 2024). Systemic barriers also influence the behavior of health workers, including midwives, so system change is as important as individual education (Nyaaba & Akurugu, 2023). Without structural reform, the role of midwives will be “trampled.” Investment is needed in training, facilities, and financing mechanisms that make screening by midwives standard.

b. Psychosocial & Cultural Barriers

On the individual and community level, fear of diagnosis, stigma, embarrassment about reproductive organ examinations, and low perceptions of vulnerability often prevent women from receiving screening. Women need clear and empathetic information, highlighted discomfort and anxiety as real barriers (Borrull-Guardeno et al., 2021; Nyaaba & Akurugu, 2023). Midwives are in a strong position to break down these barriers, as their relationships with patients are typically warm, recurring, and based on trust. Midwives need to normalize screening as routine care, use non-stigmatizing language, contrast myths with facts, and, where appropriate, involve partners/family members for support.

Policy Implications

a. Ongoing training

Midwifery competencies correlate with practice, but national training coverage remains limited (Nkurunziza et al., 2021; Winata et al., 2023). Therefore, in-service training should be rolled out periodically, emphasizing clinical skills (VIA/HPV-DNA, counseling for positive results, initial management/referral) and risk communication.

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INTERNASIONAL CONFERENCE ON

MULTIDISCIPLINARY APPROACHES IN HEALTH SCIENCE

VOLUME 3, No 1. Tahun 2025 , ISSN 3032-4408 (Online)
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Clinical supervision and simple audits (e.g., number of screenings per week, proportion of positive results treated) maintain quality and continuity.

b. Policy and Financing

Adoption of HPV-DNA requires a regulatory and funding framework to ensure services do not burden facilities or patients. This will fuel a policy of disseminating educational materials that have proven well received and are worthy of standardization and distribution across facilities. Performance incentives that link educational and screening outcomes to institutional recognition will motivate midwives to maintain good practices (Bonnah & Williams, 2024; Ekawati et al., 2024).

CONCLUSION(S)

Midwives as key actors who bridge clinical services with education and community engagement, framing them as agents of change in global cervical cancer prevention efforts. Lasting impact depends on ongoing training, clear referral pathways, and supportive financing to turn awareness into timely action.

Conflict of Interest

The author(s) declare that they have no conflict of interest regarding the preparation and content of this literature review article.

Acknowledgment

The author(s) gratefully acknowledge the academic support during the preparation of this literature review. Sincere thanks are also extended to supervising faculty and colleagues for their methodological and substantive feedback. Any remaining errors are the sole responsibility of the author(s).



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VOLUME 3, No 1. Tahun 2025 , ISSN 3032-4408 (Online)

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