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Competency-based education in midwifery: A comprehensive review of implementation strategies and outcomes in developing regions

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ABSTRACT

Competency-based education (CBE) is increasingly adopted as a reformative approach in midwifery education, particularly within developing regions such as Africa and South-East Asia. It aims to improve the preparedness of midwives to address complex maternal and newborn health challenges. This literature review employed a comprehensive analysis of 14 peer-reviewed studies, utilizing qualitative and mixed-method research designs. The studies included systematic reviews, gap analyses, and interview-based investigations across diverse educational settings. The review identified that CBE significantly enhances clinical competencies, theoretical knowledge, and professional self-confidence among midwifery students. Practical implementation strategies included the integration of simulation-based learning, continuous assessment, and mentorship models. However, significant barriers included inadequate institutional resources, faculty training, and resistance to pedagogical change. CBE offers a structured and outcomes-driven educational model that aligns theoretical instruction with practical skills acquisition. Its adoption addresses persistent gaps in midwifery training and contributes to workforce readiness in resource-limited settings. The findings suggest that CBE can serve as a transformative framework for midwifery education in developing regions. Policy support, investment in educator training, and curriculum reform are essential to realize its potential and improve reproductive health outcomes fully.

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ABSTRAK

Model pendidikan berbasis kompetensi (CBE) kini semakin diadopsi dalam program pendidikan kebidanan di negara-negara berkembang sebagai upaya untuk meningkatkan kesiapan mahasiswa dalam praktik klinis serta menjawab kekurangan tenaga profesional di bidang kesehatan ibu dan bayi. Kajian literatur ini melibatkan analisis terhadap 14 artikel ilmiah yang telah melalui proses peer-review. Pendekatan yang digunakan meliputi metode kualitatif dan campuran, mencakup tinjauan sistematis, analisis kesenjangan, serta studi wawancara yang dilakukan di berbagai institusi pendidikan di kawasan Afrika dan Asia Tenggara. Studi-studi yang dikaji menunjukkan bahwa penerapan CBE secara signifikan memperkuat keterampilan praktik, pemahaman konseptual, dan rasa percaya diri mahasiswa kebidanan. Pendekatan yang paling efektif mencakup penggunaan simulasi dalam pembelajaran, pendampingan akademik, dan penerapan alat evaluasi berbasis kompetensi. Kendati demikian, implementasi CBE masih menghadapi hambatan, seperti keterbatasan sumber daya institusional, kurangnya pelatihan bagi tenaga pengajar, dan resistensi terhadap perubahan kurikulum. CBE berperan penting dalam menjembatani teori dan praktik, serta menawarkan pendekatan sistematis untuk meningkatkan mutu pendidikan kebidanan. Fokusnya pada pencapaian hasil memungkinkan pembentukan tenaga profesional yang lebih siap menghadapi tantangan di lapangan. Penerapan CBE memiliki potensi besar dalam meningkatkan kualitas pendidikan kebidanan di wilayah dengan sumber daya terbatas. Untuk mencapai dampak yang berkelanjutan, diperlukan dukungan berupa pelatihan tenaga pengajar, pembaruan kebijakan pendidikan, serta penguatan infrastruktur institusi. Keberhasilan implementasi model ini berkontribusi pada peningkatan layanan kesehatan ibu dan bayi serta penguatan kapasitas tenaga kesehatan di negara-negara berkembang..

Kata Kunci: *kebidanan; pendidikan berbasis kompetensi ; pendidikan tenaga kesehatan; strategi implementasi*

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INTRODUCTION

Maternal healthcare remains a critical global challenge, particularly in developing regions where access to quality healthcare and skilled birth attendants can mean the difference between life and death. The World Health Organization estimates that approximately 295,000 women died during and following pregnancy and childbirth in 2017, with 94% of these deaths occurring in low and lower-middle-income countries (https://www.paho.org/en/topics/maternal-health). This stark reality underscores the urgent need for robust, effective midwifery education that can produce highly competent healthcare professionals capable of addressing this crisis. The journey of midwifery education represents a profound narrative of healthcare transformation, deeply intertwined with the most fundamental aspects of human life and survival (Adnani et al., 2023). Midwifery is more than a medical profession; it is a critical bridge between communities and healthcare systems, particularly in regions where access to quality reproductive healthcare remains a significant challenge (Jefford et al., 2019). The World Health Organization recognizes midwives as pivotal healthcare professionals who play a crucial role in reducing maternal and infant mortality rates (Renfrew & Malata, 2021).

Midwifery education stands at a critical juncture globally, with significant disparities between developed and developing regions affecting the quality and accessibility of maternal healthcare. While substantial research has focused on clinical aspects of midwifery practice, a significant gap exists in understanding how educational methodologies, particularly competency-based approaches, can be effectively implemented in resource-constrained settings. This gap is especially pronounced when considering the intersection of theoretical frameworks with practical implementation strategies in developing regions, where the need for skilled midwives is most acute. Midwifery education in many low- and middle-income countries faces persistent challenges, including limited institutional funding (https://www.who.int/teams/maternal-newborn-child-adolescent-health-and-ageing/maternal-health/midwifery/maternal-health-83-percent-midwifery-care) and fragmented and outdated curricula that are misaligned with international competency standards.

Work-based experiential learning, known as Work Integrated Learning (WIL), is becoming increasingly important in the education of health professionals, including midwifery training. This approach integrates classroom theory with hands-on practice in real clinical settings. Numerous studies have indicated that such a learning method enhances students' readiness to meet the demands of healthcare systems and comply with the standards set by regulatory health organizations (Murararaneza & Mtshali, 2021; Nyoni & Botma, 2019). Furthermore, it empowers future professionals to effectively respond to public expectations regarding health service delivery's quality, competence, and ethical standards (Firoozehchian et al., 2022; Moller et al., 2022).

The rapid advancement of science and technology in the healthcare sector has significantly reshaped the dynamics of health professions, including midwifery. As a result, practitioners are increasingly required to develop their competencies in alignment with current scientific progress continuously (Thacharodi et al., 2024). This evolving landscape necessitates educational approaches that can quickly adapt while ensuring graduates possess the core competencies for safe and effective practice. This review explores the emergence of competency-based education (CBE) in midwifery as a response to traditional educational models that often fail to bridge the gap between theoretical knowledge and practical application.

This review addresses a critical knowledge gap regarding effective strategies for preparing midwives to practice in challenging healthcare environments with limited resources by examining current research on CBE implementation in midwifery education, particularly in developing countries. This study aims to explore the implementation of competency-based education (CBE) in midwifery across various countries, with a particular focus on developing nations. It seeks to identify the challenges and enabling factors

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influencing CBE adoption, including resource availability, faculty preparedness, assessment methods, and the quality of clinical training. Additionally, the study examines whether the CBE approach effectively enhances students' readiness for clinical practice. Finally, it highlights the importance of adapting CBE models to local contexts and ensuring active engagement of stakeholders to support successful and sustainable implementation.

LITERATURE REVIEW

Competency-Based Education in Midwifery

Competency-Based Education (CBE) is an outcomes-based framework guiding curriculum design, assessment, and evaluation (Gruppen et al., 2019). Curry and Docherty emphasize that its focus is on demonstrated performance relevant to patient and community needs. In midwifery, CBE emphasizes acquiring essential knowledge, skills, attitudes, and behaviors for safe and autonomous clinical practice (Curry & Docherty, 2017). Chen et al. describe it as a transformative model integrating clinical reasoning, practical skills, cultural sensitivity, and professional identity. Unlike traditional models, CBE ensures demonstrated competency in real-world settings (Chen et al., 2024). Given midwifery's complex demands, including emotional intelligence and adaptive decision-making, CBE addresses the gap between theory and practice (Daneman & Benatar, 2019). Its application enhances students' readiness through practical and performance-based assessments (Hunter et al., 2022). The International Confederation of Midwives outlines global CBE-aligned standards, covering clinical, communicative, and culturally competent care (https://internationalmidwives.org/resources/global-standards-for-midwifery-education). Midwifery students are trained in critical thinking, patient-centered care, and real-time decision-making skills essential for resource-limited settings (Butler et al., 2018). CBE's relevance is amplified in underserved areas where midwives often serve as frontline providers. It prepares them to act with technical skill and compassion (Hunter et al., 2022). Evidence shows that CBE improves clinical reasoning, confidence, and hands-on capability (Luyben et al., 2017). Investments in quality CBE-based training could reduce maternal mortality by up to 83% (Toll et al., 2024).

Challenges of Implementation of CBE in Developing Countries

Implementing competency-based education (CBE) in midwifery faces significant challenges in developing countries, including limited resources, infrastructure gaps, and faculty shortages (Neal et al., 2023). Many institutions lack essential tools like simulation labs, updated materials, and digital technology, making hands-on training difficult. Faculty constraints are also critical, with few educators trained in CBE methods and limited opportunities for professional development, leading to high turnover and undermining program sustainability (Agyeman-Manu et al., 2023). Clinical practice opportunities are restricted due to overcrowded facilities, high patient loads, and a shortage of qualified preceptors. These issues hinder students' ability to develop and demonstrate essential competencies (Lawrence et al., 2022). Sociocultural factors such as traditional beliefs around childbirth may clash with formal training, requiring CBE to adapt to local contexts (Capper et al., 2023). Broader systemic issues like political instability, weak regulation, and limited midwifery career incentives further complicate implementation efforts (Bogren et al., 2020).

Effective Implementation of CBE

Implementing CBE successfully depends on adjusting standardized frameworks to align with local health needs, available resources, and sociocultural norms. Johnson et al. emphasize the importance of involving local stakeholders, including practicing midwives, educators, and community representatives, to ensure

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that CBE models are relevant and feasible (Johnson et al., 2016). Evidence suggests that contextually adapted models are more likely to be accepted and sustained than rigidly applied international frameworks (Butler et al., 2018; Ahmed & Fullerton, 2019). Innovative teaching and assessment methods also play a critical role in overcoming resource constraints. For instance, low-cost simulation models using locally available materials have proven effective for developing clinical skills in environments lacking high-tech simulators (Irfanullah et al., 2023). In addition, mobile learning technologies such as smartphone applications and digital platforms have expanded access to up-to-date, evidence-based content and self-assessment tools, especially during the Covid-19 pandemic, which disrupted in-person education (Thacharodi et al., 2024).

Comprehensive training programs can equip educators with the pedagogical skills required for CBE implementation and current clinical knowledge (Lewis et al., 2022). Similarly, structured support and formal recognition for clinical preceptors have been linked to improved student outcomes and increased retention of skilled mentors (Luyben et al., 2017). Collaborative partnerships further enhance CBE implementation. Strategic alliances between educational institutions, healthcare facilities, professional associations, and international organizations have enabled resource sharing, faculty exchanges, joint research, and co-development of curricula (Lu et al., 2023). Moreover, involving regulatory bodies in designing competency frameworks ensures alignment between educational outcomes and professional licensure standards (Bogren et al., 2018). Community engagement also strengthens the relevance and effectiveness of midwifery education. Programs involving communities in identifying maternal health priorities and evaluating graduate performance often produce midwives better prepared to address local needs (Adnani et al., 2022). Community-based clinical placements further enrich student learning by exposing them to diverse practice environments.

METHODS

Design

To ensure methodological rigor, a systematic integrative literature review was conducted. This comprehensive approach encompassed five critical stages: problem identification, literature retrieval, data appraisal, data synthesis, and the presentation of findings. The integrative review methodology is particularly advantageous in emerging or under-researched areas, as it permits the inclusion of qualitative and quantitative studies, thereby enabling a more holistic understanding of the topic (Westphaln et al., 2021).

Literature Search

The literature search followed the PIOS framework (Population, Interventions, Outcomes, Study design) to define inclusion and exclusion criteria (see **Table 1**).

Table 1. PIOS Framework

Population	Intervensions	Outcome	Study Design
Midwifery Education in a Developing Country	Implementation of Competency-Based Education (CBE) in Midwifery	Enhanced Midwifery Professionals	Comprehensive Literature Review

Source: Research 2025

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Aligned with PRISMA guidelines (Page et al., 2021), the search was conducted across Scopus, ScienceDirect, and PubMed databases. Keywords included “competency-based education,” “midwifery,” and “healthcare education.”

1,568 records were retrieved, with 935 remaining after duplicates were removed. References were screened using Rayyan (Ouzzani et al., 2016), resulting in 34 articles for full-text review. Fourteen articles met the eligibility criteria, while 20 were excluded. **Figure 1** presents the PRISMA flowchart of the selection process.

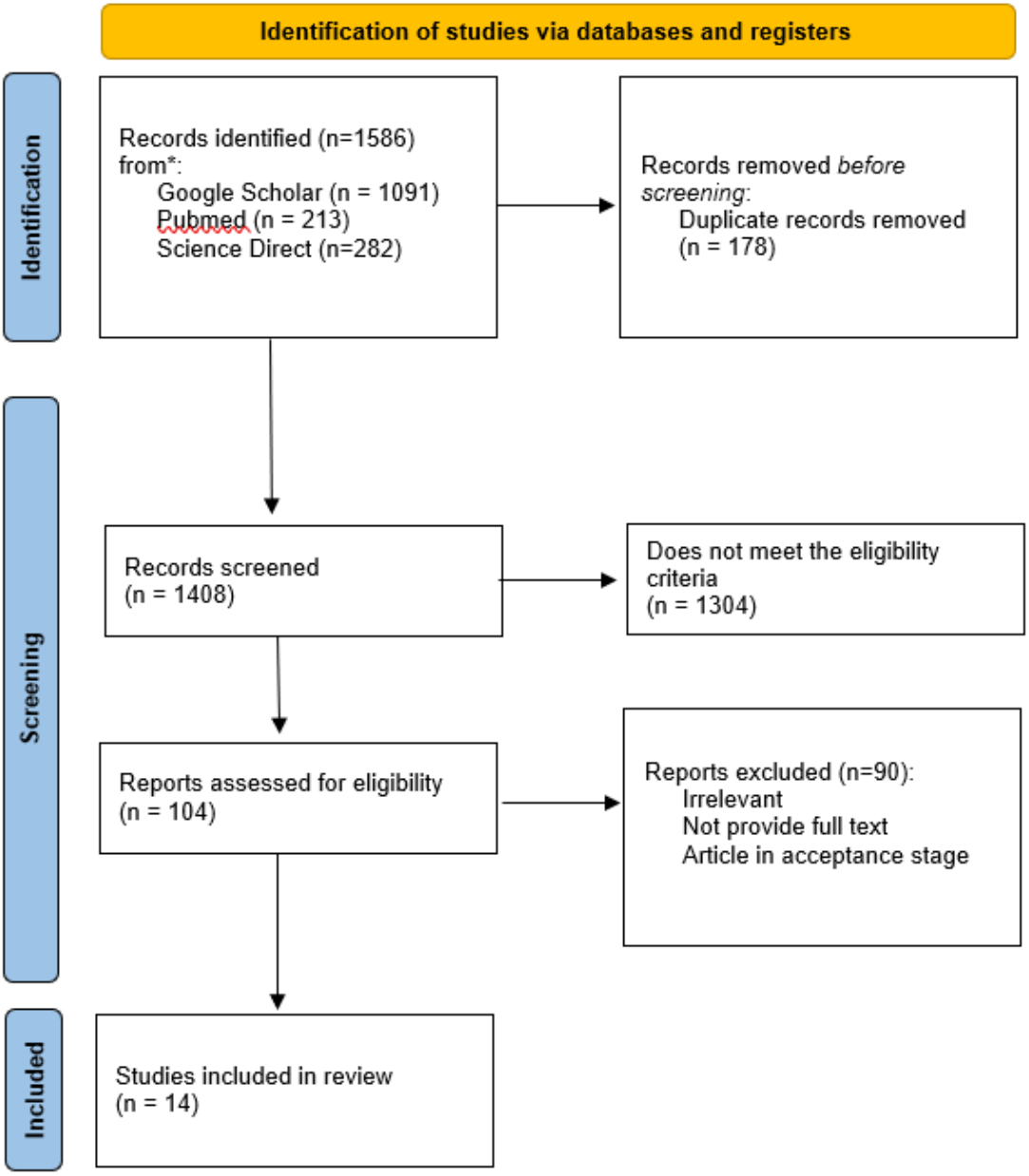

Figure 1. PRISMA Flowchart
Source: Research 2025

The PRISMA flow diagram in **Figure 1** outlines the systematic selection process. In the identification stage, articles were successfully found through searches in three databases (n = 1,586), namely Google Scholar (n = 1,091), Science Direct (n = 282), and PubMed (n = 213). Before entering the screening stage, duplicate articles were removed (n = 178). In the initial screening, articles were reviewed based on their

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titles and abstracts (n = 1,408). Articles were eliminated because they did not meet the criteria, such as not being open access, using a language other than English, and articles with a focus irrelevant to the research (n = 1,304). Furthermore, articles were selected in more depth to assess the eligibility of their full text content (n = 104). Finally, as many as (n = 14) articles met all inclusion criteria and were included in the final analysis for further review.

Data Evaluation

Establishing well-defined inclusion and exclusion criteria is essential when conducting a literature search, as it facilitates identifying and selecting pertinent studies for review. The inclusion criteria for this review were literature reviews, qualitative or quantitative studies, and meta-analyses on competency-based education (CBE) in midwifery. The population of interest was midwives and nurses, focusing on CBE implementation, barriers, facilitators, and challenges. Only peer-reviewed, English-language articles published in the past five years from trusted scientific journals or conferences were included. Opinion pieces, editorials, and non-peer-reviewed articles were excluded.

Data Analysis

The systematic review reveals a clear geographic focus in midwifery education research. Africa dominates, representing 64% (9 of 14) of the included studies, with research conducted in Morocco (2), Rwanda (2), South Africa (1), Lesotho (1), the Democratic Republic of Congo (1), and broader Sub-Saharan Africa (2). Asia follows with 29% (4 studies), including three from Iran and one regional study covering South-East Asia. The remaining 7% (1 study) is a multi-continental comparison across Benin, Malawi, Tanzania, and Uganda.

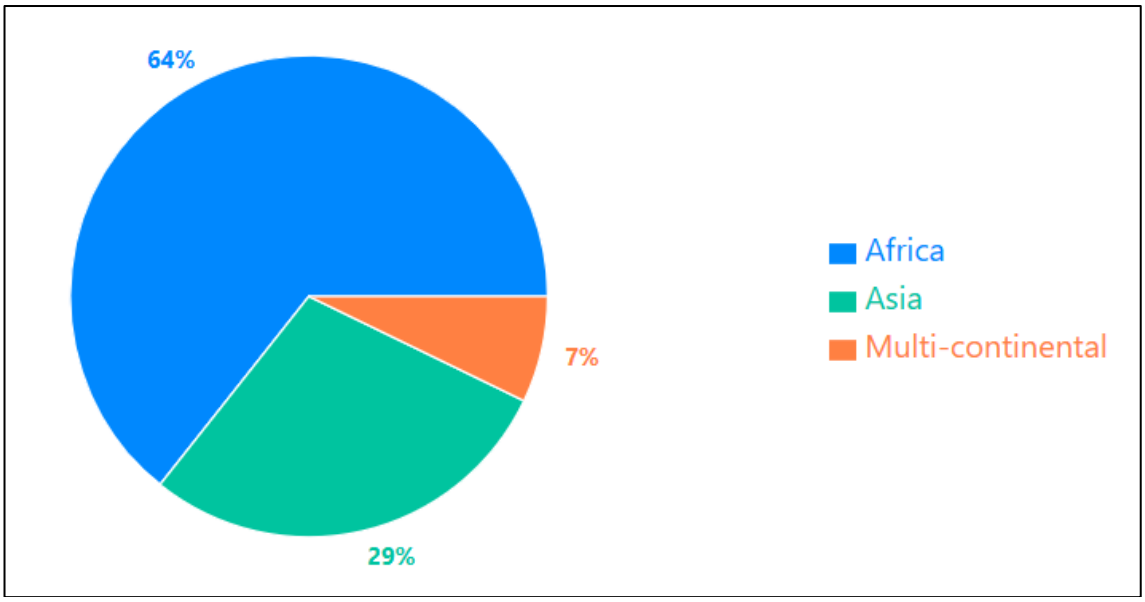

Figure 2. Analysis by Continent
Source: Research 2025

This geographical distribution in **Figure 2** highlights the scholarly emphasis on improving midwifery education in developing regions, particularly in Africa, where maternal healthcare workforce development is critical for addressing maternal and infant mortality. The research concentration in these regions likely reflects the urgent need for strengthened midwifery education systems and the international focus on supporting healthcare workforce development in resource-constrained settings.

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Articles that fulfill the established criteria are compiled into a data extraction table. **Table 2** includes key information such as the article title and year of publication, the country where the study was conducted, the research objectives, the methodology and instruments employed, the study population and sample, and finally, the main findings of the research.

Table 2. Data Extraction

No	Authors, Year, Country	Purpose	Methods	Key Findings
1	Ige et al., 2023 Africa	To review literature on CBE implementation in midwifery in Africa	Scoping review (PRISMA-ScR)	Only 17 of 54 African countries had literature; CBE adoption is limited, with weak monitoring systems.
2	Nyoni & Botma, 2019 Lesotho	Analyze gaps after 3 years of CBE implementation	Gap analysis (admin, educators, students)	Significant gap between designed and implemented curriculum; structural adjustments needed.
3	Gholamian et al., 2022 Iran	Compare CBE vs conventional methods on clinical skills	Semi-experimental (34 students, 2 groups)	CBE significantly improved pelvic exam, Leopold maneuvers, and suturing skills.
4	Hakimi et al., 2021 Iran	Evaluate CBE impact on knowledge, skills, confidence in PPH	Experimental (86 students, 3 timepoints)	Post-intervention scores significantly higher in CBE group across all aspects.
5	Murararaneza & Mtshali, 2018 Rwanda	Develop mid-range theory for CBE	Grounded theory	Implementation involves delivery & evaluation; affects system, graduates, education.
6	Nyoni & Botma, 2019 South Africa	Develop framework for sustainable curriculum innovation	Mixed methods with stakeholder validation	Framework created integrating evidence and implementers' experience.
7	Abouzaj, 2019 Morocco	Simplify and explain CBE concept for nursing/midwifery training	Narrative review	Explains competencies, teaching strategies, and assessment tools.
8	Firoozehchian et al., 2022 Iran	Identify competency domains for assessment tool	Qualitative (24 participants, interviews)	Four domains found: ethics, holistic care, communication, professional development.
9	Murararaneza & Mtshali, 2021 Rwanda	Explore reform planning for CBE	In-depth interviews (17 staff)	Planning includes team setup, situational analysis, curriculum development.
10	Bogren et al., 2021 Congo	Identify barriers in midwifery education	FGDs (85 educators, 4 institutions)	Key barriers: poor environment, unqualified staff, lack of communication.
11	Warren et al., 2023 Sub-Saharan Africa	Review pre-service midwifery education	Scoping review (2015-2021)	Misalignment with global standards; infrastructure and teaching capacity lacking.
12	Bogren et al., 2022 Southeast Asia	Review barriers and facilitators of quality education	Integrative review	Many programs below ICM standards; mentorship and educator qualifications help.

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No	Authors, Year, Country	Purpose	Methods	Key Findings
13	Superieure, 2024 Morocco	Explore pedagogical changes among educators	Survey (150 students)	Little use of CBE methods; clinical supervision lacking; objective-based approach still used.
14	Moller et al., 2022 Benin, Malawi, Tanzania, Uganda	Assess curricula against ICM standards	Curriculum review	None of the 10 curricula met ICM standards; critical gaps identified.

Source: Research 2025

The adoption of Competency-Based Education (CBE) in midwifery is progressing globally, with countries like Iran, Rwanda, and several in Sub-Saharan Africa integrating it into curricula. CBE has been shown to enhance students' clinical skills, knowledge, and confidence. However, implementation remains uneven due to limited infrastructure, lack of trained educators, and weak evaluation systems. Many institutions still rely on traditional teaching methods, and gaps often exist between intended curricula and actual practice. Successful CBE adoption requires systemic support, including faculty development, improved clinical environments, better coordination with healthcare facilities, and culturally appropriate assessment tools.

RESULTS AND DISCUSSION

Results

Current State of Competency-Based Midwifery Education

The global shift toward competency-based education in midwifery can be understood through Gruppen et al. outcomes-based framework (Gruppen et al., 2019). The uneven implementation observed across sub-Saharan Africa (Viswanathan et al., 2021) and Morocco (Abouzaj, 2019) reflects what Capper et al. identify as the tension between standardized competency frameworks and contextual adaptation (Capper et al., 2023). The gaps between CBE theory and practice highlighted by Bogren et al. demonstrate the disconnect between the transformative model and practical implementation realities (Bogren et al., 2022). These findings validate ICM's theoretical position that CBE should emphasize "essential knowledge, skills, attitudes, and behaviors for safe and autonomous clinical practice," while revealing that actual implementation often falls short of this ideal. The inconsistent application in countries like Iran (Superieure, 2024) illustrates what (Ahmed & Fullerton, 2019) theorized about the challenges of transitioning from traditional to competency-based models.

Implementation Frameworks and Approaches

The middle-range theory proposed by Murarane za and Mtshali provides a systems thinking approach that explains why fragmented implementation efforts often fail (Murarane za & Mtshali, 2018). Their emphasis on "interconnectedness of educational inputs, processes, and outcomes" directly explains the implementation barriers documented in the DRC (Bogren et al., 2021) and Lesotho (Nyoni & Botma, 2019). The framework Nyoni & Botma focus on "structural, cultural, contextual, and leadership factors" aligns with Johnson et al.'s theoretical position on stakeholder involvement and contextual adaptation (Johnson et al., 2016; Nyoni & Botma, 2019). The findings from Morocco Naciri et al., showing institutions maintaining traditional methods despite formal CBE adoption, validate what Daneman and Daneman described as the "gap between theory and practice" in midwifery education (Daneman & Benatar, 2019; Naciri et al., 2022).

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Superieure emphasis on needs assessment and stakeholder engagement represents an application of participatory educational theory, which is consistent with the collaborative partnerships described by Lu et al. as essential for successful implementation (Superieure, 2024; Lu et al., 2023).

Effectiveness and Outcomes of CBE in Midwifery Education

The improved clinical skills, procedural proficiency, and self-confidence documented by Hakimi et al. confirm the theoretical predictions of Hunter et al. regarding CBE's capacity to enhance readiness through "practical and performance-based assessments" (Hakimi et al., 2021; Hunter et al., 2022). However, the gaps in complex clinical reasoning noted by Moller et al. challenge the comprehensive effectiveness claimed in the theoretical literature (Moller et al., 2022). These findings partially support Luyben et al. theoretical position on CBE improving clinical reasoning and hands-on capability, while suggesting that full realization of this potential requires more complete implementation (Luyben et al., 2017). The theoretical claim by Toll et al. that quality CBE could reduce maternal mortality by up to 83% remains aspirational given the implementation challenges documented across multiple studies (Toll et al., 2024).

Barriers and Challenges to CBE Implementation

The resource constraints, faculty limitations, and clinical practice restrictions documented by Bogren et al. in the DRC exemplify what Neal et al. theorized as the primary challenges of CBE implementation in developing countries (Bogren et al., 2021; Neal et al., 2023). The faculty resistance to change noted by Bogren et al. can be understood through organizational change theory, Nyoni and Botma, which emphasizes cultural and contextual factors in educational transformation (Bogren et al., 2022; Nyoni & Botma, 2019). The misconceptions about CBE principles among Moroccan educators (Abouzaj, 2019) reflect the faculty development challenges theorized by Johnson et al. as critical for successful implementation (Johnson et al., 2016). Infrastructure limitations documented across multiple studies validate the WHO's theoretical position on the essential role of material resources in CBE implementation. The sociocultural factors identified by Capper et al. as potential barriers offer a theoretical lens for understanding the contextual adaptation needs documented in studies from Morocco, Lesotho, and the DRC (Capper et al., 2023).

Facilitators and Enablers of Successful CBE Implementation

The importance of strong leadership, emphasized by Nyoni and Botma, Murararaneza and Mtshali, applies transformational leadership theory to CBE implementation, explaining why leadership emerged as a key success factor across multiple studies (Murararaneza & Mtshali, 2021; Nyoni & Botma, 2019). The stakeholder engagement highlighted by multiple researchers represents an application of collaborative educational theory, which posits that curriculum relevance depends on inclusive development processes. Faculty development in CBE methodologies aligns with the theoretical position of Johnson et al. on educator preparation as a prerequisite for successful implementation (Johnson et al., 2016). The phased implementation approach suggested by Yoni and Botma, Murararaneza and Mtshali reflects incremental change theory, emphasizing gradual adaptation over abrupt transformation. The community engagement practices identified as success factors align with Adnani et al. theoretical framework emphasizing community involvement in identifying health priorities and evaluating graduate performance (Adnani et al., 2022; Murararaneza & Mtshali, 2018; Nyoni & Botma, 2019).

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Discussion

Implementation Gap Between Theory and Practice

A prominent theme emerging from this literature review is the substantial implementation gap between theoretical CBE models and practical educational realities. While competency-based approaches have been widely adopted at policy and curriculum design levels, their translation into effective teaching, learning, and assessment practices remains inconsistent and often superficial. For instance, Bharj et al. documented inconsistencies in midwifery curricula across institutions that formally adopted the ICM standards but continued to assess students using traditional, time-based metrics and written exams, rather than practice-based competencies (Bharj et al., 2016). This implementation gap manifests across multiple dimensions: faculty preparedness, resource adequacy, assessment practices, and clinical education components. Murararaneza and Mtshali emphasized that midwifery educators often revert to teacher-centered approaches despite policy alignment with CBE due to limited training and institutional inertia (Murararaneza & Mtshali, 2020). These findings reflect broader educational change literature suggesting that curricular reforms often fail when insufficient attention is given to local implementation contexts, capacity building, and change management processes. Importantly, the gap is not confined to low-resource settings.

In Uganda, Bogren et al. successfully overcame resistance through a co-designed curriculum approach (Bogren et al., 2022). By involving local midwives, educators, and policymakers in developing the competency framework, they were able to ensure local relevance and support. These findings suggest that the barriers to effective CBE implementation are not solely attributable to resource limitations but also entrenched cultural norms, institutional structures, and conventional pedagogical practices. Consequently, implementation strategies must transcend uniform, standardized models and be tailored to the specific context in which they are applied. This necessitates a thorough and critical evaluation of national educational systems, including infrastructure, faculty dynamics, and regulatory frameworks, to support meaningful and sustainable curriculum transformation. These conclusions align with curriculum reform experiences in the United States, where Anderson underscored the importance of iterative, adaptive processes over rigid, prescriptive approaches (Anderson, 2018).

Resource Implications of Quality CBE Implementation

The literature consistently emphasizes the substantial resource demands of quality CBE implementation in midwifery. Matlala highlighted a case in a rural South African nursing college where simulation labs were either non-functional or under-equipped, hindering students' ability to practice clinical decision-making before encountering real patients (Matlala, 2021). Similarly, Mmari et al. described how a Tanzanian midwifery school with a 1:80 teacher-to-student ratio struggled to provide meaningful supervision, resulting in students completing clinical placements without performing key procedures independently (Mmari et al., 2019). These data demonstrate how the gap between ambitious competency frameworks and the reality of educational infrastructure undermines the realization of CBE principles. Nonetheless, some evidence points to potential solutions. Gcawu and van Rooyen describe a phased implementation model where simulation-based education was gradually scaled using existing resources, accompanied by preceptor training (Gcawu & van Rooyen, 2022). While resource scarcity presents a genuine challenge, strategic resource reallocation, prioritization, and innovation, such as mobile clinical teaching units or e-learning platforms, can create opportunities for meaningful CBE advancement even in constrained contexts.

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Faculty Development as a Critical Success Factor

Faculty readiness is perhaps the most consistently cited determinant of successful CBE implementation. For example, Adnani et al. found that in Indonesia, midwifery educators expressed confusion and anxiety over implementing CBE due to a lack of clarity on assessment criteria and teaching expectations (Adnani et al., 2022). Faculty tended to fall back on traditional content delivery models without a foundational understanding of CBE principles. Moreover, a study conducted in Kenya by Murararaneza and Mtshali demonstrated that resistance to curriculum change could be effectively addressed by implementing a year-long mentorship and peer-learning program (Murararaneza & Mtshali, 2020). This initiative proved successful in facilitating pedagogical transformation among midwifery educators. Initially hesitant instructors exhibited notable shifts in their teaching approaches following participation in the program, incorporating simulation-based methods, case-based learning, and formative competency assessments into their classroom practices. These findings align with Aldridge and McLure, who argued that educators' beliefs and identities shape whether they internalize and operationalize pedagogical change (Aldridge & McLure, 2024). Effective faculty development should thus address not only technical knowledge, but also educators' attitudes, confidence, and capacity to navigate the paradigm shift from content transmission to performance-based teaching.

Assessment Challenges in CBE Implementation

Murararaneza and Mtshali identified regulatory rigidity as a barrier to innovation (Murararaneza & Mtshali, 2020). In Rwanda, educators attempting to implement workplace-based assessments (WBAs) faced resistance from accreditation bodies that had not yet recognized these tools as valid. These examples underscore the need for systemic alignment. Without congruent reforms in assessment regulations, curriculum design, and faculty training, the promise of CBE remains unfulfilled. Investment in assessment literacy both technical and philosophical among educators, combined with policy-level support for alternative assessment frameworks, is essential. Simulation-based assessment, reflective portfolios, and longitudinal evaluations could help bridge the theory-practice gap.

Clinical Education Quality as a Determining Factor

Given midwifery's practice-based nature, the quality of clinical education is central to CBE success. Yet, numerous studies reveal significant disconnects between intended competencies and real-world training. Gcawu and van Rooyen documented that midwifery students in South Africa often faced inconsistent supervision during clinical placements, with preceptors sometimes unaware of the educational goals of CBE (Gcawu & van Rooyen, 2022). In Tanzania, Mmari et al. noted that students were often relegated to observation roles during deliveries, never developing hands-on competency due to staffing shortages and patient volume pressures (Mmari et al., 2019). This limited the authenticity of clinical learning environments, undermining CBE's experiential learning foundation. To counter these issues, several interventions have been piloted. Gcawu and van Rooyen described structured preceptor training and standardized clinical teaching protocols that improved student engagement and performance. Interprofessional Education (IPE) has also proven to be an effective approach (Gcawu & van Rooyen, 2022). According to Susanti et al. students who participated in interprofessional clinical simulations demonstrated improved abilities in teamwork, communication, and leadership. These enhanced competencies are well-aligned with the collaborative practice focus central to the CBE model (Susanti et al., 2025). Ensuring consistent supervision, aligning clinical teaching with educational goals, and

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implementing structured interventions such as preceptor training and interprofessional simulations are essential to bridging the gap between theoretical competencies and practical skill development.

Context-Sensitivity in CBE Implementation

The importance of adapting CBE implementation to local contexts is a key theme in the literature. Although CBE provides a structured way to define and assess health professionals' skills, simply copying international models without adjusting them to local needs can be ineffective. Curry and Docherty noted that cultural factors such as views on authority, gender roles, and how knowledge is shared can influence how competency frameworks are understood and applied (Curry & Docherty, 2017). For example, in Indonesia, Adnani et al. found that traditional hierarchical norms made it difficult to use collaborative teaching methods without first addressing deeper cultural issues (Adnani et al., 2022). On the other hand, in Uganda, Bogren et al. described a successful curriculum reform that involved midwives, educators, and policymakers in jointly developing a competency framework tailored to the local context (Bogren et al., 2022). These examples show that involving local stakeholders is essential, not just to make implementation easier, but also to ensure the approach is relevant and meaningful. Therefore, countries are encouraged to use flexible frameworks that maintain essential professional competencies while allowing for adjustments based on regional circumstances. This kind of adaptive approach supports broader efforts to decolonize global health education and avoid rigid, top-down solutions.

CONCLUSION

To effectively implement competency-based education (CBE) in midwifery programs, policymakers, educators, and institutions must take deliberate and concrete steps. First, it is essential to develop flexible frameworks that are sensitive to the local context by adapting CBE implementation strategies according to the specific infrastructure, cultural factors, and resource availability in each region, rather than applying a one-size-fits-all universal model. Next, investing in faculty development is crucial. Ongoing training and mentorship programs should be provided to strengthen educators' understanding of CBE principles while enhancing their pedagogical skills. Additionally, assessment practices need to be reformed to align with the desired competency outcomes, incorporating workplace-based assessments, simulations, and formative evaluations that better capture practical skills and comprehensive competency aspects. Strengthening partnerships between academic institutions and clinical practice sites is also a priority, ensuring high-quality practical training and consistent supervision for students during their clinical placements. The implementation of CBE reforms should be carried out in a phased and iterative manner, with continuous monitoring and adjustments based on feedback from faculty, students, and clinical partners.

This review notes limited and inconsistent data on CBE's long-term impact, especially in resource-poor settings, making broad conclusions difficult. Future research should focus on longitudinal studies tracking graduates' clinical performance and effects on maternal and newborn health. Additionally, studies on cost-effectiveness, sustainability, and best practices for faculty development and assessment innovations in low-resource environments are crucial to optimize CBE for wider adoption..

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REFERENCES

Abouzaj, S. (2019). Competency-based approach in training nurses and midwives in Morocco demystifies the better use. *Advances in Medical Education and Practice*, *10*(1), 1069-1079.

Adnani, Q. E. S., Gilkison, A., & McAra-Couper, J. (2022). Strengthening midwifery education through clinical experience: Findings from a qualitative study in Indonesia. *Women and Birth*, *35*(1), 87-95.

Adnani, Q. E. S., Gilkison, A., & McAra-Couper, J. (2023). A historical narrative of the development of midwifery education in Indonesia. *Women and Birth*, *36*(1), 175-178.

Agyeman-Manu, K., Ghebreyesus, T. A., Maait, M., Rafila, A., Tom, L., Lima, N. T., & Wangmo, D. (2023). Prioritising the health and care workforce shortage: Protect, invest, together. *The Lancet Global Health*, *11*(8), 1162-1164.

Ahmed, S., & Fullerton, J. (2019). Challenges of reducing maternal and neonatal mortality in Indonesia: Ways forward. *International Journal of Gynecology & Obstetrics*, *144*(1), 1-3.

Aldridge, J. M., & McLure, F. I. (2024). Preparing schools for educational change: Barriers and supports–a systematic literature review. *Leadership and Policy in schools*, *23*(3), 486-511.

Anderson, L. (2018). Competency-based education: Recent policy trends. *The Journal of Competency-Based Education*, *3*(1), 1-5.

Bharj, K. K., Luyben, A., Avery, M. D., Johnson, P. G., Barger, M. K., & Bick, D. (2016). An agenda for midwifery education: Advancing the state of the world′ s midwifery. *Midwifery*, *33*(1), 3-6.

Bogren, M., Alesö, A., Teklemariam, M., Sjöblom, H., Hammarbäck, L., & Erlandsson, K. (2022). Facilitators of and barriers to providing high-quality midwifery education in South-East Asia—An integrative review. *Women and Birth*, *35*(3), 199-210.

Bogren, M., Grahn, M., Kaboru, B. B., & Berg, M. (2020). Midwives' challenges and factors that motivate them to remain in their workplace in the Democratic Republic of Congo-an interview study. *Human Resources for Health*, *18*(1), 1-10.

Bogren, M., Kaboru, B. B., & Berg, M. (2021). Barriers to delivering quality midwifery education programmes in the Democratic Republic of Congo — An interview study with educators and clinical preceptors. *Women and Birth*, *34*(1), 67-75.

Butler, M. M., Fullerton, J. T., & Aman, C. (2018). Competence for basic midwifery practice: Updating the ICM essential competencies. *Midwifery*, *66*(2), 168-175.

Capper, T. S., Williamson, M., & Chee, R. (2023). How is cultural safety understood and translated into midwifery practice? A scoping review and thematic analysis. *Nurse Education in Practice*, *66*(6), 1-12.

Chen, A. M. H., Kleppinger, E. L., Churchwell, M. D., & Rhoney, D. H. (2024). Examining competency-based education through the lens of implementation science: A scoping review. *American Journal of Pharmaceutical Education*, *88*(2), 1-20.

Curry, L., & Docherty, M. (2017). Implementing competency-based education. *Collected Essays on Learning and Teaching*, *10*(4), 61-73.

https://doi.org/10.17509/jik.v22i2.83661

Daneman, D., & Benatar, S. (2019). Dynamic tensions following new pedagogy in undergraduate medical education. *Academic Medicine: Journal of the Association of American Medical Colleges*, *94*(12), 1873-1877.

Firoozehchian, F., Zareiyan, A., Geranmayeh, M., & Behboodi Moghadam, Z. (2022). Domains of competence in midwifery students: a basis for developing a competence assessment tool for Iranian undergraduate midwifery students. *BMC Medical Education*, *22*(1), 1-15.

Gcawu, S. N., & van Rooyen, D. (2022). Clinical teaching practices of nurse educators: An integrative literature review. *Health SA-SA Gesondheid*, *27*(1), 1-9.

Gholamian, S., Alidoosti, K., Zolala, S., & Sabzevari, S. (2022). The effect of implementing the competency-based education model on the clinicai skills among midwifery students. *Strides in Development of Medical Education Journal*, *19*(1), 91-100.

Gruppen, L. D., Irby, D. M., Durning, S. J., & Maggio, L. A. (2019). Conceptualizing learning environments in the health professions. *Academic Medicine*, *94*(7), 969-974.

Hakimi, M., Kheirkhah, M., Abolghasemi, J., & Hakimi, R. (2021). The effects of competency-based education on midwifery students' knowledge, skills, and self-confidence for postpartum hemorrhage management. *Nursing and Midwifery Studies*, *10*(3), 137-144.

Hunter, B., Thomas, G., Wilhelmová, R., Trendafilova, P., Blaževičienė, A., Lynch, L., & Jokinen, M. (2022). Strengthening global midwifery education to improve quality maternity care: Co-designing the world health organization Midwifery Assessment Tool for Education (MATE). *Nurse Education in Practice, 1*(1), *63*, 1-8.

Ige, W. B., Ngcobo, W. B., & Afolabi, O. (2023). Implementation of competency-based education for quality midwifery programs in Africa: Protocol for a scoping review. *JMIR research protocols*, *12*(1), 1-6.

Irfanullah, E. A., Chandra, A., Solaiman, R. H., Siems, C., Chethan, S., Belani, K., & Harmon, J. (2023). Simulation training in a lower middle-income country: Supporting a new center and developing low-cost models for critical skill acquisition. *Cureus*, *15*(6), 1-8.

Jefford, E., Alonso, C., & Stevens, J. R. (2019). Call us midwives: Critical comparison of what is a midwife and what is midwifery. *International Journal of Childbirth*, *9*(1), 39-50.

Johnson, K., Tuzzio, L., Renz, A., Baldwin, L. M., & Parchman, M. (2016). Decision-to-implement worksheet for evidencebased interventions: From the WWAMI region practice and research network. *Journal of the American Board of Family Medicine*, *29*(5), 553-562.

Lawrence, E. R., Klein, T. J., & Beyuo, T. K. (2022). Maternal Mortality in low and middle-income countries. *Obstetrics and Gynecology Clinics of North America*, *49*(4), 713-733.

Lewis, L. S., Rebeschi, L. M., & Hunt, E. (2022). Nursing education practice update 2022: Competency-based education in nursing. *SAGE Open Nursing*, *8*(1), 1-6.

Lu, Y. Y., Ching-Hui, L., & Lee, C. H. (2021, November). Strategic alliances in institutions of higher education to promote sustainable development goals: A case study of two universities in taiwan. *Annual SEAAIR conference proceedings. SEAAIR (South East Asian Association for Institutional Research), 1*(1), 187-196.

https://doi.org/10.17509/jik.v22i2.83661

Luyben, A., Barger, M., Avery, M., Bharj, K. K., O'Connell, R., Fleming, V., ... & Sherratt, D. (2017). Exploring global recognition of quality midwifery education: vision or fiction?. *Women and Birth*, *30*(3), 184-192.

Matlala, S. (2021). Educators' perceptions and views of problem-based learning through simulation. *Curationis*, *44*(1), 1-7.

Mmari, V., Stephen, K., Lilian, M., & Osaki, K. (2019). The implementation fidelity of competency based curriculum for nursing and midwifery programme in Tanzania: A protocol for a mixed methods. *Nurs Prim Care*, *3*(2), 1-6.

Moller, A. B., Welsh, J., Ayebare, E., Chipeta, E., Gross, M. M., Houngbo, G., Hounkpatin, H., Kandeya, B., Mwilike, B., Nalwadda, G., Petzold, M., Sognonvi, A., & Hanson, C. (2022). Are midwives ready to provide quality evidence-based care after pre-service training? Curricula assessment in four countries—Benin, Malawi, Tanzania, and Uganda. *PLOS Global Public Health*, *2*(9), 1-16.

Murarane za, C., & Mtshali, G. N. (2018). Implementation of competency based curriculum in pre-service nursing education: Middle range theory. *International Journal of Africa Nursing Sciences*, *8*(1), 53-58.

Murarane za, C., & Mtshali, G. N. (2021). Planning reform to competency based curricula in undergraduate nursing and midwifery education: A qualitative study. *Nurse Education Today*, *106*, 1-6.

Naciri, A., Hajji, M. E., Radid, M., Kharbach, A., & Chemsi, G. (2022). Exploring student motivation and performance in the flipped classroom: A case study of nursing students. *Electronic Journal of General Medicine*, *19*(3), 1-5.

Neal, S., Nove, A., Bar-Zeev, S., Pairman, S., Ryan, E., ten Hoope-Bender, P., & Homer, C. S. (2023). An analysis of the global diversity of midwifery pre-service education pathways. *Women and Birth*, *36*(5), 439-445.

Nyoni, C. N., & Botma, Y. (2019). Implementing a competency-based midwifery programme in Lesotho: A gap analysis. *Nurse education in practice*, *34*, 72-78.

Ouzzani, M., Hammady, H., Fedorowicz, Z., & Elmagarmid, A. (2016). Rayyan—a web and mobile app for systematic reviews. *Systematic Reviews*, *5*(1), 1-10.

Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., ... & Moher, D. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *Research Methods and Reporting*, *372*(1), 1-9.

Renfrew, M. J., & Malata, A. M. (2021). Scaling up care by midwives must now be a global priority. *The Lancet Global Health*, *9*(1), 2-3.

Superieure, E. N. (2024). *Exploration of pedagogical practices in competency-based education for midwifery students in Morocco*. *The International Journal of Science Didactics and Educational Engineering*, *1*(3). 298-306.

Susanti, A. I., Mandiri, A., & Gumilang, L. (2025). Are midwifery students ready for interprofessional education with project-based learning?. *Inovasi Kurikulum*, *22*(2), 873-856.

https://doi.org/10.17509/jik.v22i2.83661

Thacharodi, A., Singh, P., Meenatchi, R., Tawfeeq Ahmed, Z. H., Kumar, R. R. S., V, N., Kavish, S., Maqbool, M., & Hassan, S. (2024). Revolutionizing healthcare and medicine: The impact of modern technologies for a healthier future-A comprehensive review. *Health Care Science*, *3*(5), 329-349.

Toll, K., Sharp, T., Reynolds, K., & Bradfield, Z. (2024). Advanced midwifery practice: A scoping review. *Women and Birth: Journal of the Australian College of Midwives*, *37*(1), 106-117.

Viswanathan, M., Middleton, J. C., Stuebe, A., Berkman, N., Goulding, A. N., McLaurin-Jiang, S., ... & Gaynes, B. N. (2021). Maternal, fetal, and child outcomes of mental health treatments in women: A systematic review of perinatal pharmacologic interventions. *AHRQ Comparative Effectiveness Reviews*, *236*(1), 1-10.

Warren, N., Gresh, A., Mkhonta, N. R., Kazembe, A., Engelbrecht, S., Feraud, J., ... & Johnson, P. (2023). Pre-service midwifery education in sub-Saharan Africa: A scoping review. *Nurse Education in Practice*, *71*(1), 1-36.

Westphaln, K. K., Regoeczi, W., Masotya, M., Vazquez-Westphaln, B., Lounsbury, K., McDavid, L., ... & Ronis, S. D. (2021). From Arksey and O'Malley and Beyond: Customizations to enhance a team-based, mixed approach to scoping review methodology. *MethodsX*, *8*(1), 1-14.

https://doi.org/10.17509/jik.v22i2.83661