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Review Article

Barriers and facilitators to the implementation of midwife-led care for childbearing women in low- and middle-income countries: A mixed-methods systematic review☆

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ABSTRACT

Background: Evidence from high-income countries demonstrate improvements in maternal and neonatal health with midwife-led care. Midwife-led care is pivotal to meet the United Nations' Sustainable Development Goals. Despite this, successful implementation of midwife-led care in low- and middle-income countries (LMICs) has been limited. It is therefore necessary to understand the factors that influence the implementation of midwife-led care.

Aim: This systematic review aimed to synthesize the evidence on barriers and facilitators to the implementation of midwife-led care for childbearing women in LMICs from the perspectives of care recipients, providers and wider stakeholders.

Methods: A mixed-methods systematic review was conducted of primary research studies that expressed the views of those involved in or affected by the implementation of midwife-led care in LMICs. Reporting followed PRISMA guidelines. MEDLINE, EMBASE, PsychINFO, CINAHL, Maternity and Infant Care database (MIDIRS), Global Health and Web of Science databases were systematically searched. Methodological quality was assessed using the Mixed Methods Appraisal Tool (MMAT). Data was analysed and synthesized using the Supporting the Use of Research Evidence (SURE) framework to identify barriers and enabling factors to implementing midwife-led care.

Findings: A total of 31 studies from 21 LMICs were included. At the care recipient level, women need adequate knowledge and confidence about midwife-led care to utilise services. At the care provider level, strengthening midwifery education and practice by employing experienced educators and supervisors is essential. Findings also suggest that increased collaboration between funders, professional organisations, practitioners, communities, and the government is necessary for successful implementation. However, adequate and sustained funding for midwife-led care programs is often lacking and political instability contributes to poor implementation in LMICs.

Conclusion and implications for practice and research: There are several enabling factors which increase the success and sustainability of the midwife-led model of care in LMICs. However, current practice guidelines and strategic frameworks need to better reflect the infrastructure and resource limitations of health settings in LMICs.

Introduction

Globally around 810 maternal deaths occur each day and about 2.4 million new-born deaths each year (World Health Organisation (WHO), 2019). About 94% of these maternal deaths are preventable and happen in low-income countries due to lack of access to qualified health professionals (WHO, 2019). The State of the World's Midwifery 2021 report states that one in five women world-

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wide deliver their baby without support from a skilled healthcare provider International Confederation of Midwives (ICM), 2021). Midwife-led care refers to the care given by a lead midwife to childbearing women throughout pregnancy starting from their initial booking to the post-natal period (International Confederation of Midwives (ICM) 2017). A specific model of midwifery care is midwife-led continuity of care which requires pregnancy, childbirth and postnatal care provided to women by the same midwife or a small group of midwives (Sandall et al., 2016). Women birthing without midwife assistance and the rising number of caesarean sections (Betran et al., 2021) increases the possibility of Sustainable Development Goals 3 and 5 (SDGs) being unmet by 2030 (ICM, 2021, The United Nations 2015). Hence, strengthening the midwifery workforce has been on the global agenda for over a decade to reduce maternal and neonatal mortality in low-and middle-income countries (LMICs) (Nove et al., 2021).

Research from high-income countries shows that midwife-led care improves maternal and neonatal health and is crucial to meet the SDGs (Renfrew et al., 2014). A Cochrane Systematic Review on midwife-led care for women found that foetal loss before 24 weeks of pregnancy is 21% less likely to happen amongst women receiving midwife-led care (Sandall et al., 2013). Additionally, these women are 19% less likely to have regional analgesia, 14% less likely to have instrumental delivery, and 18% less likely to have an episiotomy (Sandall et al., 2013). Whilst research evidence on the effectiveness of midwife-led care is mostly from high-income countries (Homer et al., 2017; Sandall et al., 2010), LMICs are also investing to increase the midwifery workforce (Nove et al., 2021) in the hope of preventing maternal and new-born deaths (Nove et al., 2021). Indeed, a modelling study led by UNFPA, ICM and WHO in 88 LMICs estimated that a universal reach of midwife-led care would prevent 67% of maternal deaths, 64% of neonatal deaths, 65% of stillbirths, and save 4.3 million lives per year by 2035 (Nove et al., 2021).

Despite this, there remains a resistance to implement the midwife-led model of care in LMICs (WHO, 2019). Research suggests that there are important differences in the role of midwives and the way midwife-led care is organised between high and middle-income countries (Sandall et al., 2016). An integrative review scoping the delivery of midwifery care in LMICs, found that regardless of the promising results on effectiveness, there was no standardised model of care used across LMIC, and that standards of practice and training of midwives varied significantly across different countries (Michel-schuldt et al., 2020). A review of the literature up until 2013 which examined barriers to midwifery services in LMICs from a provider perspective, found that social and cultural, economic, and professional barriers had a significant effect on midwives' ability to provide care (Filby et al., 2016). However, more recent research in this area has restricted its focus to implementation problems within single countries or continents (McFadden et al., 2020; Dahab et al., 2020; Bogren et al., 2022).

Whilst there are some known factors which may significantly affect successful implementation (Nations et al., 2012) it is important to consider these from the perspectives of care recipients and stakeholders, as well as providers. In addition, it is necessary to explore what can drive successful services to overcome cited barriers. This review therefore used a validated framework to provide an up-to-date synthesis of the literature, incorporating the perspectives of providers, care recipients and stakeholders, to understand the factors that hinder and facilitate the effective implementation of midwife-led care in LMICs globally.

Methods

An initial scope of the literature showed that the available evidence on midwife-led care from LMICs featured a range of quantitative, qualitative, and mixed method research designs. In order to maximise the data available to answer the research questions, a mixed-methods systematic review was conducted and reported following Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) guidelines (Liberati et al., 2015).

The review employed a framework approach to analysis which has been widely used in systematic reviews of both qualitative and mixed-method studies (Brunton et al., 2020). Framework analysis is particularly useful for answering review questions to inform policy and implementation. The SURE framework (The SURE Collaboration., 2011) was identified as a suitable framework to structure data extraction and analysis. This framework has been specifically designed to identify potential barriers to successfully implementing healthcare interventions. The full framework can be found in Supplementary material (file 1). It has been used in a number of Cochrane Systematic Reviews focusing on the implementation of healthcare interventions (Glenton et al., 2013; Karimi-Shahanjarini et al., 2019.). A convergent, integrated approach was used which involved the transformation of data to enable a synthesis of quantitative and qualitative findings (Sandelowski et al., 2006; Stern et al., 2020). As the majority of studies in this review were qualitative, a 'qualitizing' technique was employed whereby the quantitative data were also converted into textual descriptions to allow integration with qualitative findings (Sandelowski et al., 2006; Stern et al., 2020).

Eligibility criteria

The inclusion and exclusion criteria defined using the PICOS (Population, Interventions, Context, Outcomes and Study designs) elements is given in Table 1.

Search strategy

MEDLINE, EMBASE, Psych INFO, CINAHL, Maternity and Infant Care database (MIDIRS), Global Health and Web of Science were searched from inception to July 2020 and then updated in July 2022. The full search strategy for MEDLINE can be found in Supplementary material (file 2). Search strategies were adapted for the relevant databases. The search terms were derived from the eligibility criteria defined by the PICOS element (Table 2). Reference lists of identified studies were also searched. The database search was limited to English and Spanish languages and no date restrictions were applied.

Study selection

The lead author (MTS) independently assessed the titles and abstracts of the identified studies for eligibility, and then retrieved and assessed the full text of all potentially eligible studies. Ambiguities over the eligibility of specific studies were resolved through discussion with the other two review authors (MD, SW). The number of studies screened and finalized is shown in Fig. 1.

Quality assessment

The Mixed Methods Appraisal Tool (MMAT) version 2018 (Hong et al., 2018) was used to appraise methodological quality. The MMAT had two screening questions and nineteen questions corresponding to the five different study designs, based on which quality of the included studies were scored (Pace et al., 2012). The quality rating using MMAT (Supplement 3) was performed by the lead author (MTS) and uncertainties were resolved through discussion with two other authors (MD, SW). The study score was calculated out of total of five. A study with a score of 4–5 was rated as high, a score of 3 was considered moderate and a score

Table 1
Inclusion and exclusion criteria

PICOS element	Inclusion criteria	Exclusion criteria
Population	Studies expressing the views of those involved in or affected by the implementation of midwife-led care. Care recipients: Pregnant women, women of reproductive age group, women who had delivered within 6–12 months, women from the community, married women, women and their partners, family members like mothers-in-law, father-in-law were in the care recipients' group. Care providers: Certified/licensed midwives, nurse midwives working in maternity hospitals, community midwives, midwifery educators, and midwifery students. As the review focussed on midwife-led care, the definition for 'midwife' was based on the International Standard Classification of Occupations (ISCO) code (ISCO-08 code:2222 & 22) as given by the International Labour Organization (ILO) (ILO, 2012). Stakeholders: Academic directors, medical administrators, health managers, health coordinators, health supervisors, policymakers, program managers, professional organisation and association members, funders, village leaders, and village health volunteers.	Studies on pregnancy care given by nurses with no midwifery experience or license to practice were excluded.
Intervention/ **C**omparator	Midwife-led care and continuity midwifery care including team midwifery and caseload midwifery were included.	Obstetric-led care and care given during abortion, and/or with gynaecological problems were excluded.
Outcomes	Barriers and facilitators to the implementation of midwife-led care in LMICs.	–
Study design	All primary research studies including quantitative, qualitative, and mixed-methods studies included.	Secondary research such as editorials and systematic reviews excluded.
Context	This systematic review included studies conducted from LMICs as classified by the Development Assistance Committee (DAC) list of Official Development Assistance (ODA) recipients (2020 flows) (DAC list of ODA Recipients 2020).	Studies from high-income countries.

Table 2
Search terms

	SEARCH TERMS
1	ALL (Midwives or Nurse Midwives OR midwi* or nurse midwi* OR Obstetric* OR practitioner* OR specialist* OR doctor* OR pregnant women OR childbearing women OR father* OR famil* OR stakeholder* OR policymaker* OR admistrat* OR manager* OR director* OR midwi* head* OR supervisor* OR leader* OR community health committee*)
2	ALL (Midwife-led care* OR midwi* care* Or midwi* model of care OR continuity midwi* care)
3	All (implement* OR execut* OR achiev* OR employ* OR accomplish* OR adapt* OR adopt* OR adher* OR deliver* OR becom*)
4	All (facilitat* OR support* OR enabl* OR expedit* OR influenc* OR factor* OR success* OR promot* OR help* OR motivat* OR enhanc* OR affect* OR encourag* OR barriers OR hinder* OR stop* OR block* OR delay* OR obstruct* OR interfer* OR interrupt* OR restrict* OR restrain* OR disabl* OR constrain* OR inhibit)
5	All (developing countries OR low middle-income countries OR LMIC OR develop* countr* OR underdeveloped countr*)
6	1 AND 2 AND 3 AND 4 AND 5

of 2 and below was rated as low quality. In this review, 23 studies were rated as high, seven rated as moderate and only one study (Narchi et al. 2011) rated as low. This lower quality study was not excluded, but attention was paid to the contributions of all studies in the final analysis.

Data extraction and synthesis

The key characteristics of the 31 included studies were extracted and provided in a structured table (Table 3). The data were synthesised using a framework thematic synthesis (Booth, 2012). The framework synthesis was adapted from the five-stage framework analysis method (Brunton et al., 2020). These stages include:

1 Familiarisation: Based on the aim of the systematic review, the lead author (MTS) familiarised themselves with the 31 included studies.
2 Identifying a thematic framework: The SURE framework was identified as appropriate (The SURE Collaboration, 2011). It includes 34 categories grouped under five levels (recipients of care, providers of care, stakeholders, health system, and social and political factors) and is used to identify the factors affecting the implementation of healthcare programmes. Using NVivo (version 12) (NVivo 2018) software (QSR international, 2012) the barriers and facilitating factors were identified, and then arranged based on the levels and categories of the SURE framework.
3 Indexing: During this stage, the fit of the data to the categories in the SURE framework was reviewed. To provide more meaningful results, some related categories were merged (Ring et al., 2011).
4 Charting: An excel spread sheet was used to summarize the data into charts, wherein the columns and rows reflected the studies, and related categories and sub-categories.

Table 3
Key characteristics of included studies

Reference	Study Aim/Objectives	Place Study Conducted		Population		Methods			Study Results
Author	Aim/Objective(s)	Country	Area	Sample Size	Sample Characteristics	Study Design	Data Collection Method	Data Analysis	Results
Arnold et al., 2018	To identify barriers and facilitators in the delivery of maternity care	Afghanistan	Maternity Hospital, Kabul Public Health - Urban area	Interviews with 23 Staff members, FGDs with two groups of women (6 & 10); 41 background interviews	Afghan doctors, midwives and care assistants; women aged 23 –56 yrs.; senior officials in MoPH; medical and midwifery educators, programme directors, community leaders and non-Afghan anthropologists, linguistics, and a historian	Qualitative design - Ethnography	Semi-structured interviews, focus group discussions and participant observation between 2010 and 2012	Thematic analysis	1. Staff worked with passion and motivated but often faced opposition from women in childbirth. 2. For effective implementation, impact of social and political factors on healthcare to be noted.
Tappis et al., 2016	To explore barriers that affect availability and utilisation of intrapartum care services	Afghanistan - four districts	Urban, semi-rural and rural areas	A Total of 48 individual interviews and 21 FGDs in four different districts	Women of reproductive age group and recently delivered and their husbands were involved. Health care professionals such as midwives, doctors, MoPH official's, hospital directors & village leaders participated in the study	Qualitative design	Secondary analysis of data from Government Health Management Information System, programme and policy document, in-depth interviews and FGDs conducted between 2002 and 2011	Framework analysis	1. Increase in investment required to improve healthcare access in fragile and conflict areas. 2. Health policy and resource allocation needed to reach women in remote and insecure settings.
Bogren et al., 2018	To identify the social, economic and professional barriers that prevent quality midwifery care	Bangladesh	Different areas - Students enroled in nursing program from urban, rural and semi-urban areas	Total of 67 midwifery students	Final year midwifery students - female unmarried aged between 19 – 23 yrs. from public nursing colleges who were about to become future midwives were selected	Qualitative design	Midwifery students from 14 colleges out of 38 in different parts of Bangladesh were selected. 14 FGDs with 4–7 participants in each group held in all 14 institutions. Data was collected in 2017.	Content analysis	1. Social barriers: cultural prejudice sets midwives in a vulnerable position. 2. Professional barriers: includes heavy workloads, staff shortage, lack of recognition, medical hierarchy, low levels of autonomy. 3. Economic barriers: lack of supplies/facilities, low salary for midwives, personal insecurity and no recreation.

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Table 3 (*continued*)

Byrskog et al., 2019	To explore the midwifery educators' perceptions of the social, economic and professional barriers that prevent quality midwifery care	Bangladesh	Public health nursing institutes involving samples from urban area	Total of 17 midwifery educators	All participants were midwifery educators from urban area aged over 45yrs	Qualitative design	Data collected. in April 2017 from midwifery educators through FGDs of 5–7 members in three different sites	Content analysis	1. Social barriers: gender issues hindering execution of midwifery practice. 2. Economic barriers: includes low salary, staff shortages, poor working conditions. 3. Professional barriers: lack of acknowledgement of midwifery profession.
Danhoundo et al., 2019	To understand the interactions between woman and midwives and to examine the factors influencing the quality of ANC	Benin	Five districts of SO-Ava, Benin. Women selected from rural community	Total of 100 pregnant women, five midwives and two physicians interviewed. One FGD with 7 Government decision-makers conducted	Pregnant women living in the district for at least two years	Qualitative design	In-depth semi-structured interviews with 107 participants and one FGD with 7 members conducted. Observation performed on vaccine administration for AN woman. All data collected between June to August 2015.	Thematic analysis	1. Care recipient's negative attitudes towards midwives. 2. Lack of communication between women and midwives. 3. Midwives' lack of accountability interrupt quality of care.
Narchi et al. 2011	To analyse the exercise of essential skills for midwifery care by midwives and to specify the obstacles encountered by them in public health system of Sao Paulo	Brazil	Public health services - 59 health care units and 6 hospitals	Around 272 nurses & midwives	Midwives or nurses caring for pregnant women and new-borns at primary health care services and maternity hospitals were recruited. Participants were nurse coordinators, maternity nursing or midwifery staff in hospital and public health	Descriptive exploratory using quantitative approach	Data collection took between October 2006 to December 2007. Nurse coordinators interviewed and nurses/midwives given questionnaires to write about the obstacles.	Descriptive analysis	1. Poor skills of midwives during pregnancy and labour care for women. 2. Institutional barriers and personal resistance. 3. Lack of protocols on best essential practice.
Matsuoka et al., 2010	To identify the barriers to utilization of maternal health services provided by SBAs	Cambodia	Rural area - three districts of Cambodia	Total of 30 women for interview and total of 36 for FGDs	Women aged 15–49yrs residing in the communities. women used or not used maternity services were considered	Qualitative design	Data collected between September and October 2006 in six selected communities using semi-structured interviews and FGDs.	Analysis conducted using codes and categories for key phrases	1. Financial barriers: lack of resources. 2. Physical barriers: poor access to care, lack of wards/facilities, women's attitude. 3. Cognitive barriers: lack of knowledge and negative attitude amongst women. 4. Organisational barriers: poor skills amongst midwives and lack of staff. 5. psychological and socio-cultural barriers: traditional beliefs and anxiety about health facility.

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Table 3 (*continued*)

Summer et al., 2017	To explore perceptions, attitudes and expectations about the addition of professional midwifery programme to healthcare system	Guatemala	Six health centres - Urban area	Total of 32 participants: Midwives (4), TBAs (10), Physicians (4), Politicians/key decision makers (3) and nurses (11)	The participants were professional midwives, TBAs, physicians, politicians/key decision makers and nurses	Qualitative design	Data collected using semi-structured interviews in Spanish and then translated	Grounded theory	1. Resistance amongst health professionals to work with professional midwives. 2. Lack of supervision for midwives while monitoring women and conducting deliveries in communities.
Ghazi Tabatabaie et al., 2012	To determine the factors that hinder midwives and parturient women form using hospitals during complications in home births	Iran	Home births-urban area	Around 21 women and their relatives interviewed, and 17 interviews conducted using midwives	Women in the Zahedan city and their relatives participated in the study. Additionally, more experienced midwives/skilled birth attendants also participated	Mixed method	In-depth interviews conducted for qualitative data and for quantitative: existing metric data collected.	Grounded theory	1. Socio-cultural factors hindering women from seeking care from midwives. 2. Resistance amongst physicians and other health professionals to work alongside midwives. 3. Lack of health insurance for women. 4. Lack of proper referral system.
Essendi et al., 2015	To find the challenges in providing maternal care services	Kenya	Rural area	Total of 211 participants	Respondents were both male and female and aged between 18 and 60 years. Mothers and their partners, community leaders and health care providers were involved	Qualitative design	FGDs used to collect data between March and May 2011	Thematic analysis	1. Infrastructural challenges like lack of electricity, water. 2. Lack of access to maternal and new-born care due to poor roads.
Mannah et al., 2014	To identify opportunities and challenges that affect women's access to maternal care services	Kenya	Two districts in Kenya – rural area	Community midwives 20 and 6 key informants	Key informants include pioneers, funder, manager, coordinators and supervisors of community midwifery programmes	Qualitative design	In-depth interviews conducted in June and July 2011	Thematic analysis	1. Having midwives in communities facilitated implementation as accessing midwifery care feasible. 2. Lack of adequate referrals and insecurity was a barrier.
Sychareun et al., 2013	To identify constraints and consider what types of action required for scale-up of Maternal, Neonatal and Child Health services	Lao	Health district hospitals	Interviews with 45 participants	Health providers, managers, technical staff and village health volunteers working in the district hospitals aged 23 to more than 44 were selected. Both male and female participants involved	Qualitative design	Individual interviews conducted in Mid-January 2012	Thematic analysis	1. Constraints in supply related to lack of human and physical resources. 2. Lack of supervision and poor remuneration to staff. 3. Socio-cultural practices, language barrier and lack of transport to access care. 4. Lack of effective communication networks.

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Table 3 (*continued*)

Uny et al., 2019	To identify the maternal health policy implementation	Malawi	Three districts of Malawi – rural area	Total of 157 participants	Rural community actors, health professionals and other stakeholders	Qualitative design	Data collected in 2013 using semi-structured interviews and FGDs	Grounded theory	1. Complexity in decision-making process. 2. Implementation policy gaps.
Machira and Palamuleni, 2018	To explore women's perspectives on the quality of health care service delivery in Malawi	Malawi	Hospitals and health centres in three districts	Total of 58 women	Women living in three districts of Malawi	Qualitative design	Data collected through FGDs of 6–12 women as participants	Thematic framework analysis	1.Lack of resources. 2. Unethical practices amongst professionals.
Abou-Malham et al., 2015	To understand how the possible barriers and facilitators influenced the action plan implementation in Morocco	Morocco	Two regions in Morocco affiliated with MOH. Both rural and urban area.	Total sample $n = 107$	The participants comprised of midwife practitioner, nurses' physicians, obstetricians' medical doctors, midwifery managers, midwifery educators, midwifery representatives, midwifery students, senior nurse managers, academic management staff, academic directors, medical administrative officers, administrative nurse cadres, health programmer, women and consultant	Case study using qualitative methods	Data collected in June and July 2010. FGDs, Individual interviews and observations and documents were utilized for data collection	Thematic analysis	1. Misalignment of values, methods, actor's ad targets. 2. Bureaucratic structure and lack of readiness of the sociocultural system. 3. National and international policy to strengthen midwifery.
Adolphson et al., 2016	To explore midwives' perspectives of their working conditions, their professional role and perceptions of attitudes towards mothers	Mozambique	Urban, suburban, village and remote areas / general and rural hospitals and health centres	Nine midwives	Midwives working in four different types of environments were involved. The average age between 20 and 35yrs and with 1–5 years of work experience and most with medium level education	Qualitative design	Individual semi-structured interviews conducted	Content analysis	1. Lack of resources. 2. Frustration and feelings of insufficiency amongst midwives. 3. Provision of empathetic care and deep engagement with women facilitated care.
Biza et al., 2015	To explore the factors influencing provider uptake of the recommended package of ANC interventions	Mozambique	National provincial and district level	five focus groups discussion (7 to 13 women)	Senior health officers at all levels, MCH nurses, technical staff, pregnant women, and women from community	Qualitative design	In-depth interviews with stakeholders and five FGDs with women were conducted between May and June 2011	Content analysis	1. organizational challenges: lack of audits, poor environmental conditions, supply deficiencies. 2. Care providers barriers: no clinical guidelines, resistant attitude to adopt new practices. 3. care recipients challenges: lack of access, women perceived unfriendly environment.

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Table 3 (*continued*)

Choulagai et al., 2013	To investigate the barriers to ANC and delivery care	Nepal	Rural and remote districts	Village Development Committees (VDC): 50 and nearly 2481 women	Women who delivered baby within 12 months preceding data collection	Cross-sectional study	Structure questionnaire for women and data collected between May and June 2011	Multiple logistic regressions	1. Living less than 30 mins from health facility enhanced midwifery care. 2. Lack of transport hindered access for women in remote areas.
Dhakal et al., 2011	To assess the use of skilled delivery care and barriers to accessing delivery care	Nepal	Rural area	Random selection of 150 women	Women between age 15–49yrs and married and delivered child within 24 months before data collection	Descriptive Cross-sectional study	Structured questionnaire used	Chi-square test /Multivariate logistic regression	1. Lack of access due to poor transportation 2. Lack of awareness. 3. Practice of seeking TBAs to conduct home delivery.
Okeke et al., 2017	To scale-up skilled birth attendance program and provide lessons for policy makers	Nigeria	Rural community	A total of 16 midwives and 17 policymakers	Local government policy makers and midwives	Qualitative design	Semi-structured interviews with government stakeholders and FGDs with women and men were conducted between Nov 2014 to Jan 2015	Thematic analysis	1. Impact of care affected due to less uptake of services. 2. Implementation challenges due to lack of support from key stakeholders at state and local levels.
Exley et al., 2016	To understand the views and experiences of childbearing women served by midwife's service scheme	Nigeria	Rural area /primary health centres	Total of 45 women, 15 midwives, 9 state policymakers and 9 local policymakers	Women given birth in last six months, midwives, policymakers, and community members	Qualitative design	Data collected between June 2014 and Jan 2015. Data collected using interviews in women, policymaker midwives. FGDs with community members.	Thematic analysis	1. Increasing number of midwives facilitated midwifery care. 2. Lack of awareness amongst women acted as barriers. 3. Financial barriers leading to lack of drugs, transport and equipment.
Sarfraz et al., 2015	To explore the perspectives of rural community members about antenatal and delivery care services utilization	Pakistan	District Attock-Community	A total of 20 mothers, 20 men and 18 mothers-in-law	Married women in reproductive age group, married men and mothers-in-law participated	Qualitative design	Data collected using 6 FGDs with 20 mothers, 20 men and 18 mothers-in-law. Each FGD had 5- 8 members.	Content analysis	1. Lack of knowledge amongst women. 2. Socio-cultural practice of seeking care from TBAs. 3. Lack of transport facilities. 4. Lack of trust on midwives

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Table 3 (*continued*)

Ahmed et al., 2017	To understand how community midwives (CMWs) perceive the key factors for acceptability and community related barriers to maternal practices	Pakistan	Two districts- Community	Total of 100 participants	CMWs, lady health supervisors and managers involved in maternal neonatal and child health program	Qualitative design	Nine FGDs and 34 in-depth interviews conducted. Data collected in May and June 2011.	Content analysis	1. Family restrictions and lack of independence to women to choose place of birth. 2. Weak communication between community and programme organiser.
Mumtaz et al., 2015	To explore the CMWs experiences to overcome barriers in their practice	Pakistan	Community- Two districts	Total of 91 participants	CMWs, policy makers, program managers and maternity health care providers and community members like mothers, their husbands, mothers-in-law, and family members	Qualitative design	Interviews and observations conducted, and data collected between 2011 and 2012	Content analysis	1. Professionalism, providing respectful maternity care acted as facilitators. 2. Family support essential to work efficiently as community midwives.
Rehman et al., 2015	To explore barriers experienced by CMWs when delivering their services	Pakistan	Two rural districts - community level	A total of 41 participants	CMWs, lady health supervisors, managerial staff involved in maternity care program	Qualitative design	Individual interviews conducted and data collected between May and August 2011	Content analysis	1. Financial constraints. 2. Difficulty in establishing relationship between midwives and community. 3. Lack of supplies and referral system.
Mortensen et al., 2018	To investigate the impact of Palestinian midwife-led continuity model on use of maternity services	Palestine	Two regions/villages, Rural clinics	Total 39 clinics: 14 in intervention group and 25 in control group	Pregnant women residing in rural villages away from 3 km from the centre	Non-randomized intervention design	Data collected 2 years before intervention (2011&2012) & 2 years after intervention (2014&2015). Registry used to collect individual data.	Poisson regressions/mixed effect models performed	Implementing midwife-led model of care facilitated: 1. Increased antenatal visits 2. Increased home visits by midwives thereby improving midwifery care. 3. Improved referral services.
Guerra-Reyes, 2016	To identify challenges and analyse experiences of SBAs implementing a culturally appropriate birth care policy	Peru	Urban area Primary health centres: Two sites	Total of 5 SBAs and observations conducted in labour ward	SBA from 24 - 42yrs with Intercultural Birth Policy (IBP) implementation experiences	Qualitative - Ethnography	Data collected in 2007 and 2010. Interviews with SBAs and observation of care in labour ward were conducted.	Thematic analysis	1. Weak institutional support. 2. Lack of adequate training. 3. Negative perceptions of policy by care providers.

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Tuyisenge et al., 2019	To understand how MH CHWs facilitate access to maternal care	Rwanda	Community level health centres – Urban area	Total of 22 maternal health CHWs	CHW coordinators working in local health centres. All participants were women between aged 33 - 52 and had 2- 8 children on average. The work experience ranged from 3months to 8yrs	Case Study Methodology Approach	Data collected in three provinces of Rwanda. In-depth interviews conducted between July and August 2017 with MH–CHWs.	Thematic analysis	1. Good relationship with community facilitated midwifery care. 2. Lack of access to care by women acted as a barrier. 3. Weak socio-political environment. 4. Inadequate resources.
Ngxongo and Sibiya, 2014	To investigate the challenges experienced by midwives during the implementation of basic antenatal care programme	eThekwini District, South Africa	Primary health centre – Urban area	Survey conducted with 59 midwives in 18 PHCs	Midwives working in a health centre with antenatal care programme and should have worked in the centre for one year and longer	Non-experimental descriptive quantitative study	Data collected in two phases. First and second phase 18 PHC were selected, and 59 midwives were given self-administered questionnaires	Descriptive analysis	1. Staff shortage. 2. Lack of transportation. 3. Weak referral system. 4. Lack of adequate material resources. 5. Lack of managerial support.
Munabi-Babigumira et al., 2019	To analyse the strategies implemented and to provide lessons for policymakers to further improve maternity care	Uganda	Two districts in Kampala, Capital city of Uganda – Urban area	Totally 18 informants participated	Key informants working for at least 2 yrs. in Ugandan Ministry of Health and Professional Organisations as Nurses and Midwifery Council, Ugandan Parliament, Health Service Commission Private not-to profit sector, civil society organisations and districts health officers chosen	Case Study Approach	Semi-structured interviews	Thematic analysis	1. Strong political commitment and support enhanced implementation. 2. Policy implementation to bring midwifery as a separate cadre acted as facilitator. 3. Slow staff recruitment, lack of sufficient skills amongst midwives hindered implementation.
Doan et al., 2018	To report acceptability of village-based midwives by local communities through implementation research	Vietnam	Village- Two provinces	$N = 31$ villages from 8 communes selected	Ethnic minority midwives from the selected 8 communes, Pregnant mothers with infants younger than 12 months and their relatives. Village leaders, village health workers, women's union and health managers involved	Mixed Method approach: Quasi-experimental - pre and post-test design	Pre-test conducted in September 2015/ Intervention conducted in Oct 2015 to April 2016)/Post-test survey conducted in May 2016. Questionnaire for quantitative methods and FGDs and in-depth interviews.	Chi-square independent *t*-test/Multivariate logistic regression. Qualitative thematic framework approach.	1. Awareness of programme facilitated. 2. Low self-esteem and lack of work recognition, allowances for midwives acted as barriers.

Abbreviations: FDGs: Focus Group Discussions; CMWs: Community Midwives; MH CHWs: Maternal Health Community Health Workers; SBAs: Skilled Birth Attendants; TBAs: Traditional Birth Attendants; VDC: Village Development Committee; MOH: Ministry of Health; PHC: Primary Health Centre; ANC: Antenatal Care; MoPh: Ministry of Public Health; MCH: Maternal and Child Health.

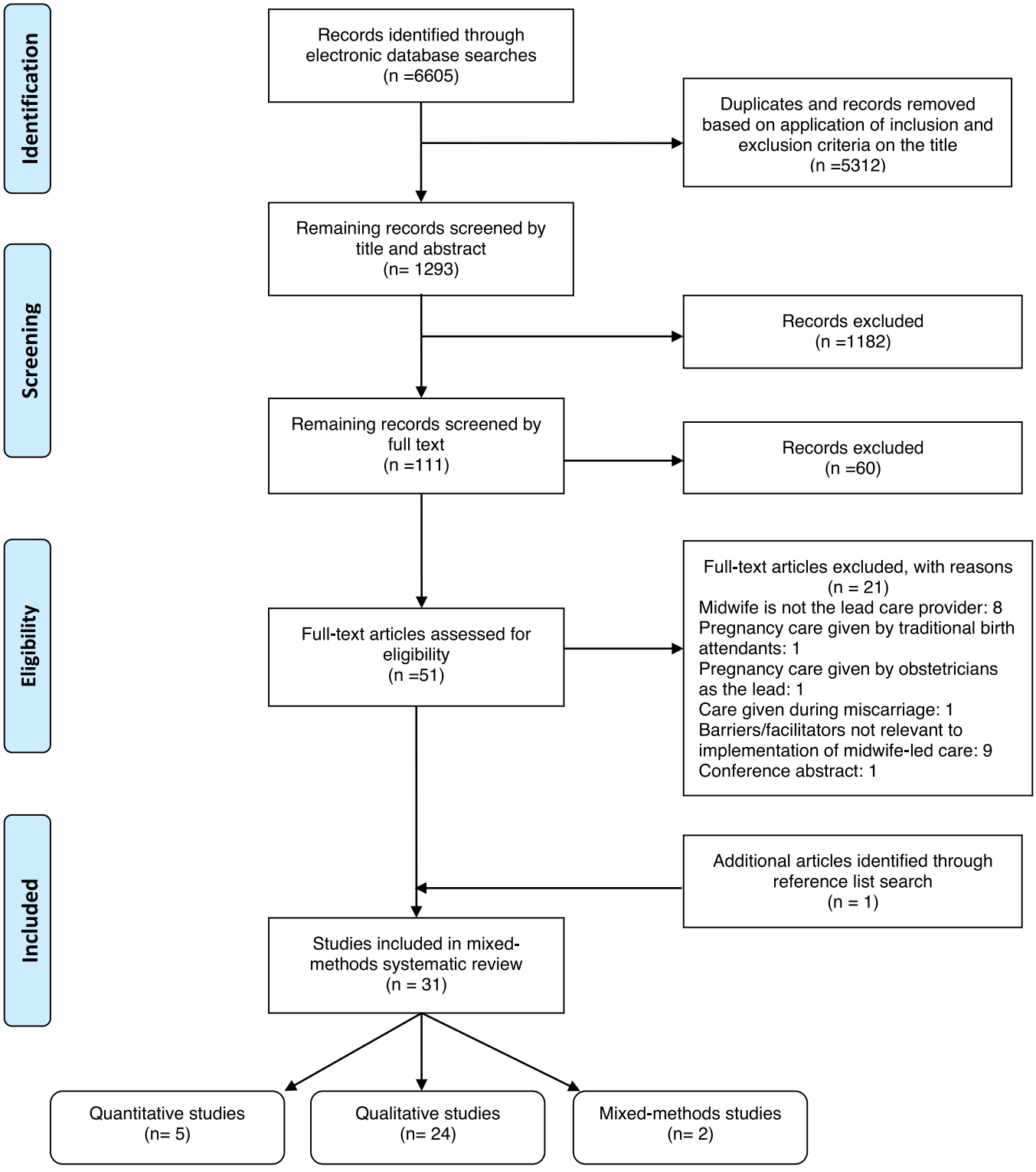

Fig. 1. PRISMA flow diagram.

5 Mapping and interpretation: Using the chart, data was interpreted and synthesized. In this stage, associations were identified, and the findings explained using the five levels of the SURE framework. The data extraction and analysis process were overseen by two authors (MD, SW) and areas of ambiguity were discussed to provide resolution.

Results

A total of 6605 articles were identified through electronic database searches of which 1293 remained after removal of duplicates. On screening by titles and abstract, 1182 records were excluded. The remaining 111 studies were reviewed by full-text and

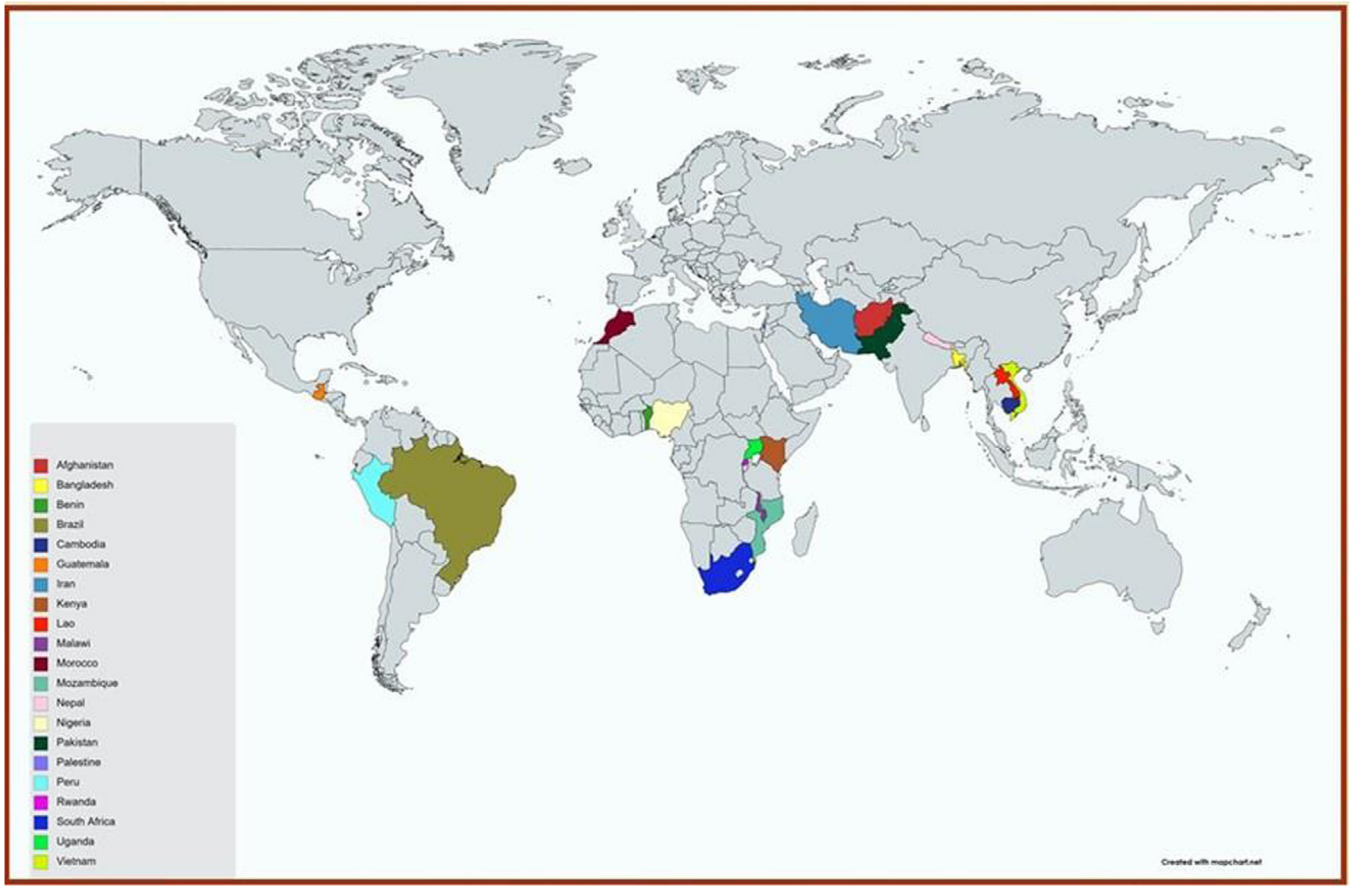

Fig. 2. Geographical distribution of included studies.

60 records were excluded as no specific midwifery programme was addressed. The full text of the remaining 51 papers were assessed for eligibility and a further 21 studies were excluded. One additional study was identified by reviewing the reference list of the included studies. Finally, a total of 31 studies were included. The process and reasons for the exclusion of studies is provided in Fig. 1.

Country and setting

The geographical distribution of the 21 LMICs included in this review is shown in Fig. 2. Based on the WHO regions the majority of the studies were from the African region($n = 8$). The remaining studies were from the Americas ($n = 3$), south-east Asian region ($n = 2$), eastern Mediterranean region ($n = 4$) and western pacific region ($n = 3$). One study which was from Palestine was not listed in the WHO region list. For a full list of WHO regions see supplementary material (file 4). Eleven studies were conducted in urban areas, 15 in rural areas, and five in both urban and rural settings.

Study participants and methods

Studies comprised data gathered from three key groups: care recipients, care providers, and stakeholders. Of the 31 included studies, ten included all three groups, five included care providers and stakeholders, and one focused on care recipients and care providers. Seven comprised only care recipients, five included only care providers, and three studies included only stakeholders. In terms of methodologies employed by the 24 qualitative studies, eight used both focus groups and interviews, three used interviews and observation, and two studies used interviews, focus groups and observation. Seven used only interviews and four used only focus groups. All remaining quantitative studies employed questionnaires.

Review findings

The findings on barriers and facilitators to the implementation of midwife-led care are presented based on the five levels of the SURE framework: recipients of care, providers of care, stakeholders, health system and social and political factors (The SURE collaboration, 2011).

Level 1: Recipients of care

Barriers: Lack of knowledge, negative attitudes

Many women had no basic information about midwifery care in their community, with one study finding up to 54% of women and family members were unaware of midwifery led services (Dhakal et al., 2011). Women could sometimes not distinguish a nurse from a midwife, which also led to a low uptake of midwifery-led services (Arnold et al., 2018; Tappis et al., 2016; Dhakal et al., 2011; Biza et al., 2015; Ghazi Tabatabaie et al., 2012; Sarfraz et al., 2015; Matsuoka et al., 2010; Ahmed et al., 2017; Bogren et al., 2018; Byrskog et al., 2019). Some women were not confident that midwives had the necessary skills, especially those needed for complex births (Bogren et al., 2018; Byrskog et al., 2019; Sarfraz et al., 2015; Ahmed et al., 2017; Arnold et al., 2018; Tappis et al., 2016). For example, care recipients in one study from Afghanistan claimed: *'the women that call themselves midwives at private clinics do not have sufficient skills and experience…"* (Tappis et al., 2016).

Facilitators: Raising awareness, increasing engagement

Creating awareness amongst care recipients through home visits, monthly meetings, social networking and publicity campaigns increased their knowledge on pregnancy and the need for midwifery services. As knowledge improved, women in the community started to utilise midwife-led care more (Sychareun et al., 2013; Adolphson et al., 2016; Ahmed et al., 2017; Sarfraz et al., 2015; Mumtaz et al., 2015; Mannah et al., 2014; Tuyisenge et al., 2019; Exley et al., 2016). Home visits and providing antenatal cards encouraged pregnant women to approach midwives at health centres (Biza et al., 2015). By engaging with women directly, it fostered their confidence to give birth at health facilities with a midwife's assistance (Tappis et al., 2016; Exley et al., 2016). For example, women in one study reflected: *"Ten years ago, all births took place at home but now… prefer to deliver with the midwife at the clinic."* (Tappis et al., 2016).

Level 2: Providers of care

Barriers: Inadequate knowledge and confidence, poor examples of care

Midwives' lack of confidence in their knowledge and skills had a negative impact on midwife-led care (Guerra-Reyes, 2016; Doan et al., 2018; Tappis et al., 2016; Rehman et al., 2015; Uny et al., 2019; Summer et al., 2017). In particular, midwives were concerned about recognising complications during pregnancy, for example, midwives in a Guatemalan study (Summer et al., 2017) reported that they "*don't have knowledge if patients come with complications*." In some cases, midwives were slow to refer women with complications to appropriate tertiary services leading to negative perceptions about their competence (Uny et al., 2019; Rehman et al., 2015; Summer et al., 2017). Unfortunately some women also reported poor experiences with midwives, e.g. receiving unfriendly or abusive language during childbirth (Arnold et al., 2018; Danhoundo et al., 2019; Matsuoka et al., 2010; Exley et al., 2016; Uny et al., 2019; Machira et al., 2018). When this occurred, it undoubtedly contributed to a community view of midwives as "unprofessional" and which also affected uptake of their services.

Facilitators: Appropriate education and support, workplace motivation

Learning from suitably qualified educators increased midwives' knowledge and improved their confidence with complex pregnancies (Arnold et al., 2018; Abou-Malham et al., 2015; Byrskog et al., 2019; Summer et al., 2017; Rehman et al., 2015; Bogren et al., 2018; Tappis et al., 2016; Essendi et al., 2015; Ngxongo et al., 2014; Biza et al., 2015; Mannah et al., 2014; Ahmed et al., 2017; Adolphson et al., 2016). Midwifery professionals felt that education should *"be based on global practice as well as needs to be applicable to daily practice."* (Munabi-Babigumira et al., 2019; Biza et al., 2015; Bogren et al., 2018; Abou-Malham et al., 2015). Arranging effective supervision for newly qualified midwives in clinical settings also helped to embed midwifery-led care. (Ahmed et al., 2017; Mannah et al., 2014; Sychareun et al., 2013; Biza et al., 2015; Rehman et al., 2015; Summer et al., 2017).

Improving working conditions by providing adequate salaries and financial incentives served to motivate midwives, especially those working in remote rural areas. A study in Bangladesh, for example, reported that the perception of fair financial renumerations: *"increase[s] the output of the work performed by the midwives."* (Bryskog et al., 2019). In addition, recognition of their work by the community, increased midwives' job satisfaction and in turn their motivation to practice (Adolphson et al., 2016; Doan et al., 2018; Mannah et al., 2014; Okeke et al., 2017; Byrskog et al., 2019). A midwife from Mozambique explained that *"…after the mother has pushed out, she says,: "Thank you for supporting us" - this makes me feel more motivated, I feel more enthusiastic."*(Adolphson et al., 2016).

Level 3: Stakeholders

Barriers: Resistant attitudes

Studies by Okeke et al. (2017) and Abou-Malham et al. (2015) indicated that stakeholders' negative views of midwifery services resulted in an "*attitude of resistance towards midwives…*". In most LMICs, key stakeholders were involved only after the inception of the midwife-led care programme within their community. Without personal investment from the outset, these stakeholders found it difficult to welcome or appreciate the midwifery services offered. Indeed, these key stakeholders often found fault and sometimes actively opposed the implementation of midwife-led care in their setting.

Facilitators: Engagement with stakeholders

Having stakeholders who were positive about the benefits of midwife-led care was key to successful implementation (Tappis et al., 2016; Tuyisenge et al., 2019; Okeke et al., 2017). In some studies, midwives worked in collaboration with village heads, who introduced the midwife to the community and served as a link between the care providers and care recipients (Ahmed et al., 2017; Tuyisenge et al., 2019). The importance of this input was also underlined by a study in Uganda which reported that stakeholders' engagement supported scaling up of the midwife-led care programme to other zones (Munabi-Babigumira et al., 2019).

Level 4: Healthcare system

Barriers: Access issues, lack of funding, workforce shortages, lack of midwife autonomy

Lack of adequate transport facilities prevented care recipents from attending midwife-led units for routine pregnancy checkups. (Tappis et al., 2016; Matsuoka et al., 2010; Mannah et al., 2014; Essendi et al., 2015; Sychareun et al., 2013; Uny et al., 2019; Machira et al., 2018; Biza et al., 2015; Dhakal et al., 2011; Choulagai et al., 2013; Okeke et al., 2017, Sarfraz et al., 2015; Ahmed et al., 2017; Rehman et al., 2015; Exley et al., 2016; Tuyisenge et al., 2019). Women in the community were often unable to afford additional charges (e.g., food, accommodation, medicines) and therefore refused to use midwifery services, whilst most LMICs could not provide health facility schemes and health insurance policies to support them (Tuyisenge et al., 2019; Sychareun et al., 2013; Ghazi Tabatabaie et al., 2012).

In LMIC, infrastructural facilities at midwifery units were often poor, with inadequate beds, no proper wards, and no privacy due to broken windows and doors (Narchi et al., 2011; Matsuoka et al., 2010; Ghazi Tabatabaie et al., 2012; Biza et al., 2015; Okeke et al., 2017; Munabi-Babigumira et al., 2019; Guerra-Reyes., 2016). Delivery kits and manual vacuum aspiration devices were often not available. In Africa, lack of water and electricity were also a problem in some units (Essendi et al., 2015; Munabi-Babigumira et al., 2019; Okeke et al., 2017). Such units became unappealing for care recipients to visit, and hence programmes of midwife-led care were discontinued in many regions. Indeed, it was common that programmes were not implemented as planned due to limited finances (Munabi-Babigumira et al., 2019; Abou-Malham et al., 2015; Sychareun et al., 2013; Mannah et al., 2014). Shortages of midwives were also common within units which led to exhausted and stressed staff who were unable to provide standard care for women (Tappis et al., 2016; Bogren et al., 2018; Byrskog et al., 2019; Narchi et al., 2011; Mannah et al., 2014; Essendi et al., 2015; Sychareun et al., 2013; Adolphson et al., 2016; Okeke et al., 2017; Ngxongo et al., 2014; Mortensen et al., 2018; Munabi-Babigumira et al., 2019; Dhakal et al., 2011; Danhoundo et al., 2019; Matsuoka et al., 2010; Biza et al., 2015; Essendi et al., 2015). One of the stakeholders in a Nigerian study stated: *"Another issue is lack of enough staff…midwives are not enough to cater for the population."* (Okeke et al., 2017).

Performing autonomous midwife-led care was difficult when midwives had little power to act in the health system, having to consult a physician or perform procedures only with the assis-

tance of a practitioner (Tappis et al., 2016; Mannah et al., 2014; Adolphson et al., 2016; Abou-Malham et al., 2015; Bogren et al., 2018; Byrskog et al., 2019; Summer et al., 2017; Narchi et al., 2011). On many occasions, midwives appeared to be just passive observers as they did not have the authorization to act. *"The healthcare system… is highly hierarchical, affording primary authority to the physician."* (Summer et al., 2017)

Facilitators: Strong midwifery leadership and funding

Effective communication and leadership skills helped the successful implementation of midwife-led care. Two studies in Bangladesh emphasised the importance of involving midwives in policy dialogues and giving them greater scope as decision-makers (Bogren et al., 2018; Byrskog et al., 2019). Strategic leadership and support from professional organizations increased the likelihood of gaining authority and promoting midwifery care (Arnold et al., 2018; Ngxongo et al., 2014; Guerre-Reyes et al., 2016; Abou-Malham et al., 2015; Bogren et al., 2018; Summer et al., 2017; Narchi et al., 2011; Biza et al., 2015; Mortensen et al., 2018). Individual midwives who were skilled communicators could reach out to stakeholders and care recipients were well received. In Kenya and Lao, studies reported that providing midwifery-led antenatal and intrapartum care was easier when prior relationships had been established (Mannah et al., 2014; Sychareun et al., 2013).

Funding was an important contributing factor to providing the best possible midwife-led care in LMICs. Women tended to choose a health centre based on the availability of facilities such as sufficient numbers of beds, adequate numbers of staff, and appropriate medicine and equipment. Accordingly, continuous monetary aid, which was associated with an adequate supply of key medications and equipment, served to increase public demand for using midwife-led units (Munabi-Babigumira et al., 2019; Sychareun et al., 2013; Mannah et al., 2014; Okeke et al., 2017; Machira et al., 2018; Adolphson et al., 2016; Exley et al., 2016; Sarfraz et al., 2015; Rehman et al., 2015; Tuyisenge et al., 2019; Bogren et al., 2018; Tappis et al., 2016; Essendi et al., 2015; Biza et al., 2015).

Level 5: Social and political factors

Barriers: Socio-cultural practices and political instability

It was sometimes difficult for women in rural and isolated communities not to follow traditional birthing practices, and hence providing midwife-led care was more challenging in those settings. Indeed, women reported that following religious and cultural practices necessitated an avoidance of midwife-led services (Matsuoka et al., 2010; Ahmed et al., 2017; Guerre-Reyes., 2016; Sarfraz et al., 2015; Ghazi Tabatabaie et al., 2012; Sychareun et al., 2013; Machira et al., 2018; Biza et al., 2015; Mannah et al., 2014; Exley et al., 2016). For example, in Malawi, one of the women interviewed indicated that *"pregnancy must not be disclosed to the people in the first months to avoid being bewitched"* (Machira et al., 2018) causing a delay in accessing antenatal midwifery care. Equally it was commonly reported that women were unable to access midwifery care because their husbands and other household members were making decisions on their behalf (Tappis et al., 2016; Exley et al., 2016; Bogren et al., 2018; Byrskog et al., 2019; Sarfraz et al., 2015; Matsuoka et al., 2010; Sychareun et al., 2013; Machira et al., 2018; Ahmed et al., 2017; Doan et al., 2018; Tuyisenge et al., 2019).

Political instability within LMICs also adversely affected the smooth implementation of midwifery-led care within agreed timescales. For example, political uncertainty delayed authorization and planned approval from ministry personnel (Summer et al., 2017; Abou-Malham et al., 2015). In Morocco, one midwife consultant explained: *"Reviewing the program's sessions was postponed several times with a lag of several months between scheduled dates…"* (Abou-Malham et al., 2015). Equally there were instances where the immoral conduct of policymakers negatively affected the quality of midwifery-led care and disrupted implementation. Studies in Benin and Afghanistan reported that health centre officials had been bribed to hire certain staff, who behaved unprofessionally once in post, thus tarnishing the reputation of midwifery services (Danhoundo et al., 2019; Arnold et al., 2018). *"Holders are appointed by politicians, which in turn affects the functioning of hospitals"* (Danhoundo et al., 2019).

Facilitators: Supportive legislation and regulation, future planning

Implementing midwife-led care was much easier when Governments supported an implementation programme as a national policy. The significant role of government rules and regulations was discussed in a number of studies (Abou-Malham et al., 2015; Ahmed et al., 2017; Okeke et al., 2017; Mannah et al., 2014; Matsuoka et al., 2010; Rehman et al., 2015; Tappis et al., 2016; Danhoundo et al., 2019; Bogren et al., 2018; Byrskog et al., 2019). In Morocco, having an action plan based on a national strategy led to health professionals working collaboratively to achieve successful implementation (Abou-Malham et al., 2015). Equally, the acceptability and credibility of midwife-led care programmes increased amongst care recipients when the government was perceived to have a long-term plan for these services. In addition, having policies and plans to recruit midwives on permanent contracts (Okeke et al., 2017; Munabi-Babigumira et al., 2019; Guerra-Reyes., 2016) reduced staff turnover and increased job satisfaction amongst midwives. Similarly, having licensing regulations to practice helped to retain staff in midwife-led units, leading to a more successful process of implementation overall (Mannah et al., 2014).

Discussion

This systematic review identified barriers and facilitators to the implementation of midwife-led care in LMICs. Findings from this review showed that child-bearing women in LMICs often had inadequate knowledge about pregnancy and midwifery services, and some developed negative attitudes towards midwife-led care. Similarly, research from Pakistan found that inadequate discussion about pregnancy care by health professionals resulted in limited knowledge amongst women decreasing their utilisation of antenatal care (Maheen et al., 2020). However, studies in this review suggest several ways that midwives can reach local communities to establish relationships and inform them about their work. These include targeted home visits, alongside government publicity and educational awareness campaigns which can be key to improving knowledge, attitude, and confidence amongst care recipients (Naqvi et al., 2022).

Midwife-led care has greater impact in LMICs when it is provided by skilled midwives who have been trained based on the ICM requirements (Nove et al., 2021). Training midwives to international standards can help to provide 87% of essential childbirth services to pregnant women (The Lancet 2014; World Health Organization 2019). Previous reviews and research studies also emphasize the need for midwifery education based on global standards (Michel-Schuldt et al., 2020; McFadden et al., 2020; Gavine et al., 2019; Filby et al., 2016). Likewise, this review also affirms that midwifery education should also acknowledge the local context within which midwives work. Even when midwives are educated to international standards, they still face difficulties in clinical practice due to contextual challenges. Many practice guidelines are still based on the infrastructures found in developed countries (Harrison et al., 2010). The reality is that many healthcare settings in LMICs lack even the basic essential equipment needed for safe deliveries. Findings from this review therefore emphasise the need to adapt these international guidelines to make them applicable to the local health systems (Harrison et al., 2010).

This review found that midwives gain role satisfaction when their work is recognised by care recipients. However, the role of the midwife, especially in rural areas, is often challenging. Negative attitudes amongst women and their families can demotivate midwives, potentially lowering their numbers in the workplace (Ismaila et al., 2021). Pre and post educational programmes should focus on helping midwives to develop effective resilience and coping strategies. This will help to retain staff by supporting them to meet the challenges of midwifery work in LMICs (Ismaila et al., 2021). Continuing professional development (CPD) through refresher training courses, mentoring and professional clinical supervisors are also important to maintain skilled midwives (Michel-Schuldt et al., 2020). However, it was also equally evident from this review that providing such training will sometimes be impossible due to insufficient funding.

This review found that stakeholder engagement is key to the successful implementation of midwifery services within communities. Dawson et al. (2015) also found that collaboration and partnership amongst national and international funders, government officials, health departments, professionals and community members was important to effective implementation. The ICM report also states that working together with key stakeholders will support the expansion and sustainability of midwife-led models of care (ICM, 2017). Action plans which align with a national healthcare strategy will help to unite key stakeholders for smoother implementation of midwifery services. Collaboration and joint-working are fostered by strong leadership, and it also key to developing and sustaining midwifery led care in LMICs (Michel-Schuldt et al., 2020). Similarly, midwives' involvement in policy and planning is also important (Michel-Schuldt et al., 2020; WHO 2019). Control over midwifery practice through promoting autonomy, decision-making ability, effective communication, and advocacy are considered essential factors to achieve professional distinctiveness in midwifery (Mathews et al., 2006).

This review confirms previous research showing the importance of an enabling environment (Nove et al., 2021; Homer et al., 2022) with adequate infrastructural facilities, an appropriate number of skilled clinical staff, decisive leaders, and supportive professional organisations with established guidelines and protocols. Facilities should also be carefully located, considering the cost of travelling and limited availability of transport services in LMICs (Atuoye et al., 2015). Furthermore, a nurturing environment is necessary to empower midwives to practice safely and autonomously in an area dominated by medical staff. Mathews et al. (2006) suggest that having support from higher officials and colleagues, role recognition from medical personnel and professionalism are prerequisites to empowering midwifery practice. Support from professional organizations can also provide a strong regulatory framework to improve the quality of midwife-led care (Filby et al., 2016; WHO, 2016). Despite the identification of these enabling factors however, inadequate funding remains the most significant barrier to successful service implementation. A report in the Lancet (2016) confirms that holistic financial planning and investment based on contextual need of the LMICs is paramount to successfully support health facilities (Mwaniki., 2016).

Political instability in LMICs also contributes to a lack of consistent financial investment and delays the implementation of midwife-led care programs. Kelsall et al. (2016) also comment on how political obstacles hinder the uptake of health services in LMICs. Conversely, political stability enables a more targeted health policy, adequately funded programs and stronger health governance (Kelsall et al., 2016; Ranabhat et al., 2020). Therefore, findings from this review underline the need for an accountable healthcare system. In addition, political leaders are needed who have a clear vision, commitment and work with transparency at both local and national levels (Kelsall et al., 2016; Ranabhat et al., 2020).

Strength and limitations

The use of a transparent, previously tested framework (The SURE Collaboration, 2011) to extract the data was a strength of this study. In addition, the methodological quality of the majority of studies in this review were good or adequate which supports confidence in the findings. The studies in this review reported on midwifery programmes commenced by the respective government of each country. So, taking the social, political and cultural factors and the health system arrangements into consideration (Karimi-Shahanjarini et al., 2019), the findings of this review likely to be applicable to other LMIC settings.

Whilst data extraction and quality assessment are ideally performed by two independent reviewers (Charrois., 2015), they were conducted by a single author (MTS) in this review. However, all uncertainties were fully discussed with two other authors (MD, SW) until they were resolved. Although all studies had a government-initiated midwifery program, the term 'midwife', 'midwife-led care' or 'midwife-led model of care' was seldom used. This variability in terminology meant that some high impact studies could have been excluded from the search. Furthermore, some relevant studies could have been missed due to the exclusion of grey literature. Finally, language restrictions imposed in this review meant that a number of studies conducted in LMIC, but written in languages other than English and Spanish, would have been excluded.

Implications for research

This review shows that positive attitudes from women and stakeholders facilitate the implementation of midwife-led care in LMICs. It is important to develop a greater understanding of their expectations of care, which will enhance the development of a strategic framework for successful implementation. Additionally, involving them in research may increase their knowledge and lead to a greater receptivity to midwife-led care. Whilst the evidence for this review was considered to be adequate, there were still very few high level evidence studies such as randomised controlled trials. Adequately supporting larger trials within LMICs is important, in order to definitively establish the effectiveness of service implementation, adequacy of training standards and appropriate clinical outcomes.

CONCLUSION

Creating awareness about midwife-led care was found to increase knowledge amongst care recipients and improve uptake of these services in LMICs. Having qualified and adequately supervised midwives who can practice with autonomy in safe, well-resourced units is key to the successful implementation of midwife-led services. To retain the workforce, it is also important that midwives are provided with suitable financial renumeration and are able to gain satisfaction from their role. Despite scarce resources, the benefits of effective midwifery education are significant and a cost-effective means of reducing the healthcare burden within LMICs. Alongside improving clinical expertise, enhancing their advocacy, counselling and communication skills would help midwives to engage more effectively with women and their families, obtain leadership positions and gain the trust of community leaders and government agencies. This is important as the support of these stakeholders from the outset is key to ensuring the effective implementation of midwife led-care programs in LMICs.

Ethical approval

Ethical approval was not required for this systematic review.

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Systematic review protocol registration number

This protocol is registered with the International prospective register of systematic reviews (PROSPERO 2020). Registration Number: CRD42020197887.

Declaration of Competing Interest

The authors have no conflicts of interest to disclose.

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Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.midw.2023.103696.

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