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Experiences of midwives working in rural areas in Africa: a meta-aggregative review of qualitative studies on facilitators and barriers to effective healthcare delivery

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Abstract

Background Midwives are essential providers of maternal and neonatal healthcare, particularly in sub-Saharan Africa, where they play a crucial role in managing obstetric complications and improving maternal and child health outcomes. Despite their significance, limited research has explored their lived experiences in rural healthcare settings, particularly the facilitators and barriers affecting their effectiveness.

Methods This study employed a meta-aggregative approach guided by Joanna Briggs Institute (JBI) methodology and Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines to synthesise qualitative research on midwifery in rural Africa. The main databases for the search included PubMed Central, PubMed, ScienceDirect, Ovid, and Taylor & Francis which identified eleven qualitative studies for inclusion.

Results Key facilitators identified included motivation, social support, digital health innovations, access to training, and financial incentives. However, midwives face significant challenges, including psychological and emotional distress, lack of professional support, inadequate infrastructure, workforce shortages, financial constraints, and ineffective policies, which hinder their ability to provide quality maternal care.

Conclusion Midwives' effectiveness in rural healthcare relies on adequate support, resources, and motivation but is limited by psychological distress, poor infrastructure, and staff shortages. Therefore, strengthening rural midwifery requires targeted policy reforms, better working conditions, investment in infrastructure and digital health, financial incentives, and stronger legal protections.

Keywords Midwifery, Rural, Healthcare, Maternal Health, Meta-Aggregation, Qualitative Synthesis, Africa

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Introduction

Midwives are the foundation of maternal and child health worldwide and are critical providers of reproductive health care across sub-Saharan Africa (SSA). They play a critical role in emergency risk reduction, preparedness and response to obstetric complications while providing antenatal, high-risk labour, postnatal and neonatal care [14, 17, 20]. Empirical evidence has shown that when midwifery services are provided by educated, trained, regulated, licensed midwives, it is associated with improved quality of care, rapid and sustained reductions in maternal and newborn mortality [19, 32]. As such, their knowledge and skills have been identified as necessary to achieve the Sustainable Development Goal (SDG) 3.1 and 3.2, [22, 41].

Despite their relevance, the State of the World's Midwifery (2021) report has estimated a global shortage of 900,000 midwives, particularly acute in low-income countries (LICs) and Africa [35, 36]. This gap is significant, as many regions, especially LICs and lower-middle-income countries, have but still face challenges in workforce availability. The report emphasises that without additional investments, this shortage is projected to improve only slightly by 2030, which will impact both health outcomes and economic growth [35, 36]. In addition, the health care for half of the world's population in remote or rural areas is severely hampered by a lack of qualified and motivated health professionals and has been ascribed to the internal and international migration of health workers dissatisfied with living and working conditions [4, 30, 33, 37]. Likewise, midwives working in these impoverished rural areas are often confronted with daily stress and traumatic experiences, which place them at risk of experiencing burnout, secondary traumatic stress and job dissatisfaction [6, 30, 33].

To achieve Sustainable Development Goal (SDG) 3.1 (Reduce the global maternal mortality ratio to less than 70 per 100 000 live births) and 3.2 (End preventable deaths of newborns and children under 5 years of age), by ensuring safe pregnancies, childbirth, and child survival through preventable death reduction targets efforts guided by locally generated research and supportive policies are essential [8, 43]. The WHO recommends strategies such as training, financial incentives, professional support, and regulatory measures to strengthen the quality and quantity of midwives globally, tailored to local contexts [49–51]. Interventions have focused on enhancing midwives' skills, increasing their numbers, and improving resources [10, 34]. However, persistent gaps remain, including inequities and poor infrastructures [3, 9, 18, 25].

Moreover, the experiences of midwives in frontline healthcare delivery for rural maternal and newborn care have been minimally explored in low- and middle-income countries [21, 23]. Some reviews conducted in Africa include those by Anderson, Zaman, and Limmer [7], in an integrative review examining how midwives and mentoring programs improve SRMNAH services in LMICs, highlighting facilitators and systemic barriers within healthcare structures and Sangy, Duaso, Feeley, and Walker [42] who explored barriers and facilitators to midwife-led care in LMICs, with a focus on diverse perspectives of women, providers, and stakeholders. Turkmani et al. [47] employed the Network of Care (NOC) framework in their scoping review to evaluate midwife-led birthing centres in LMICs, uncovering enablers and structural challenges. In another review, Mgawadere and Shuaibu [31] synthesised qualitative research on respectful maternity care (RMC) in LMICs, identifying key facilitators like dignified care and barriers such as stigma and poor communication. Lastly, Lazar et al. [24] systematically reviewed the experiences of healthcare providers with group antenatal care (GANC), highlighting its benefits for patient-centred care and skill development, as well as challenges related to workload and systemic support. These reviews highlight critical barriers such as inadequate resources, poor infrastructure, heavy workloads, and emotional strain, alongside facilitators like mentorship programs, collaborative care models, and respectful maternity care in improving maternal health outcomes in LMICs.

While existing studies contribute to a broader understanding of midwifery practices, a significant gap remains in synthesising the specific experiences of midwives working in rural African settings. This gap necessitates a meta-aggregative review, which, unlike traditional systematic reviews or scoping reviews, allows for the systematic synthesis of qualitative evidence while preserving the original meaning of participants' experiences [26]. Such a review is essential for raising awareness among key stakeholders, including government agencies, non-governmental organisations, and the global health community, about the hardships faced by rural midwives, potentially leading to increased funding, resource allocation, and policy reforms aimed at improving working conditions and the mental well-being of midwives. Furthermore, with regard to the Sustainable Development Goal (SDG) 3.1 and 3.2, which focuses on reducing maternal and child mortality, synthesising qualitative evidence on midwives' challenges could provide a strong empirical foundation for global efforts to strengthen midwifery services in low-resource settings [51].

Methods

Study design

This study employed a meta-aggregative approach to synthesise qualitative research on the experiences of midwives working in rural Africa, specifically examining

the facilitators and barriers to effective healthcare delivery. The meta-aggregation approach, as outlined by the Joanna Briggs Institute (JBI) [26], was used to systematically compile qualitative findings while preserving the original meaning of participants' perspectives. Unlike meta-ethnography, which seeks to generate new theoretical insights, meta-aggregation focuses on categorising findings into clear and actionable statements that inform policy and practice [26]. This approach is particularly suited for healthcare research where synthesising empirical evidence can contribute directly to improved service delivery and workforce support [39, 40]. To ensure methodological transparency and rigor, this review adhered to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines [38]. The protocol for this review was registered in PROSPERO with the ID: CRD420250652478.

Eligibility criteria

To guide the formulation of the research question and define eligibility criteria for study selection, the PICo (Population, Phenomenon of Interest, Context) framework was employed [26]. This framework was used to ensure that the research remains focused on relevant studies that provide rich descriptive data. The research question guiding this review is: *"What are the experiences of midwives working in rural areas in Africa?".*

The Population in this study consists of midwives practising in rural settings across African countries. This includes both trained midwives, as long as their experiences relate to professional midwifery practice. The Phenomenon of Interest (I) focuses on their lived experiences, including the challenges they face in healthcare delivery, the systemic and socio-cultural barriers that hinder their effectiveness, and the enabling factors that support their work. The Context is explicitly rural healthcare settings in African nations, where limited infrastructure, resource shortages, and socio-cultural influences significantly shape midwifery practice (Table 1).

Search strategy

A comprehensive and systematic search strategy was employed to identify relevant literature across multiple academic databases. The selected databases included PubMed Central, PubMed, ScienceDirect, Ovid and Taylor & Francis. The search strategy was developed using Boolean operators and Medical Subject Headings (MeSH terms) to maximise the retrieval of relevant studies (see Tables 2 and 3). Filters for qualitative studies were applied where available, and citation tracking was performed on included articles to identify additional relevant studies.

Study selection

The study selection process followed a two-stage screening approach based on PRISMA guidelines [38]. In the first stage, eleven (11) independent reviewers screened the titles and abstracts of all retrieved articles to determine whether they meet the inclusion criteria. Articles that appear relevant based on title and abstract were retrieved in full text for the second stage of screening, where they were assessed for methodological quality. In cases of disagreement between reviewers, a third researcher mediated the decision. The aim of this critical appraisal is to ensure that, only high-quality studies that provide rich qualitative insights into midwifery experiences in rural Africa are included.

Critical appraisal of included studies

To evaluate the methodological rigor of the included studies, the Critical Appraisal Skill Programme (CASP) was employed. This checklist ensures that studies maintain high qualitative standards, allowing only robust and credible findings to be included in the synthesis. The critical appraisal of included studies ensures methodological rigor by assessing the alignment between the research question and study design, clarity in data collection and analysis, and researcher reflexivity to identify potential biases.

Table 1 Inclusion and exclusion criteria

Inclusion criteria	Exclusion criteria
Population	Population
Studies conducted on:	Studies conducted on:
a. Practicing midwives in rural areas	a. Midwives in urban areas
	b. Student midwives in rural areas
	c. Traditional birth attendants
Phenomenon of Interest	Phenomenon of Interest
a. Experiences of midwives in rural healthcare settings	a. Experiences of midwives in urban areas
b. Practices of midwives in rural areas	b. Maternal health outcomes without exploring midwives' experiences
c. Facilitators related to midwifery work	
d. Barriers related to midwifery work	
Context	Context
a. Rural African setting	a. Studies not published in English
b. Papers published in the English Language	b. Preprinted manuscripts
c. Papers that have been peer-reviewed	c. Conference paper/ abstracts
d. Grey literature	d. Commentaries
e. Studies published from 2000 to 2025	e. Letters to editors
f. Qualitative studies d mixed methods (qualitative aspect)	f. Policy briefs
	g. Reviews
	h. Quantitative studies

Table 2 Search strategy for search in PubMed

Search (#)	Search Terms
#1 Search to identify midwives	("Midwives" (MeSH) OR "Birth Attendants" OR "Nurse Midwives" (MeSH) OR OR "Maternal Health Workers" OR "Obstetric Care Providers" OR "Skilled Birth Attendants" OR "Perinatal Care Providers" OR "Maternity Nurses" OR "Obstetric Nurses" OR "Childbirth Practitioners" OR "Reproductive Health Providers" OR "Domiciliary Midwives" OR "Community Midwives")
#2 Search to identify experiences	("Experiences" OR "Lived Experiences" OR "Personal Narratives" OR "Perceptions" OR "Perspectives" OR "Views" OR "Attitudes" OR "Insights" OR "Reflections" OR "Subjective Experiences" OR "Qualitative Accounts" OR "First-Hand Accounts" OR "Observations" OR "Emotional Responses" OR "Professional Experiences" OR "Workplace Perceptions" OR "Cognitive Perceptions" OR "Self-Reported Experiences" OR "Cultural Perspectives")
#3 Search to identify facilitators	("Facilitators" OR "Enablers" OR "Supportive Factors" OR "Promoters" OR "Enhancers" OR "Assisting Factors" OR "Positive Influences" OR "Supporting Elements" OR "Encouraging Factors" OR "Aid" OR "Catalysts" OR "Motivators" OR "Resources" OR "Strengths" OR "Protective Factors" OR "Drivers" OR "Contributing Factors" OR "Helping Factors" OR "Reinforcers" OR "Advancing Factors")
#4 Search to identify barriers	("Barriers" OR "Obstacles" OR "Challenges" OR "Hindrances" OR "Impediments" OR "Constraints" OR "Limitations" OR "Deterrents" OR "Inhibitors" OR "Restrictive Factors" OR "Negative Influences" OR "Burdens" OR "Difficulties" OR "Complications" OR "Blocking Factors" OR "Disadvantages" OR "Obstructions" OR "Interferences" OR "Restraining Factors" OR "Weaknesses")
#5 Search to identify rural areas	("Rural Areas" OR "Remote Areas" OR "Underserved Regions" OR "Low-Resource Settings" OR "Peripheral Areas" OR "Hard-to-Reach Areas" OR "Isolated Communities" OR "Village Settings" OR "Rural Healthcare Settings" OR "Medically Underserved Areas" OR "Geographically Remote Regions" OR "Agrarian Communities" OR "Outlying Areas" OR "Non-Urban Areas" OR "Rural Settlements" OR "Developing Regions" OR "Frontier Regions" OR "Sparse Population Areas" OR "Health Disparity Regions" OR "Marginalised Areas")
#6 Search to identify African countries	("African Countries" OR "Sub-Saharan Africa" OR "North African Countries" OR "West African Nations" OR "East African Countries" OR "Southern African Nations" OR "Central African States" OR "Low-Income Countries in Africa" OR "Developing Nations in Africa" OR "African Regions" OR "African States" OR "SSA Countries" OR "ECOWAS Member States" OR "AU Member Countries" OR "Horn of Africa Nations" OR "Francophone African Countries" OR "Anglophone African Countries" OR "Lusophone African Countries" OR "Landlocked African Countries" OR "Coastal African Nations")
Overall search	#1 AND #2 AND #3 AND #5 AND #6 NOT Animal #1 AND #2 AND #6 AND #5 AND #6 NOT Animal Filter activated: English only

Table 3 Complete search strategy conducted in main databases

Database	Search strategy
PubMed Central	("Birth Attendants"[All Fields] OR "Nurse Midwives"[MeSH]) AND ("Experiences"[All Fields] OR "Perceptions"[All Fields] OR "Perspectives"[All Fields] OR "Lived Experiences"[All Fields]) AND ("Facilitators"[All Fields] OR "Enablers"[All Fields] OR "Supportive Factors"[All Fields]) AND ("Barriers"[All Fields] OR "Obstacles"[All Fields] OR "Challenges"[All Fields]) AND ("Low-Resource Settings"[All Fields] OR "Remote Areas"[All Fields]) AND ("Africa"[MeSH] OR "Sub-Saharan Africa"[All Fields] OR "West Africa"[All Fields] OR "East Africa"[All Fields] OR "Southern Africa"[All Fields] OR "Central Africa"[All Fields])
PubMed	experiences OR perceptions) AND (midwives OR "birth attendants") AND ("rural areas" OR "low-resource settings") AND (Africa OR "Sub-Saharan Africa") AND (facilitators OR enablers) AND (barriers OR challenges)
Ovid	(experiences OR perceptions) AND (midwives OR "birth attendants") AND ("rural areas" OR "low-resource settings") AND (Africa OR "Sub-Saharan Africa") AND (facilitators OR enablers) AND (barriers OR challenges)
ScienceDirect	(experiences) AND (midwives) AND (rural areas) AND (Africa) AND (facilitators) AND (barriers)
Taylor & Francis	(experiences OR perceptions) AND (midwives OR "birth attendants") AND ("rural areas" OR "low-resource settings") AND (Africa OR "Sub-Saharan Africa") AND (facilitators OR enablers) AND (barriers OR challenges)

Data extraction

After eligible studies were identified and appraised, data extraction was conducted using a rigorous, structured, and transparent approach to ensure accuracy, consistency, and credibility in synthesising qualitative findings. A standardised data extraction form was employed to systematically capture key details, including study characteristics (author, year, country, methodology), participant demographics, research objectives, key qualitative findings, and thematic categories related to facilitators and barriers in midwifery practice. To minimise bias and errors, a double data extraction process was implemented, with two independent reviewers extracting data separately before comparing and resolving discrepancies through discussion, or involving a third reviewer if necessary. The extraction form was pilot tested on a subset of studies to refine categories and ensure completeness (see Supplementary File 1). In addition, triangulation was incorporated into the coding process where multiple coders compared interpretations, refined emerging themes collaboratively, and checked for consistency across categories to strengthen the credibility and trustworthiness of the findings.

Data synthesis (meta-aggregation process)

After data were extracted, the data were aggregated rather than reinterpreted [26]. Qualitative findings were synthesised in a three-stage process. First, key findings from each study were extracted and grouped into thematic categories based on shared meanings. For example, reports of "inadequate medical supplies" and "lack of transportation for emergency cases" were categorised under the broader theme of infrastructural challenges. Second, these thematic categories were aggregated into synthesised statements, preserving the original participant perspectives while offering a structured summary. Finally, the synthesised statements were presented as actionable recommendations for healthcare policymakers, midwifery training programs, and rural healthcare development initiatives.

Results

Search results

The systematic review followed the PRISMA framework, identifying 3,090 records through database searches across PubMed Central (379), PubMed (16), ScienceDirect (784), Ovid (838), and Taylor & Francis (1,073), along with 47 additional records from other source including Google, Google Scholar and Hinari (Fig. 1). After removing duplicates, 1,882 records remained for screening, of which 1,842 were excluded as irrelevant. Additionally, nine articles were identified through reference checking. A total of 49 full-text articles were assessed for eligibility, with 29 excluded for reasons including not reporting variables of interest (11), being in a non-English language (5), falling outside the population of interest (7), or being from outside Africa (6). Finally, 11 studies were included in the meta-aggregative review (Fig. 1).

Methodological quality of included studies

The methodological quality of the included qualitative studies was assessed using the Critical Appraisal Skills Programme (CASP) tool. The studies were generally of high quality with all studies scoring between 9 and 10 out of 10. Two studies [8, 29] achieved a perfect score 10/10, indicating rigorous methodological quality

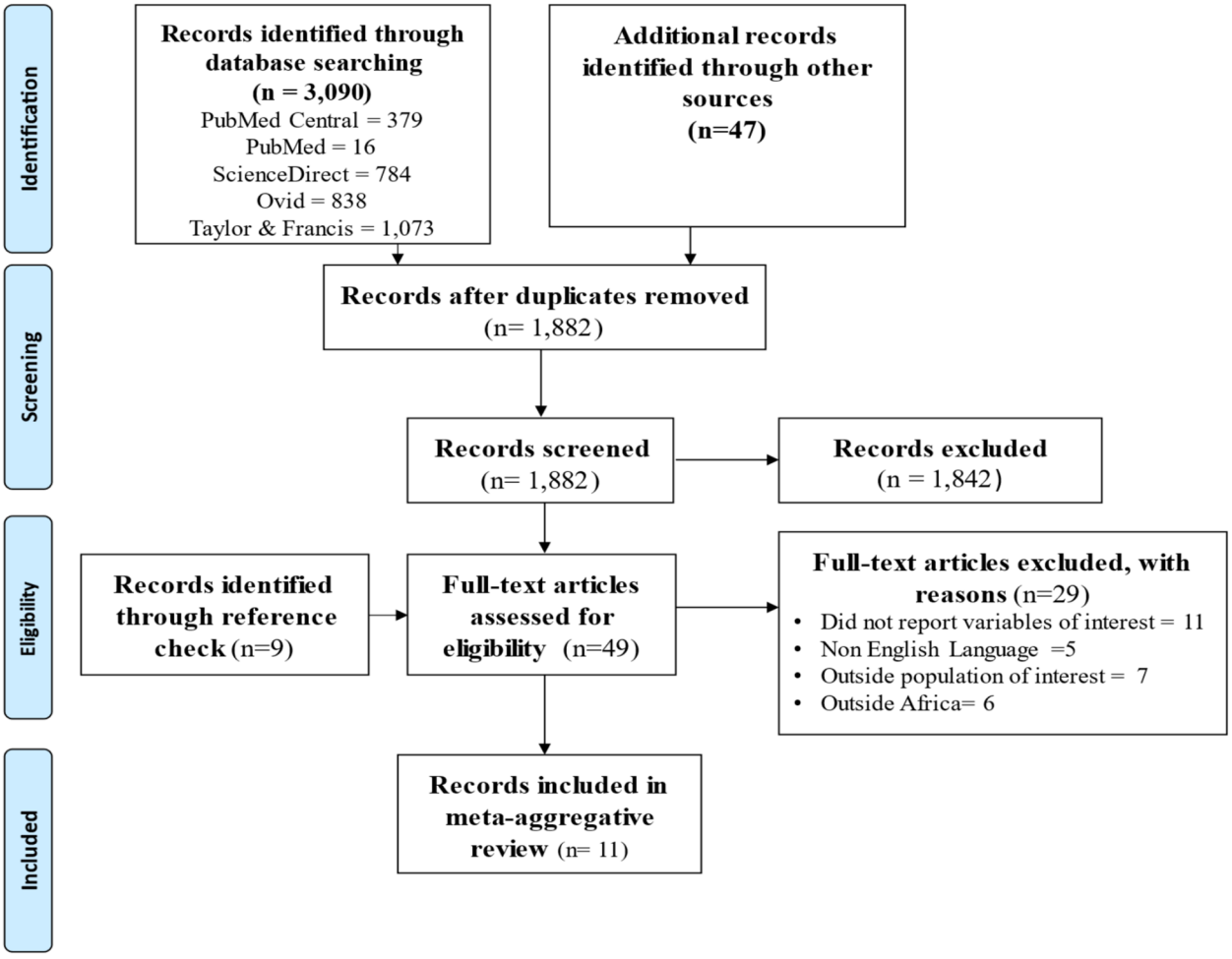

Fig. 1 PRISMA flow chart for study screening and selection

across all appraisal criteria, including clear research aims, appropriate qualitative methodologies, and well-justified data collection and analysis methods. The remaining nine studies scored 9/10, with minor limitations primarily in the domain assessing reflexivity and the consideration of the researchers' influence on the findings (Q6). Despite this, all studies demonstrated strong credibility, relevance, and ethical considerations, ensuring their reliability for inclusion in the meta-aggregative review. See Table 4.

Characteristics of the study

This meta-aggregative review included 11 qualitative studies conducted across six African countries (Fig. 1). The studies and the country of study included Ghana (2), Democratic Republic of Congo (2), Morocco (1), Burkina Faso (1), South Africa (4) and Nigeria (1). In addition, the studies employed diverse qualitative methodologies, including phenomenological approaches [8, 12, 13, 27–29, 44], and descriptive exploratory designs [1, 11]. The total sample size was 252 midwives working in rural areas of Africa. Data analysis techniques varied, with thematic framework approaches being the most common, while hermeneutic phenomenology [27], Tesch's open coding [44], and spiral data analysis [48] were also applied. See Table 5.

Synthesised findings

The meta-aggregation of the facilitators of midwives' effective health delivery in rural areas reveals several key enablers, broadly categorised into motivation, social support, technological advancements, training opportunities, and financial incentives (see Table 6).

Motivation and psychological fulfilment

Personal fulfilment and psychological factors play a crucial role in sustaining midwives' commitment to rural healthcare delivery [2, 27, 48]. Midwives in rural areas often experience intrinsic motivation and emotional fulfilment in their roles, which enhances their commitment to service delivery [27]. Positive experiences in their profession further reinforce their psychological well-being and professional satisfaction [48]. Additionally, the expectations and motivations embedded in structured programs such as the Midwives Service Scheme (MSS) offer external incentives that encourage sustained engagement in rural midwifery [2]. A strong passion for midwifery, along with long-term career aspirations, serves as a powerful driver for many midwives in rural settings, reflecting a deep commitment to the profession and the communities they serve [12, 28].

Social support and community engagement

Midwives rely significantly on both professional and community support to navigate the challenges of rural healthcare delivery. Collegial support plays a vital role in creating a positive work environment and fostering resilience, particularly in resource-constrained settings [13]. Good interpersonal relationships within the midwifery practice further strengthen their capacity to deliver effective maternal health services [8]. Additionally, engagement with community members provides an extended network of support, improving midwives' effectiveness and integration into rural settings [27]. Empowerment strategies that involve soliciting support from community members facilitate better integration and collaboration between midwives and rural populations, ultimately improving service delivery [27].

Technological integration in midwifery practice

The adoption of digital health innovations has significantly contributed to the effectiveness of midwifery in rural areas. Mobile health (mHealth) solutions and other technological advancements have enhanced communication, training, and healthcare access, thereby improving maternal and neonatal health outcomes [11].

Training and professional development

Education and continuous training opportunities are crucial in equipping midwives with the necessary skills

Table 4 CASP appraisal of included studies

Author(s)	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Score
Ani-Amponsah & Richter [8]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	10/10
Magqadiyane [29]	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	10/10
Louazi et al. [27]	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	9/10
Baba et al. [12]	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	9/10
Arnaert et al. [11]	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	9/10
Baba et al. [13]	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	9/10
Adegoke et al. [2]	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	9/10
Matlala & Lumadi [28]	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	9/10
Adatara et al. [1]	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	9/10
Thopola & Lekhuleni [44]	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	9/10
Wibbelink, James & Thomson [48]	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	9/10

Table 5 Characteristics of included studies

Author, year	Country	Study purpose	Study design	Study population	Sample size	Data Analysis
Adatara et al. [1]	Ghana	To explore and gain insights into midwives' experiences of working and providing women-centred care in rural northern Ghana	A qualitative descriptive exploratory design	Midwives in rural northern Ghana	30	Qualitative content analysis
Baba et al. [12]	Democratic Republic of Congo	To identify strategies, based on the research presented, that can help to attract, support and retain midwives in the fragile and rural Ituri province	A qualitative participatory research design	Midwives in the fragile and rural Ituri province	49	Thematic framework
Baba et al. [13]	Democratic Republic of Congo	To explore midwives' work experiences and challenges through time from initial professional choice to future career aspiration in rural Ituri Province, north-eastern DRC	Phenomenological approach and focus group discussions	Midwives	54	Thematic framework approach
Louazi et al. [27]	Morocco	To identify and analyse the perceptions and motivations of midwives in rural and remote areas of northern Morocco on the quality of their working life and the motivational factors and empowerment strategies they use to maintain and develop their work	Qualitative study (hermeneutic phenomenology approach)	Midwives from rural and remote areas	15	Hermeneutic phenomenology approach
Arnaert et al. [11]	Burkina Faso	To explore the experiences of midwives and community health workers (CHWs) using mHealth to improve the care provided to pregnant women	Qualitative descriptive	Midwives and community health workers (CHWs)	8	Inductive approach
Magqadiyane [29]	South Africa	To explore the experiences of midwives for caring unbooked pregnant women in a maternity unit at a district hospital in the Eastern Cape province of South Africa	Phenomenology	Registered midwives or advanced midwives with more than one year in maternity unit	6	Interpretative Phenomenological Analysis frameworks
Thopola & Lekhuleni [44]	South Africa	To explore the challenges experienced by midwifery practitioners in the midwifery practice environment of Limpopo Province	Phenomenological and descriptive design	Midwifery practitioners employed in maternity units	20	Tesch's open-coding approach
Ani-Amponsah and Richter [8]	Ghana	To understand, unveil the meanings and articulate the experiences of midwives who practice in rural settings in rural Ghana	Interpretive phenomenology	Midwives	13	Thematic Analysis
Matlala and Lumadi [28]	South Africa	To explore the perceptions of midwives on the shortage and retention of staff at a public institution	Phenomenology	Midwifery	11	Thematic coding analysis
Adegoke et al. [2]	Nigeria	To determine job satisfaction and identify factors that affect retention of midwives service scheme (MSS) midwives deployed to rural areas of three Northern Nigeria states	Pragmatism	MSS midwives	24	Thematic framework
Wibbelink et al. [48]	South Africa	To describe the factors affecting clinical practice in public maternity units from the perspectives of women who received care and midwives who provided it	Exploratory	Working midwives and women who gave birth in public maternity units in the Eastern Cape	22	Spiral data analysis

to function effectively in rural areas. The availability of structured training programs within nursing schools located in rural settings ensures that midwives receive adequate preparation tailored to their work environment [13, 28]. Further, specialised education strategies targeting rural healthcare delivery strengthen midwives' competencies and enhance their ability to address maternal health challenges effectively [12].

Financial incentives

Adequate financial rewards and incentive structures have been identified as significant facilitators of midwifery practice in rural areas. Competitive remuneration packages help retain midwives and boost their motivation to work in under-resourced settings [2, 13]. In some cases, midwives also seek external sources of income to supplement their earnings, further supporting their financial security in rural practice [12].

Table 6 Facilitators of midwives on effective health delivery in rural areas

Categories	Synthesised findings	Authors
Motivation	Personal fulfilment and Psychological factors	[2, 27, 48]
	Love for the work	[12, 28]
Support from colleagues	Social Support	[8], [13]
Support from community members		[27]
Digital health innovations	Technological Integration	[11]
	Adequate structured training	[12, 13, 28]
Financial resources	Financial incentives	[2, 13]
	Other sources of income	[12]

Table 7 Barriers to midwives on effective health delivery in rural areas

Categories	Synthesised findings	Authors
Intrinsic factors	Psychological Factors	[1, 15, 27, 28, 48]
Extrinsic factors	Poor living condition	[2, 12, 13, 27, 28]
Social factors	Poor social life	[27]
Lack of support from superiors	Lack of Emotional Support	[29]
Lack of continuous in-service training		[1], [27, 28]
Poor Security and Safety	Lack of Physical Safety	[2, 27]
	Lack of Legal Protection	[27, 28]
Inadequate Logistics	Inadequate resources	[1, 8, 27]
	Inadequate Equipment and materials	[2, 8, 27, 44]
Inadequate infrastructure	Poor infrastructure	[1]
	Ineffective Policies	[13]
	Language and Communication problems	[2]
Insufficient number of professionals	Insufficient Healthcare Professionals	[1, 12, 28, 44, 48]
Inadequate competence of other professionals		[28, 29]
Poor work condition	Unfavourable Working Conditions	[2, 12, 13, 27, 28, 44]
	Inflexible working hours	[28]
Providing unauthorised care	Unapproved care	[29, 44]
Financial constraints		[2, 12, 28]

Barriers to effective health delivery by midwives in rural areas

Meta-aggregation was used for the synthesis of barriers to effective midwifery in rural areas revealing multiple interrelated challenges. These include psychological and emotional burdens, insufficient professional and social support, inadequate resources and infrastructure, policy gaps, safety concerns, workforce shortages, and financial constraints (see Table 7).

Psychological and emotional challenges

Midwives working in rural areas face significant psychological pressures that negatively impact their performance and job satisfaction. Midwives in rural settings often struggle with intrinsic psychological burdens, such as fear of change [28], lack of motivation [1], and negative experiences that shape their perceptions of their work and personal lives [27, 48]. Emotional distress arising from maternal deaths [15] and mistrust of clients [27] further exacerbates their stress levels. These psychological strains are compounded by external pressures, including low staff morale, stress, burnout [28], blame for poor outcomes [12], and a general lack of professional recognition and autonomy [28]. Additionally, midwives often experience significant emotional challenges associated with patient care [29], withdrawal from social life, and the need to sacrifice personal relationships [27].

Lack of support and social isolation

Midwives often experience poor social life due to the isolating nature of rural work environments [27]. A lack of professional support, particularly from supervisors and managers, reduces their morale and contributes to job dissatisfaction [29]. Additionally, inadequate emotional support exacerbates stress and burnout among midwives, further weakening their ability to provide optimal care [29].

Poor living conditions

Midwives in rural areas frequently report poor living conditions. This included conditions such as lack of decent housing [27], inadequate accommodations for midwives with families [2], and poor overall infrastructure in rural settings [13], which further contribute to dissatisfaction and workforce attrition.

Insufficient training and professional development

Additionally, limited access to in-service training restricts opportunities for professional development, leading to skill stagnation and a decline in competency levels. Midwives in rural areas have limited access to in-service training opportunities [1], which restricts their professional growth. The absence of structured continuing education and training programs [27, 28] further limits their ability to provide high-quality maternal healthcare services.

Safety and legal protection concerns

Security issues continue to be a significant barrier to midwifery practice in rural areas. Crisis situations, including terrorism and lack of safety [2], pose threats to midwives and their patients. The absence of safe transport for critical maternal health cases [27] further exacerbates healthcare delivery challenges. Midwives also lack adequate

legal protection, which increases their fear of litigation [28] and reduces their willingness to take necessary but high-risk actions in emergency cases [27]. Some midwives were even required to provide unauthorised care due to the absence of qualified personnel, placing them at professional and legal risk [29, 44].

Logistical and infrastructure deficiencies and ineffective policies

A critical limitation in rural maternal healthcare is the severe shortage of logistics and infrastructure [1, 8]. Midwives often work in conditions marked by inadequate equipment, essential drugs, and medical supplies [2, 44]. Additionally, shortages in physical infrastructure, such as a lack of hospital beds and inadequate birthing spaces [1], further hamper effective service delivery. Ineffective policies for attracting and retaining healthcare workers in rural areas further exacerbate the crisis [13].

Workforce shortages and excessive workload

The burden of inadequate staffing has a significant impact on midwifery care. Persistent shortages of midwifery staff [1, 12, 13, 48] contribute to work overload and burnout. Increased reliance on temporary midwives [28] often results in inconsistent patient care. Additionally, the lack of competent midwives negatively affects the quality of maternal healthcare services [28, 29].

Poor working conditions and communication problems

Excessive workloads were a persistent challenge for rural midwives, leading to burnout and compromised patient care [2, 12, 27, 28, 44]. Poor working conditions, including a lack of flexibility in working hours [28], further contribute to job dissatisfaction. Additionally, language and communication barriers pose significant challenges for midwives when interacting with diverse rural populations [2].

Financial constraints and economic pressures

Midwives frequently report financial challenges as a significant barrier to their effectiveness. Low wages, unstable economic conditions, and insufficient financial incentives make it difficult for midwives to remain in rural areas [2, 12, 28].

Discussion

This meta-aggregation of qualitative studies shows the interplay of enablers and barriers shaping midwives' commitment and effectiveness in rural practice. The key enablers such as motivation, community trust, digital health innovations, continuous professional development, and financial incentives were found to sustain midwifery practice and strengthen maternal healthcare delivery. Both intrinsic drivers, including professional fulfilment and positive maternal outcomes, and extrinsic supports, such as structured programs like the Midwives Service Scheme (MSS), reinforce retention in underserved areas [2, 12, 13, 48]. These findings align with the World Health Organization's Global Strategic Directions for Nursing and Midwifery 2021–2025, which emphasize professional recognition, career development, and supportive workplace environments as essential to workforce sustainability [49].

In addition, community engagement also was central determinant of effective maternal care, as trust and cultural alignment facilitated service uptake [27]. Similar to global literature on health systems resilience, which stresses the role of community participation in bridging gaps in resource-constrained settings, these findings emphasise the importance of embedding midwifery within community health frameworks [46]. If this is not considered, mistrust and underutilization of services are likely to persist, undermining progress towards the SDG 3.1 and 3.2 targets on maternal and child health.

Moreover, technological innovations and continuous training further reinforce midwives' capacity to deliver quality care. These mobile health solutions, mentorship, and distance learning expand access to guidelines, specialist input, and emergency management skills [11, 28]. However, these advances depend on adequate infrastructure and investment, emphasising global calls for digital inclusion and capacity-building in rural health systems [5, 45]. This points to the necessity of scaling up technology-enabled learning and evidence-based practice opportunities to bridge rural–urban disparities in maternal care.

At the same time, significant barriers persist. Psychological burdens, inadequate managerial support, poor living conditions, safety risks, workforce shortages, and financial instability undermine midwives' wellbeing and retention. These challenges illustrate the health workforce burden including burnout, brain drain and inequities in resource allocation across LMICs. For example, insufficient wages and limited financial incentives were recurrent concerns, reinforcing the need for structured remuneration policies and hardship allowances to make rural practice viable [2, 12]. Moreover, weak infrastructure, policy inefficiencies, and gaps in professional recognition contribute to the fragility, reducing both workforce morale and patient outcomes [16].

Altogether, these challenges showed the need for targeted interventions to strengthen rural midwifery and improve maternal health outcomes. For instance, policy reforms must address workforce shortages through effective retention strategies, while expanded training will enhance the clinical skills of midwives. Improved working conditions, including access to essential medical supplies and infrastructure, will reduce burnout and increase

job satisfaction. Financial incentives and culturally sensitive communication strategies are also crucial for retaining midwives and improving patient compliance with maternal healthcare.

Conclusion

The meta-aggregation of qualitative studies highlights both key facilitators and barriers affecting midwifery effectiveness in rural healthcare delivery. Motivation, social support, technological advancements, training opportunities, and financial incentives play a crucial role in sustaining midwives' commitment and improving maternal and neonatal health outcomes [11, 13]. However, midwives also face psychological and emotional challenges, lack of professional support, poor infrastructure, workforce shortages, financial constraints, and policy inefficiencies, which significantly impact their ability to deliver quality maternal healthcare services [27, 28]. Overcoming these barriers requires a multi-sectoral approach, including policy reforms, investment in midwifery training, improved working conditions, financial incentives, and legal protections to support rural midwives [2, 44]. Moreover, strengthening community engagement, digital health innovations, and improved healthcare infrastructure will further improve service delivery and maternal healthcare accessibility.

Policy recommendation

To enhance midwifery effectiveness and address systemic barriers in rural areas, policymakers must prioritise structured financial incentives, including hardship allowances, salary increments, performance-based bonuses, and housing subsidies, to improve midwife retention [2, 12, 13]. Governments should implement comprehensive workforce planning to ensure equitable distribution of midwives and strengthen midwifery education by integrating context-specific training programs and mandatory continuing education tailored to rural healthcare [28]. Expanding digital health policies and incorporating mobile health (mHealth) innovations can improve midwifery service delivery and training opportunities [11]. Additionally, strengthening legal protections, such as liability coverage and workplace harassment policies, is crucial to reducing midwives' fear of litigation and ensuring professional autonomy in maternal healthcare decision-making [27, 28]. Investments in rural healthcare infrastructure, including reliable electricity, clean water, medical equipment, transport services, and improved birthing facilities, are essential to creating a conducive working environment. Finally, fostering community engagement and support strategies can facilitate midwives' integration into rural healthcare systems, improving both service delivery and maternal health outcomes.

Practice recommendations

Healthcare institutions should prioritise continuous professional development by providing midwives with structured in-service training, mentorship programs, and peer-learning opportunities to enhance their skills and resilience in rural settings [13, 28]. Strengthening interdisciplinary collaboration between midwives, community leaders, and healthcare professionals can improve maternal healthcare delivery and support systems [8, 27]. Expanding telemedicine and mobile health (mHealth) initiatives can enhance midwives' access to emergency consultations, digital training platforms, and remote medical support, improving service delivery and professional development in resource-limited areas [11]. Healthcare facilities must also ensure the provision of adequate medical resources, including essential drugs, obstetric equipment, and emergency transport services, to support effective maternal care. Moreover, implementing flexible work schedules, rotational staffing, and enhanced managerial support can help mitigate burnout and excessive workloads, thereby fostering a healthier work environment for midwives [27, 28]. Additionally, leadership training for supervisors can strengthen workplace support structures, reducing professional stress and enhancing job satisfaction [29]. Lastly, strengthening community engagement initiatives will further support midwives' integration into rural healthcare systems, building trust, patient adherence, and better maternal health outcomes [27].

Recommendations for further research

Future research should examine the long-term impact of financial and non-financial incentives on midwifery retention and workforce sustainability in rural settings [13]. This may provide insights into how salary increments, hardship allowances, and improved working conditions influence midwives' motivation and long-term commitment. Studies should also assess the effectiveness of digital health interventions, such as mobile health (mHealth) solutions and telemedicine, in overcoming training and logistical barriers, improving access to maternal healthcare, and enhancing midwifery support systems [11]. Moreover, further research is needed on community-based interventions, mentorship programs, and peer-support networks to examine their role in reducing burnout, increasing professional resilience, and enhancing midwives' emotional well-being and job performance in rural areas [13]. Additionally, comparative studies across different rural contexts should be conducted to identify globally adaptable best practices for addressing midwifery workforce challenges, particularly in low-resource settings, to improve service delivery and maternal health outcomes.

Limitation

Despite providing a comprehensive synthesis of the facilitators and barriers affecting midwifery effectiveness in rural areas, this review has several limitations. The included studies primarily focused on a few African countries, which may limit the generalizability of findings to other rural healthcare settings with different healthcare systems, policies, and socio-cultural dynamics [13]. Additionally, the reliance on qualitative studies presents challenges in standardising findings, as variations in methodological approaches, such as different qualitative analysis techniques and data collection methods, may have introduced inconsistencies in interpretation [28]. The use of self-reported experiences from midwives also poses a risk of response bias, as participants may have emphasised certain challenges or facilitators over others [27]. Furthermore, the review primarily centers on midwives' perspectives**,** with limited input from healthcare policymakers and patients, which could provide a more holistic understanding of midwifery effectiveness in rural areas. Future research should incorporate mixed-method approaches, including quantitative and longitudinal studies, to offer a more robust analysis of midwifery challenges and their impact on maternal healthcare delivery in diverse rural settings.

Supplementary Information

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Supplementary Material 1.

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Authors' contributions

Conceptualisation and development of the review questions of the study were done by C.A. and E.F.O.A. W.A-B., I.A.E., P.Q., B.E.Y., and D.Y. contributed to the development of the methodology and review questions. All authors reviewed, edited, and approved the final manuscript.

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Data availability

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Declarations

Ethics approval and consent to participate

Ethical approval was not required for this review because it relies on the collection and analysis of data from existing literature available in academic databases.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

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References

1. Adatara P, Amooba PA, Afaya A, Salia SM, Avane MA, Kuug A, et al. Challenges experienced by midwives working in rural communities in the Upper East Region of Ghana: a qualitative study. BMC Pregnancy Childbirth. 2021;21:1–8.
2. Adegoke AA, Atiyaye FB, Abubakar AS, Auta A, Aboda A. Job satisfaction and retention of midwives in rural Nigeria. Midwifery. 2015;31(10):946–56.
3. Ahmat A, Okoroafor SC, Kazanga I, Asamani JA, Millogo JJS, Illou MMA, et al. The health workforce status in the WHO African Region: findings of a cross-sectional study. BMJ Glob Health. 2022;7(Suppl 1):e008317.
4. Ahmed MAA, Diakite SL, Sissoko K, Gagnon MP, Charron S. Factors explaining the shortage and poor retention of qualified health workers in rural and remote areas of the Kayes, region of Mali: a qualitative study. Rural Remote Health. 2020;20(3):1–9.
5. Ahmed MAA, Gagnon MP, Hamelin-Brabant L, Mbemba GIC, Alami H. A mixed methods systematic review of success factors of mhealth and telehealth for maternal health in sub-Saharan Africa. Mhealth. 2017;3:22.
6. Albendín-García L, Suleiman-Martos N, la Cañadas-De Fuente GA, Ramírez-Baena L, Gómez-Urquiza JL, la De Fuente-Sona EI. Prevalence, related factors, and levels of burnout among midwives: a systematic review. J Midwifery Womens Health. 2021;66(1):24–44.
7. Anderson R, Zaman SB & Limmer M. The impact of introducing midwives and mentoring on the quality of SRMNAH services in LMICs: An integrative review protocol. Methods Protocols. 2023; 6(48). https://doi.org/10.3390/mps6030048
8. Ani-Amponsah M, Richter S. Midwives' experiences of rural maternal-newborn care in Ghana: a phenomenological inquiry. Online J Rural Nurs Health Care. 2021;21(2):84–116.
9. Antonio CAT. The continuing challenge of maldistribution of human resources for health. Acta Med Philippina. 2022;56(8):3–4. https://doi.org/10.47895/amp.v56i8.5839.
10. Antonio CAT. Midwives are crucial human resources for health to achieve universal health care. Acta Med Philipp. 2023;6(57):3–4. https://doi.org/10.47895/amp.v57i6.8257.
11. Arnaert ALDC, Ponzoni N, Debe Z, Meda MM, Nana NG, Arnaert S. Experiences of midwives and community health workers using mHealth to improve services to pregnant women in rural Burkina Faso, Africa. J Nurs Educ Pract. 2020;10:57–64.
12. Baba A, Martineau T, Theobald S, Sabuni P, Nobabo MM, Alitimango A, et al. Developing strategies to attract, retain and support midwives in rural fragile settings: participatory workshops with health system stakeholders in Ituri Province, Democratic Republic of Congo. Health Res Policy Syst. 2020;18(1):1–14.
13. Baba A, Theobald S, Martineau T, Sabuni P, Nobabo MM, Alitimango A, et al. Being a midwife is being prepared to help women in very difficult conditions: Midwives experiences of working in the rural and fragile setting of Ituri Province, Democratic Republic of Congo. Rural Remote Health. 2020;20(2):69–80.
14. Beek K, McFadden A, Dawson A. The role and scope of practice of midwives in humanitarian settings: a systematic review and content analysis. Hum Resour Health. 2019;17:1–16.
15. Dartey FA, Phetlhu RD, Phuma-Ngaiyay E. Reducing the effects of maternal death: midwives' strategies. Int J Health Sci Res. 2019;130(9):2.
16. Dubale BW, Friedman LE, Chemali Z, Denninger JW, Mehta DH, Alem A, et al. Systematic review of burnout among healthcare providers in sub-Saharan Africa. BMC Public Health. 2019;19(1):1247.
17. Ebong RI, Ojong IN, Esienumoh E, Uka VK, Nsemo AD. Provision of emergency obstetric care: midwives' knowledge and involvement in rural health facilities of Cross River State, Nigeria. J Educ Health Promot. 2023;12(1):392.
18. Eke PC, Ossai EN, Eze II, Ogbonnaya LU. Exploring providers' perceived barriers to utilization of antenatal and delivery services in urban and rural communities of Ebonyi state, Nigeria: a qualitative study. PLoS One. 2021;16(5):e0252024.
19. Hodorogea S, Kazakbaeva C & Maciulevicius A. Assessment of the Quality of Maternal and Neonatal Services in Montenegro. 2023.
20. Ie MMA, Nasrabadi AN, Sohrabizadeh S, Jazani RK. Essential professional competencies for basic midwifery practice in disasters: a qualitative study. Disaster Med Public Health Prep. 2022;16(5):2015–9.

21. Kalu FA, Chukwurah JN. Midwives' experiences of reducing maternal morbidity and mortality from postpartum haemorrhage (PPH) in eastern Nigeria. BMC Pregnancy Childbirth. 2022;22(1):474.
22. Kemp J, Maclean GD, Moyo N. Global midwifery: Principles, policy and practice. Springer International Publishing; 2021.
23. Lalthapersad-Pillay P. Supply-side barriers and health system concerns in five high maternal mortality settings in Africa. Afr Popul Stud. 2021;35(1):5267–80. https://doi.org/10.11564/35-1-1536.
24. Lazar J, Boned-Rico L, Olander EK, McCourt C. A systematic review of providers' experiences of facilitating group antenatal care. Reprod Health. 2021;18:180. https://doi.org/10.1186/s12978-021-01200-0.
25. Leal Filho W, Trevisan LV, Rampasso IS, Anholon R, Dinis MAP, Brandli LL, et al. When the alarm bells ring: why the UN sustainable development goals may not be achieved by 2030. J Clean Prod. 2023;407:137108.
26. Lockwood C, Munn Z, Porritt K. Qualitative research synthesis: methodological guidance for systematic reviewers utilizing meta-aggregation. JBI Evid Implement. 2015;13(3):179–87.
27. Louazi A, Frías-Osuna A, López-Martínez C, Moreno-Cámara S. Perceptions, motivations, and empowerment strategies of midwives in rural and remote areas of northern Morocco. Int J Environ Res Public Health. 2022;19(22):14992.
28. Lumadi TG, Matlala MS. Perceptions of midwives on shortage and retention of staff at a public hospital in Tshwane district. Curationis. 2019;42(1):1–10.
29. Magqadiyane S. Experiences of midwives for caring unbooked pregnant mothers in a maternity unit at a district hospital in the Eastern Cape Province. Adv Reprod Sci. 2020;8(4):186–200.
30. McGrory S, Neill RD, Gillen P, McFadden P, Manthorpe J, Ravalier J, et al. Self-reported experiences of midwives working in the UK across three phases during COVID-19: a cross-sectional study. Int J Environ Res Public Health. 2022;19(20):13000.
31. Mgawadere F, Shuaibu U. Enablers and barriers to respectful maternity care in low and middle-income countries: a literature review of qualitative research. Int J Clin Med. 2021;12(5):224–49.
32. Mortensen B. Making midwifery matter: The introduction of a midwife-led continuity model of care in occupied Palestine (Doctoral thesis, University of Oslo, Norway). Mortensen, B. (2020). Making Midwifery Matter-The introduction of a Midwife-led Continuity Model of care in occupied Palestine. 2020.
33. Mothwane VLT. Understanding employee engagement among midwives in public health care facilities in a sub-district, North West Province (Doctoral dissertation, North-West University (South-Africa)). 2020.
34. Negero MG, Sibbritt D, Dawson A. How can human resources for health interventions contribute to sexual, reproductive, maternal, and newborn healthcare quality across the continuum in low-and lower-middle-income countries? A systematic review. Hum Resour Health. 2021;19:1–28.
35. Nove A, ten Hoope-Bender P, Boyce M, Bar-Zeev S, de Bernis L, Lal G, et al. The state of the World's Midwifery 2021 report: findings to drive global policy and practice. Hum Resour Health. 2021;19:1–7.
36. Nove A, ten Hoope-Bender P, Boyce M, Bar-Zeev S, de Bernis L, Lal G, ... & Homer CS. The State of the World's Midwifery 2021 report: findings to drive global policy and practice. Human Resourc Health. 2021; 19(1):146.
37. Okoroafor SC, Ongom M, Salihu D, Mohammed B, Ahmat A, Osubor M, et al. Retention and motivation of health workers in remote and rural areas in Cross River State, Nigeria: a discrete choice experiment. J Public Health. 2021;43(Supplement_1):i46–53.
38. Page MJ, et al. PRISMA 2020 statement: An updated guideline for reporting systematic reviews. BMJ. 2021;372:n71.
39. Pearson A, et al. The JBI approach to evidence-based healthcare. Int J Evid Based Healthc. 2011;9(1):3–10.
40. Pearson A, Jordan Z, Munn Z. Translational science and evidence-based healthcare: a clarification and reconceptualization of how knowledge is generated and used in healthcare. Nurs Res Pract. 2011;2012:1–6.
41. Rosa WE, Catton H, Davidson PM, Hannaway CJ, Iro E, Klopper HC, et al. Nurses and midwives as global partners to achieve the sustainable development goals in the anthropocene. J Nurs Scholarsh. 2021;53(5):552–60.
42. Sangy MT, Duaso M, Feeley C, Walker S. Barriers and facilitators to the implementation of midwife-led care for childbearing women in LMICs: a mixed-methods systematic review. Midwifery. 2023;122:103696. https://doi.org/10.1016/j.midw.2023.103696.
43. Sanhueza A, Cueva DA, Mujica OJ, Soliz P, Duran P. Income inequality as a determinant of neonatal mortality in the Americas during 2000–2019: implications for the attainment of sustainable development goal target 3.2. Int J Equity Health. 2024;23(1):109.
44. Thopola MK, Lekhuleni ME. Challenges experienced by midwifery practitioners in the midwifery practice environment of Limpopo Province, South Africa: maternal and child care. Afr J Phys Health Educ Recreat Dance. 2015;21(sup-1):498–513.
45. Till S, Mkhize M, Farao J, Shandu LD, Muthelo L, Coleman TL, et al. Digital health technologies for maternal and child health in Africa and other low-and middle-income countries: cross-disciplinary scoping review with stakeholder consultation. J Med Internet Res. 2023;25:e42161.
46. Truppa C, Yaacoub S, Valente M, Celentano G, Ragazzoni L, Saulnier D. Health systems resilience in fragile and conflict-affected settings: a systematic scoping review. Conflict Health. 2024;18(1):2.
47. Turkmani S, Nove A, Bazirete O, Hughes K, Pairman S, Callander E, et al. Exploring networks of care in implementing midwife-led birthing centres in LMICs: A scoping review. PLOS Global Public Health. 2023;3(5):e0001936. https://doi.org/10.1371/journal.pgph.0001936.
48. Wibbelink M, James S, Thomson AM. A qualitative study of women and midwives' reflections on midwifery practice in public maternity units in the Eastern Cape, South Africa. Afr J Midwifery Womens Health. 2022;16(2):1–14.
49. World Health Organization. Global strategic directions for nursing and midwifery 2021–2025. World Health Organization; 2021. https://www.who.int/publications/i/item/9789240033863. Access 3 Mar 2025.
50. World Health Organization. Strategies toward ending preventable maternal mortality (EPMM). Geneva: WHO; 2021.
51. World Health Organization. WHO guideline on health workforce development, attraction, recruitment and retention in rural and remote areas. 2021. https://creativecommons.org/licenses/by-nc-sa/3.0/igo. Access 3 Mar 2025.

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