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Determinants of quality of care and access to Basic Emergency Obstetric and Neonatal Care facilities and midwife-led facilities in low and middle-income countries: A Systematic Review

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Determinants of quality of care and access to Basic Emergency Obstetric and Neonatal Care facilities and midwife-led facilities in low and middle-income countries: A Systematic Review

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Abstract

Background: Maternal mortality is a major challenge to health systems in Low and Middle-Income Countries (LMICs) where almost 99% of maternal deaths occurred in 2015. Primary-care facilities providing Basic Emergency Obstetric and Neonatal Care (BEmONC) facilities, and facilities that are midwife-led are appropriate for normal birth in LMICs and have been proposed as the best approach to reduce maternal deaths. However, the poor quality of maternal services that leads to decreased utilisation of these facilities is among the major causes of maternal deaths worldwide. This systematic review studied factors affecting the quality of care in BEmONC and midwife-led facilities in LMICs.

Methods: A number of public health and social science databases were searched using the following search terms: birth centre, skilled birth attendant, low-income/developing countries and quality of care. Articles in English discussing components of quality of care of BEmONC and midwife led facilities published since 1990 were included. Of the 67 full-text articles reviewed, 28 were included in the study based on inclusion and exclusion criteria. Data were extracted on a standard form and analysed thematically.

Results: Most articles were from Africa (n=20) and were quantitative surveys or cohort studies (n=14). Thematic analysis of the main ideas revealed various factors affecting quality of care including facility level determinants and other determinants influencing access to care. Facility-level determinants included these barriers: lack of equipment and drugs at the facility, lack of trained staff, poor attitudes and behaviour of service providers, and poor communication

with women. Facility level positive determinants were: satisfaction with services, emotional support during delivery and trust in health providers. The access-to-care determinants were: socio-economic factors, physical access to the facility, maintaining privacy and confidentiality, and cultural values.

Conclusion: Improving quality of care of birthing facilities requires addressing both facility level and access-to-care determinants in order to increase utilization of the services available at the BEmONC and midwife-led facilities in LMICs.

Keywords: *Maternal mortality, quality of care, childbirth, basic emergency obstetric care, low and middle-income countries*

Introduction

Maternal mortality is defined as the death of a woman during pregnancy, childbirth or in the 42 days after birth, irrespective of the duration and site of pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes.¹ It is a major challenge for health systems worldwide. Recent estimates show almost 99% (302,000) of global maternal deaths in 2015 occurred in LMICs, the majority (66%) in sub-Saharan Africa (201,000) followed by Southern Asia (62,000).² The global campaign to reduce maternal mortality was formally launched in 1987 during the International Safe Motherhood Conference in Nairobi which led to the launch of the Safe Motherhood Initiative.³ The ultimate goal of the Safe Motherhood Initiative is to ensure attendance at every birth by a skilled health professional and that every woman who has an obstetric complication receives care within a basic emergency obstetric and neonatal care facility (usually a lower level facility such as health centre or maternity centre) or in a comprehensive emergency obstetric and neonatal care facility (usually district, regional or referral hospital).^{4,5} Together this package is called Emergency Obstetric and Neonatal Care (EmONC), a package of medical interventions required to treat major direct obstetric complications as identified by the WHO, UNICEF and UNFPA.^{6,7} Basic EmONC (BEmONC) provides the following set of seven 'signal functions': administration of parenteral antibiotics; administration of anticonvulsants; administration of parenteral uterotonics; manual removal of placenta; removal of retained products; assisted vaginal delivery; and resuscitation of the newborn.⁸ A comprehensive EmONC (CEmONC) facility provides all the BEmONC signal functions and in addition performs surgery and provides blood transfusions.⁶

By definition “a skilled attendant is an accredited health professional – such as midwife, doctor or nurse – who has been educated and trained to proficiency in the skills needed to manage normal (uncomplicated) pregnancies, childbirth, and the immediate postnatal period, and in the identification, management, and referral of complications in women and newborns”.⁹ Historical evidence combined with evidence from the *State of World Midwifery Report 2014* shows that midwives can provide 87% of the needed essential care for women and newborns when educated and trained to international standards and when they work within a functional health system and enabling environment.^{10,11} A primary health centre intrapartum-care strategy, which provides essential obstetric care with prompt recognition and referral to CEmONC, has been proposed as the best approach to reduce maternal mortality. This strategy is considered adequate for most births and fits well with LMICs.⁷ Although many deaths that are due to complications of pregnancy and childbirth can be avoided by timely referral to BEmONC and CEmONC, the majority of women in LMICs continues to deliver at home or in a community setting without a skilled birth attendant (SBA) or an available facility-based service that gives access to EmONC.¹²

The existence of maternal health services does not guarantee its use and the use of these services does not guarantee optimal outcomes. In this context, the concept of quality of care comes into play which can explain why women do not use services, use them late or suffer an undesirable outcome even if they access the maternal health services.¹³ Poor quality of maternal and newborn care is one of the major causes of maternal deaths and consequently there is a need for overall quality improvement throughout the continuum of care along with improved comprehensive emergency care if a substantial reduction in maternal mortality is to be achieved.¹⁴⁻¹⁶ Poor quality of maternal services is not only about the available resources in the health system nor is it only about the absence of services.¹⁷ There are different measures of quality used for maternal health in LMICs such as utilisation of services, adherence to appropriate clinical practices and provision of essential health services. Measures of availability of drugs and equipment, case fatality rates, training scores, avoidable mortality, client satisfaction and out of pocket expenditures by clients can be used as quality indicators.¹⁸ To assess quality of care in obstetric services, measures such as evaluation of the providers’ knowledge and attitudes, evaluation of care based on medical charts and direct observations of service providers during episodes of care are used.¹⁹ However, there are studies which show evidence of a need for focusing on non-facility determinants of maternal health service quality including health policies, supply distribution, community acceptability, equitable access to

care, socio-economic inequities, traditional attitudes and practices, and status of women.^{18, 20-23}

There are some studies on non-attendance at birth facilities in LMICs^{20, 21} as well as a few review studies.^{24,25} However, there are no studies or systematic reviews on factors affecting quality of obstetric services in BEmONC facilities or midwife-led birthing centres within LMICs. There is thus a need for a systematic review to study determinants of quality of care of BEmONC services and women's access to such services in order to understand reasons for their poor utilisation in LMICs. To address this gap in knowledge, we conducted a systematic review of the literature, focusing on factors affecting quality of care of the BEmONC and midwife-led facilities in LMICs.

Method

Search

A literature search included the following databases: CAB Abstracts, Global Health, MEDLINE, CINAHL, Science Citation Index, Social Science Citation Index, OAIster, PsycINFO, ScienceDirect, Scopus, Cochrane and a few others (see Table 1).

The search strategies were first tested with various combinations until the desired strategy was finalised. The strategy was then subject to various restrictions in order to remove unrelated studies from the search.

Table 1. Summary of search terms and strategy

Search terms	
BEOC facilities (S1)	“*birth* cent*” OR “*childbirth* cent*” OR “maternal-child health cent*” OR “delivery room*” OR “maternity hospital*” OR “maternity waiting home*” OR “primary health care” OR “primary care” OR “primary healthcare”
Skilled birth attendant (S2)	“skill* birth attendan*” OR “skill* deliver*” OR midwi*
Developing countries (S3)	"developing countr*" OR "developing nation*" OR "developing population*" OR "developing world*" OR "less developed countr*" OR "less developed nation*" OR "less developed population*" OR "less developed world*" OR "lesser developed countr*" OR "lesser developed nation*" OR "lesser developed population*" OR "lesser developed world*" OR "under developed countr*" OR "under developed nation*" OR "under developed population*" OR "under developed world*" OR "underdeveloped countr*" OR "underdeveloped nation*" OR "underdeveloped population*" OR "underdeveloped world*" OR "middle income countr*" OR "middle income nation*" OR "middle income population*" OR "low income countr*" OR "low income nation*" OR "low income population*" OR "lower income countr*" OR "lower income nation*" OR "lower income population*" OR "underserved countr*" OR "underserved nation*" OR "underserved population*" OR "underserved world*" OR "under served countr*" OR "under served nation*" OR "under served population*" OR "under served world*" OR "deprived countr*" OR "deprived nation*" OR "deprived population*" OR "deprived world*" OR "poor countr*" OR "poor nation*" OR "poor population*" OR "poor world*" OR "poorer countr*" OR "poorer nation*" OR "poorer population*" OR "poorer world*" OR "developing economy*" OR "less developed economy*" OR "lesser developed economy*" OR "under developed econom*" OR "underdeveloped economy*" OR "middle income econom*" OR "low income econom*" OR "lower income econom*" OR "low* gdp" OR "low* gnp" OR "low* gross domestic" OR "low* gross national" OR lmic* "third world*" OR "lami countr*" OR "transitional countr*"
Quality of care (S4)	“health care quality” OR “healthcare quality” OR “quality of healthcare” OR “quality of health care” OR “patient satisfaction” OR “standard of care” OR “health care quality indicators” OR “*respect*” OR “quality of care” OR “patient cent*ed care*”
Search strategy	(S1 OR S2) AND S3 AND S4

Eligibility Criteria

As with other systematic reviews about policy issues surrounding the delivery, organization and financing of health care,²⁶ there was difficulty in the problem formulation stage and in forming the inclusion and exclusion criteria for selecting studies given the nature of the research question we had selected. Table 2 lists the final inclusion and exclusion criteria.

Table 2. Inclusion and exclusion criteria

Inclusion criteria

1. Antenatal care, perinatal and delivery care
 2. Maternal health services in rural areas
 3. Studies published in English
 4. Interviews with health care workers, women regarding quality of care
 5. Qualitative and quantitative methodology
 6. Published after 1990
-

Exclusion criteria

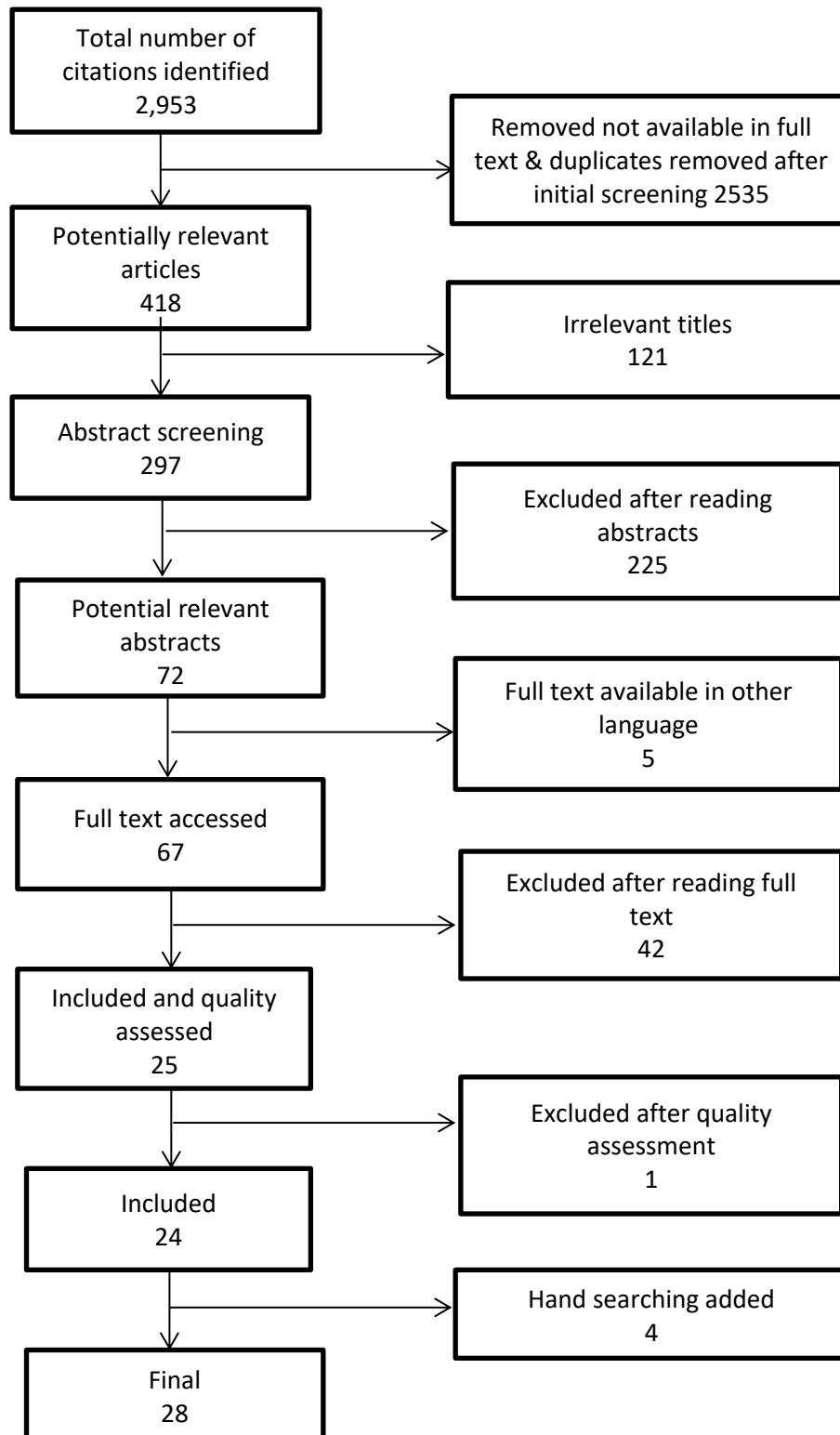
1. Training and evaluation programme
 2. Quality of care in large maternity/private hospitals
 3. Quality of care in emergency obstetric and neonatal care
 4. Determinants of use of health facilities
 5. Financial schemes for increasing facility based delivery
 6. Traditional birth attendant
 7. Opinion/experience papers
 8. Family planning issues
 9. Prenatal and postnatal care
 10. Systematic or literature review papers
-

Study Selection

An initial search found 2,953 articles; only those with full text available were selected and duplicates were removed (Fig. 1). Of 67 articles with full text 42 were excluded from our review because they were mostly hospital-based studies, discussing overall maternity services rather than labour and birthing services, and discussing emergency obstetric care rather than basic obstetric care. Of the remaining 25 articles, one was excluded after quality assessment because of its poor methodological design. This left 24 articles that were hand searched, resulting in another four studies that were relevant to the review and were of acceptable quality.

The final selection of 28 articles was done by the first two authors and any disagreement in the selection of articles was resolved through discussion. In case of further disagreement, opinions of others were sought.

Figure 1. Flow diagram for selection of articles for inclusion in the systematic review



Data extraction

A data extraction form was developed by the authors, which was adapted from a standard format and revised to meet the needs of this review. The data extraction was conducted by the first author, which was then reviewed by other authors for consistency. Any disagreement was resolved through discussion among the authors. Ethical approval was provided by Bournemouth University (Reference Id- 8710).

Results

There were 28 studies in total which were selected for the purpose of the systematic review (See Table 3). Most studies were from Africa²⁰, followed by South Asia³, other Asian countries³ and Latin America.² Half of the 28 studies (n=14) were quantitative surveys or cohort studies, seven were qualitative, four were experimental and three used mixed methods. Ethical approval had been obtained for 17 studies, whereas 10 did not mention ethical approval. Looking at the place of study, the majority were conducted in rural areas (n=20), three were conducted in urban settings and five were in sub-urban or a mixture of both urban and rural locations. Although all studies included normal births, the health facilities where the studies were conducted varied considerably. Most sites were health centres followed by birthing centres or peripheral delivery units, primary health care centres, communal health clinics, dispensaries and one hospital with BEmONC services. Table 3 summarizes the selected studies in more detail.

Table 3: Characteristics of the studies selected for review

Reference	Methodological approach	Country of study	Study setting	Health facility setting	Study sample (relevant to study)
Philibert et al. 2014	Quasi experimental with intervention and control group	Burkina-Faso	Rural	Health and social promotion centres (Primary health care centres)	Women who delivered at health and social promotion centres (569 intervention & 301 control group)
Phiri et al. 2014	Qualitative, (interviews)	Zambia	Rural	20 public health facilities	5 women with previous home birth, 5 husbands previous home births, 5 community leaders, 5 TBAs and 5 health providers

Referenc e	Methodological approach	Country of study	Study setting	Health facility setting	Study sample (relevant to study)
Kruk et al. 2009	Cross-sectional survey, (questionnaire)	Tanzania	Rural	Health centres or government dispensaries	1205 women who completed questionnaire
Graner et al. 2010	Qualitative, (focus group discussions)	Vietnam	Rural	Communal health stations	Twenty one midwives
Karkee et al. 2015	Prospective cohort study	Nepal		Birth centre	353 women whose nearest from residence was birth centre
Mainbolwa et al. 1997	Descriptive survey study, (observation)	Zambia	Urban + rural	Health centres and hospitals	30 deliveries urban health centres and 24 government and mission hospitals in Southern Province
Kumbani et al. 2013	Qualitative, (face to face in-depth interviews)	Southern Malawi	Rural	Catchment area of Namadzi health centre	12 women who had delivered at home
King et al. 2015	Qualitative, (questionnaires, interviews and focus group discussion)	Ethiopia	Urban + rural	Health posts	14 health extension workers, 33 women from community and 8 other health care workers
Walker et al. 2013	Cluster randomized trial, (medical charts, interviews)	Mexico	Rural	Primary care health centre	12 intervention & 15 control sites, midwives and obstetric nurses, women who delivered at health centre
Asefa and Bekele 2015	Quantitative, cross-sectional, (interviewer administered questionnaire)	Ethiopia	Urban	3 catchment health centre	93 women enrolled at 3 catchment health centres
Larson et al. 2014	Cross-sectional, (questionnaire based survey)	Tanzania	Rural	24 dispensaries and served villages	855 women who delivered at study facilities
Tucker et al. 2013	Mixed method (in-depth interview, focus group discussion, structured interviews)	Mexico	Urban + rural	Birthing house – Casa Materna adjacent to a hospital	7 TBAs, 3 women from community and 11 health personnel
Kruk et al. 2014	Cross-sectional survey, (structured interview)	Tanzania	Rural	24 primary care clinics	3019 women interviewed
Mezie-Okoye et al. 2012	Cross-sectional facility based survey (semi structured questionnaire)	Nigeria	Rural	10 primary health centre	Heads of health facilities

Reference	Methodological approach	Country of study	Study setting	Health facility setting	Study sample (relevant to study)
Karkee et al. 2014	Prospective cohort study	Nepal	Rural	Birth centre	547 postpartum women with 5 months or more gestation
Kambala et al. 2011	Qualitative (focus group discussion)	Malawi	Rural	Catchment area of 3 health centre	140 respondents including community leaders, men, women, boys and girls
Nikiema et al. 2010	Cross-sectional quantitative (observation and semi-structured questionnaire)	Burkina Faso	Rural	24 primary healthcare facilities	Assessment of 22 primary healthcare facilities and observation of 81 antenatal consultations
Leigh et al. 2008	Mixed method (review of facility registers, observations and interview)	Malawi	Rural	94 health centres	25% (94) of Malawi's 374 health centres
Patterson 2004	Qualitative (descriptive and explorative)	Angola	Urban	Peripheral delivery units	11 midwives and 48 women in community
Kruk et al. 2009	Discrete choice experiment	Tanzania	Rural	-----	1205 participated in full survey & 1203 completed module
Therese et al. 2002	Cross-sectional quantitative (observation checklist and semi-structured questionnaire)	Cote d'Ivoire	Urban	3 health centres	129 deliveries
Worku et al. 2013	Cross-sectional facility and population based survey	Ethiopia	Rural	12 health centres	538 women eligible for antenatal care and 231 women eligible for delivery care
Mackeith et al. 2003	Community based survey (questionnaire)	Zambia	Urban	Health centres	1210 women who were pregnant in previous two calendar years
Afsana et al. 2001	Qualitative (indepth interview, participant observation, focus group discussions and informal discussion)	Bangladesh	Rural	1 health centres	15 women who had delivered at health centre, 5 women who gave birth at home informal discussion with 4 physician and 7 other female paramedics
Duong et al. 2004	Mixed methods (questionnaire, focus group discussion and in-depth interview)	Vietnam	Rural	Communal health centre	85 women who delivered at communal health centre and 98 who delivered at home. FGDs with women, mother-in-laws and husbands, in-depth interviews with public and private

Reference	Methodological approach	Country of study	Study setting	Health facility setting	Study sample (relevant to study)
Parkhurst et al. 2003	Cross-sectional quantitative	Uganda	Rural	Health centres	providers, TBAs and women union activists 13 health centres – III and 2 health centre – IV
Kruk et al. 2010	Discrete choice experiment	Ethiopia	Rural	-----	1006 women living in rural areas who had delivered in past 5 years
Gyaltzen et al. 2014	Mixed method (survey and focus group discussion)	Tibet (China)	Rural	Birth centre	114 women who gave birth at birth centre and 108 women in same community who had not delivered at birth centre

The majority of the studies measured perception and experiences of women, health providers and other concerned members of society, whereas others measured satisfaction with the services. Direct observation of normal deliveries, measuring facility attributes, observing the level of disrespect and abuse, measuring perceived quality of care and knowledge of birth care were other methods used to assess quality. Because there was a range of outcomes measured in the studies, it was difficult to synthesize the data. Hence thematic analysis was used to focus on the main concepts related to quality of care and are classified under the following headings:

1. Lack of equipment and drugs at health facility: Quality of care affected by the lack of availability of necessary equipment at the facility, lack of drugs or important procedures available at facilities was mentioned by 18 studies.²⁷⁻⁴³ The lack of resources included gloves, sutures, sterilizers, water, electricity or even toilet facilities or a preference for availability of such resources at health facilities. For example, one midwife said, *“I lack proper instruments for suturing. I’m only able to suture the exterior. In the interior ruptures, I can do nothing. I can diagnose interior ruptures but I have to ignore it because I don’t have essential instruments for suturing”* – (Midwife)²⁹

Some studies also revealed that health facilities asked mothers to bring their own amenities such as a shawl, boots, gloves, antiseptics, delivery kits etc (27, 31, 36) and failure to do so resulted in reprimands from midwives or the attending health personnel. One woman from the community said, *“...sometimes it is because we don’t manage to buy what we are asked to buy at the facility. ... bucket, new nappies and others, so you decide to die at home.*

You take a chance.... And if you go without these items, you are scared to be shouted at... ”²⁷

However, the results of one study showed that having clean water or essential equipment, drugs and supplies were not associated with higher ratings of quality of care.⁴⁴

2. Availability of trained staff at health facility: The decision to deliver at a health facility being determined by the availability of technically competent health providers was mentioned in several studies.^{28, 29, 31-34, 36, 40, 41, 45-47} The lack of trained staff available at the health facility was not only a problem in rural facilities but also in some urban health facilities.^{31, 32, 46} For instance, one health extension worker commented, *“They face other problems when they get to the health services – no water, no electricity, no midwife or resources”³²*

Some studies also indicated that health facilities are not open 24 hours which discourages women from attending for delivery services.^{28, 36, 48} Three studies^{29, 40, 49} described how the health professionals, especially midwives at the birthing centre or primary health centre, were found to be working under physical and mental constraints: they worked alone, had long working hours, low collegial support and mistrust in their capabilities. There was also a hierarchical relationship between midwives and women which discouraged women to open up and tell everything without feeling intimidated.^{29, 40, 49} The need for education and training of health professionals was stressed in four studies.^{29, 31, 49, 50}

3. Socio-economic factors: Socio-economic factors were mostly prevalent in the African studies and some Asian studies. Adverse socio-economic status led to decreased utilisation of the BEmONC services even when they were freely available. Apart from paying direct costs, there were hidden costs or informal charges linked with facility delivery^{27, 31, 39-41, 48, 49}. The hidden costs were costs of buying gloves and antiseptics, cord clamps, baby clothes, pads, and fees for attendants. Financial problems were indicated as one of the major factors for not attending health facilities for birth.^{29, 32, 37, 41, 42, 49} Other studies indicated households with greater wealth bypassed the nearest health or birth centre to give birth at hospital which was considered better quality.^{30, 41} One of the participants in a focus group said, *“Sometimes I think for the money, for this we stay in the house with the TBAs and we stay closer as well. Because our mother-in-law also gave birth here, for this reason we stay in the house”⁴⁶*

Women's vulnerable position in society and family disempowered them to make their own decision about giving birth at the nearest health facility.^{32, 40, 41, 49, 51} Domestic workloads,

mother/father-in-law's decision to give birth at home, and dependence on men were some factors associated with giving birth at home. For example, one community participant said, *"The culture gives to the man, everything is decided by his understanding and beliefs, she follows his decisions... The decision maker is only the husband, the female cannot participate in decision making"* - (Community interview)³²

Having free maternity services was seen as an enabling factor to access health facilities for childbirth.³² However, a matched cohort study in Burkino Faso which attempted to determine the effect of user fee exemption on perceived quality of care of post-partum women, found no effect on perceived quality of care due to total fee exemption for delivery care.⁵²

4. Attitude and behaviour of service providers: Several studies^{27, 28, 34, 36, 39, 42, 49, 53, 54} reported issues with attitudes and behaviours of health providers such as receiving poor care, lack of prompt attention, delay in receiving care and support, left unattended and treated badly, etc. A number of studies reported either no effect or a positive effect of respectful attitudes of service providers in deciding to attend BEmONC facilities.^{30, 32, 40, 46, 47} Some participants expressed they were treated well and were shown a caring attitude.

Disrespect and abuse from health professionals was reported in seven studies^{27, 39, 41, 44, 49, 53, 55} in the form of being shouted at or scolded, ill treatment, physical harm, beatings, lack of respect or treated rudely during labour. Receiving disrespectful and abusive care was found to affect the quality ratings of health facility as shown by Larson and colleagues.⁴⁴ One study reported women being treated well at the health facility.⁴⁶ One female interviewee explained how she was abused in health facility as:

I asked if you are doing this when labor started and I come. How is it going to be? I will be the same, shouting at us? That day you will even beat us then? She said, yes if a person is troublesome, we beat her. We are very annoyed with some who exaggerate and cry when giving birth.⁵

5. Perceived quality of care: Perception of quality of care of the services available at the BEmONC facilities affected the utilisation of services at the health facility. Several studies^{28, 35, 43, 47, 48} indicated that when perceived quality of care at the BEmONC facilities and midwife-led facilities was less than very good, women chose to go to another health facility. Other studies^{32, 41, 45} commented positively on the perceived quality of care available at the health facilities. Perceived quality of care was expressed in many different forms by various studies.

Some of these factors which defined perceived quality of care at the health facility are explained below.

Emotional support during delivery was identified by some studies.^{38,40} Having a family member or even maternity staff during delivery was expected by women as a form of support.^{38, 40, 51, 54} One study's results showed the participants preferred family rather than hospital staff during birth.³⁹

Satisfaction with the quality of birth services available at the BEmONC facilities was assessed by three studies.^{41, 51, 52} The studies found the level of satisfaction provided at the facility was high and this was attributed to flexibility offered by the facilities in birthing practices, choice of birth, the presence of family members during childbirth and patient-provider interaction. It was also seen in one study⁵² that the satisfaction index was higher for the poorest patients compared to the wealthiest. The proportion of very dissatisfied women was as high as 27% for the wealthiest women for three indicators: care provider-patient interactions, nursing care and birth environment, whereas the proportion of very satisfied women was as high as 48% for the poorest women for nursing care and birth environment.

Some studies measured trust in health providers and facilities.^{27,28} Women tend to use the BEmONC facilities if they have high trust in health providers and their qualifications. Similarly, users tend to recommend a health facility or receive a recommendation from friends or relatives when there is trust in the facilities and the providers.²⁸ Providing more services during labour and birth was seen by participants as an indication of a high-quality facility.⁴⁴

6. Access to health facility: Long distance was considered a hindrance to the health facility for childbirth.^{27, 32, 34} Women also feared giving birth in transit to the health facility.^{27, 53} Access to the health facility was seen as a problem not only in rural areas but also in urban settings.³² However, there were studies reporting bypassing the nearest primary care facility to give birth at a hospital or a better health facility due to low perceived quality in the nearest facility.^{30, 43, 48} Two studies however showed there was no effect of distance on ratings of quality of a primary health care facility.^{41, 44} One midwife commented about the long distance to health facility:

Though we have got this "Zamup" ambulance (bicycle ambulance), somebody is in labour and stays very far, maybe 25 kilometers away. The husband comes here, he collects the ambulance, and by the time he

reaches the village, maybe he will find she has already delivered. So, long distances – (Midwife)²⁷

The result of one study showed that availability of a free ambulance was a facilitator to use health facility with SBA.³² However, there were several studies which reported the lack of transportation as a barrier to attending a health facility for childbirth.^{27, 29, 42, 53} The need for a good referral facility was mentioned in several studies.^{29, 36}

7. Maintaining privacy and confidentiality: One study²⁷ mentioned that health providers maintained privacy and confidentiality during childbirth at the health facility whereas five studies^{31, 34, 38, 40, 55} mentioned a lack of or unsatisfactory practices for maintaining privacy and confidentiality, e.g. by exposing women during childbirth, leaving them naked or leaving them to deliver under a tree. One women who came to a health facility for birth said:

In the labour room, the sisters removed my petticoat from the bottom. As I was trying to cover my private parts, they said that we were all women and there was nothing to feel shy about there. They asked “Would you feel shy in front of us?” - (Women at health facility)⁴⁰

The issue of maintaining privacy and confidentiality was observed mostly among the African countries and from one study in Bangladesh.

8. Communication: There were five studies^{27,31,40,54,55} reporting a lack of communication which acted as a barrier to attending the facility. The issues reported were: getting inadequate information from providers, communication intensified during second stage of birth, right to information and informed consent not protected, lack of information about progress of labour, being absorbed with clinical aspects of birth, etc. There was one study²⁹ which reported lack of communication from patients such as hiding their obstetrical history which made childbirth difficult.

9. Cultural and traditional values: A number of studies mentioned the preference for cultural and traditional practices as barriers to attending health facilities.^{27, 40, 46, 49} Lack of acceptance by the indigenous population, endurance during childbirth, belief that strong women do not seek institutional care, belief that being treated at health facility meant being sick and having a defective body were some reasons for not attending health facilities for birth. Some studies showed those facilities which supported cultural or religious practices tended to attract more women for childbirth.^{35,51} It was seen that adherence to the cultural and traditional

values was valued in communities and among those who attended health facilities in both urban and rural areas.

Discussion

Several factors were identified in the 28 selected studies which affect the quality of care of BEmONC facilities and midwife-led facilities in LMICs. These factors varied according to the country where the study was conducted, whether the study site was rural or urban, and the study participants. The factors are divided into facility level determinants and factors affecting access to care based on whether the factor was a characteristic of the birthing facility or arose from another source. The facility-level determinants were Phase III delays as identified by Thaddeus and Maine⁵⁶ i.e. delays related to receiving adequate care at the facility and thus affect the provision and utilisation of high quality obstetric care. In contrast, the non-facility level determinants were those related to Phase I delays (deciding to seek care) and Phase II delays (reaching an adequate health facility). These Phase I and II delays include various factors related to access to care which indirectly affect quality and utilisation of a health facility. The results of this review show there are several studies about Phase III delays but fewer that focus on Phase I and Phase II delays. It is important to explore the cause of this difference.

Facility level determinants of quality of care

Availability of equipment and drugs was a major factor identified in a majority of studies which affected the quality of care of health facilities and ultimately the decisions of women and their families to attend such facilities. The quality of health facilities providing maternal and neonatal care has been shown to be affected by a lack of required equipment and drugs as demonstrated by similar studies conducted in past.²²

Most of the remaining studies that did not mention availability of equipment and drugs as a factor affecting quality of care were located in urban areas or had a midwife as the attending health professional. Midwives play a crucial role in establishing a link between the natural and technical dimensions of birth. They develop close relationships with women and help establish a trusting attitude toward other health professionals.⁵⁷ The presence of a midwife during labour and childbirth was viewed positively when that presence brought calmness, trust and safety to labouring women.⁵⁸ Childbirth care provided in midwifery-led birthing centres was found to be positive and as effective as consultant led care in studies not only in LMICs^{59, 60} but also in high income countries like the United States of America.⁶¹

In health facilities where there was a lack of trained staff for childbirth care and/or where midwives were seen to be working under pressure there was less time spent with each woman leading sometimes to a lack of proper care. The resulting low quality of services available at such facilities was seen in similar studies.^{22, 62}

Similarly, the attitudes and behaviour of health care providers also had a high impact on the quality of childbirth services. Women value how they are treated when they attend a health facility and do not like being treated rudely and shouted at.⁶³ Disrespect and abuse was reported by numerous studies in this review which affected ratings of quality of care. Similar findings have been found in other studies from low-income countries.^{64,65} Disrespect and abuse seen in the health system indicates a crisis of quality and accountability in the health system. Health systems that tolerate disrespect and abuse devalue women and contribute to the slow progress in reducing maternal mortality.⁶⁶ It is important to note that poor quality working conditions and lack of a caring environment experienced by care providers greatly influence the low quality of services provided.⁶⁷

In addition to the many barriers to quality of care that were identified, there were a few facilitating factors thought to be helpful in attracting women to BEmONC facilities. When there was provision of emotional support, especially when family members were included, when others expressed satisfaction with care they received and when there was trust in health providers the quality of care was higher. Other studies have also reported that continuous support to women during labour and childbirth especially by family members was more likely to result in a shorter labour, spontaneous vaginal birth, reduced use of intrapartum analgesia and a more positive childbirth experience.^{68,69}

Factors affecting access to care

Besides the facility level determinants there were other factors identified by this review which were classified under access to care determinants. A lower socio-economic status was a major barrier to utilising the birthing facilities in LMICs in our study. Other research confirms the existence of income inequality as a determinant of childbirth care that requires concerted new equity-oriented policies accompanied by further research to address this problem.⁷⁰ Increasing the number of SBAs and their distribution among poor rural populations needs to be an area of focus.^{23, 70}

Women's position in society also plays a major role in determining their decision-making power related to pregnancy and childbirth. Similar to other studies.^{71,72} Our review found that women often had limited power to make decisions related to maternity care; their husband or other family members decided where birth would occur. Existing research shows that when women have a greater role in household decision-making, there is a higher level of institutional birth.^{21,72} One way of empowering and increasing women's roles in household decision-making is by increasing their educational status. Research has shown that women with higher educational status utilise facility delivery services more than their counterparts.^{71,72}

As reported in other studies^{21,71} cultural and traditional factors were important in determining the uptake of delivery services by the family. For both urban and rural study sites, cultural and traditional values were important when choosing the location of birth. Studies have shown that women often prefer home birth with traditional birth attendants because of their cultural values and the ability to maintain autonomy and receive supportive attendance while giving birth.^{21,65} Efforts to provide culturally appropriate, high quality care from qualified health personnel at birthing facilities could help increase the number of women seeking a facility-based delivery.⁷¹

Having access to birthing facilities is also an important factor in their utilisation. The high urban-rural difference in maternal mortality could be addressed by improving access of rural populations to high quality services.⁷³ Researchers have stressed the importance of improving access to maternity services in order to make delivery safer.⁷⁴

The findings of this systematic review suggest that facility level determinants are only part of the overall set of influences on quality of care in birthing centres. Factors that affect access to care must also be considered since they are barriers to utilisation of the available services. Our findings support the conceptual framework of three phases of delay as outlined by Thaddeus and Maine. A well- equipped and well-staffed health facility may still have a low quality of care because it is difficult to access, or the care is culturally insensitive or it requires private payment. Phase I delays do indeed affect utilisation and therefore quality of care. An important point to note is that the determinants of quality of care in BEmONC and midwife led facilities also applies to CEmONC facilities. Researchers have shown that shortages of personnel and supplies affect the quality of both BEmONC and CEmONC facilities.⁷⁵ A lack of transportation was a barrier also at all levels of facilities.⁷⁶ One study found that improving the quality of services offered by both BEmONC and CEmONC facilities required having new

staffing models, a well performing and motivated workforce who provided interpersonal care, social support and, cultural safety.⁷⁷ This study also found that social support and specialised midwifery care throughout pregnancy, labour and the postnatal period provided reduced medical interventions during labour and resulted in a shorter length of stay.

The strength of this systematic review is that it combines results from qualitative, quantitative as well as mixed method studies. There are limitations of this review which need to be noted. First, we excluded studies in a language other than English and other unpublished literature, which may mean important findings were missed. Secondly, although there were a few studies that included both primary and secondary-level birthing facilities as study sites, we included results only from primary level birthing facilities. There is a possibility that we have included findings that applied to both levels of facilities. We acknowledge there were difficulties in the data synthesis process because of the variability in study design and types of outcomes making it difficult to organise the results.

Conclusion

Due to the persistence of a high numbers of maternal deaths in LMICs, especially in sub-Saharan Africa and Southern Asia, several strategies have been developed to address this problem, including attendance at every birth by a SBA and directing every woman to receive care in a BEmONC or CEmONC facility. However poor quality maternal care continues to remain a major contributor to maternal deaths worldwide and especially in LMICs. This systematic review examined factors affecting quality of care in BEmONC and midwife-led facilities in LMICs. Two categories of factors emerged: facility-based factors and access to care factors. The facility level factors were directly related to the services and providers. We further identified facilitators and barriers within this category. Within the category of factors affecting access to care were broad social-cultural and environmental issues that affect quality of care. Often the focus of quality improvement is on facility-level factors; however improved service utilisation at BEmONC and midwife-led facilities depends greatly on addressing factors that influence access to care.

Consent for Publication

Not applicable

Competing interests

The authors declare that they have no competing interests.

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