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Systematic review of women's perceptions of skilled maternity care in low- and middle-income countries

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TABLE DES MATIERES

LISTE DES ABRÉVIATIONS ET SIGLES

SDG	Sustainable Development Goals
MDG	Millennium Development Goals
MMR	Maternal mortality ratio
CI	Confidence interval
LIMC	Low-and middle-income countries
GDP	Gross Domestic Product
GNI	Gross National Income
GNP	Gross National Product
HIV/AIDS	Human Immunodeficiency virus / Acquired Immune Deficiency Syndrom
WHO	World Health Organization
PDF	Text format or “Portable Document Format »
SBA	Skilled Birth Attendance
TBA	Traditional Birth Attendance
MMAT	Mixed Method Appraisal Tool

SUMMARY

Maternal mortality is one of the indicators of the health of a population and the development of a country. Worldwide, nearly 830 women die every day from complications related to pregnancy and childbirth. There is a disparity in maternal deaths between regions of the world and between countries levels of economic development. The maternal mortality rate is 14 times higher in developing countries than in developed countries. Moreover, the countries affected by these maternal deaths are those where there is the most inequality in access to maternal health care. Because of the importance of the maternal health challenge, strategic efforts are set out in MDG 3 (the maternal health domain) to ensure that maternal health is addressed.

The objective of this study is to identify the barriers inherent in the perception of the quality of maternal care from the point of view of the patient and/or her close circle, and which are at the origin of the difficulties in accessing qualified obstetric care.

The research methodology is based on a systematic review of the existing literature on the perception of skilled maternity care by women and their close circle in LMICs. Out of 1247 documents identified through a search equation, we selected 18 articles to meet these objectives, after three levels of selection and rigorously following the different steps of conducting systematic reviews.

In total, we have 15 qualitative studies, 2 cross-sectional studies and 1 mixed study. The tool used to assess the risk of bias of the selected articles was the MMAT tool. The MMAT allowed us to identify low levels of risk of bias, thus raising the quality of the conclusions to be drawn from our research. Using this methodology, we identified 26 barriers that represent the perceptions of women and their husbands or partners regarding skilled maternity care in LMIC's. The main barriers cited were: lack of privacy and confidentiality; unavailability of care supplies (drugs, materials); lack or inadequacy of health personnel; perception of verbal or physical abuse; perception of abandonment, neglect, retaliation; vulnerability in another environment; perception of a negative attitude from the midwife; perception of limited technical skills of midwives; and lack of health literacy. However, further research is needed to adapt women's perceptions to local realities.

Key words: perception, barriers, skilled birth attendance, LMIC

I. INTRODUCTION

1. Maternal mortality

Maternal mortality is one of the indicators of the health of a population and the development of a country. It is an "individual tragedy" that affects the family first and foremost, and society as a whole (macro level). Furthermore, maternal deaths create complications that go far beyond the health aspect. From a micro level, the study of Miller S. and al. shows that the impacts of maternal death in the long term result in infant mortality, loss of economic opportunities, and the entrapment of families and their communities in spirals of poverty [1]. The study of Ye and al. assessed the immediate economic impact of maternal deaths on rural Chinese households. It showed that the median economic burden of the direct (and unreimbursed) costs of maternal death was high, amounting to -37.0% of annual household income [2]. In other words, bereaved families in rural areas suffer not only economic losses but also debts due to the loss of a mother. From a macro perspective, intergenerational and multi-sectoral disruptions are observed: sociological (the family is disrupted when the mother dies), educational (children's schooling is disrupted), and economic (economic repercussions are observed in countries with a high prevalence of maternal mortality, going beyond the micro limits of this drama) [1]. A maternal death cannot be confined to a household, and the consequences for society are visible on a larger scale.

Reducing maternal mortality and ensuring equitable access to specialized health care services is goal 3 of the Sustainable Development Goals. Specifically, it is to "reduce the global maternal mortality ratio to less than 70 deaths per 100,000 live births by 2030, with no country having a maternal mortality ratio more than twice the global average" [3].

2. Maternal mortality data from around the world

Worldwide, nearly 830 women die every day from complications related to pregnancy and childbirth. Overall maternal mortality has fallen from 532,000 deaths in 1990 to 303,000 in 2015 [4]. The global maternal mortality ratio (MMR) is estimated to have been 385 deaths per 100,000 live births in 1990, decreasing to 216 deaths per 100,000 live births in 2015. This is due to countries' efforts to meet the Millennium Development Goals (by 2015).

There has been a disparity in maternal deaths across regions of the world and across countries' levels of economic development. The region with the highest ratio of maternal death decline is East Asia, and the region with the lowest ratio of maternal death decline is the Caribbean region. 99% of maternal deaths occur in developing countries in sub-Saharan Africa and Asia [5]. In terms of comparison between developed and developing countries, the maternal mortality ratio

is 14 times higher in developing countries than in developed countries [3]. The maternal mortality ratio (MMR) is 12 deaths per 100,000 live births, and 239 maternal deaths respectively. The sub-Saharan region has an MMR of 546 deaths per 100,000 live births. The same is true for the risk of maternal death. Indeed, the risk of maternal death constitutes 1/4900 births in developed countries, and 1/180 births in developing countries [5].

Because of the importance of the maternal health challenge, strategic efforts are set out in MDG 3 to ensure continuity in this area.

In addition, the countries affected by these maternal deaths are those where there is the most inequality in access to maternal health care [5]. The main types of inequality in access to skilled maternal health care around the world are different for low- and high-income countries. Indeed, high-income countries have ensured access to skilled care for mothers. The example given is that of antenatal care, which has been made available at the rate of 4 antenatal visits for all mothers. While low-income countries (such as sub-Saharan countries, or South Asian countries) have not acquired this capacity. In addition, there are multiple causes of non-access to skilled maternity care, both in terms of the demand for care and the lack of or insufficient supply of care [5]. Causes of non-access include household poverty (which makes it impossible to seek skilled care for the mother), women living in rural areas have a lack of access due to long distances to health facilities, lack of available and accessible transport. Lack of literacy in the woman or her partner regarding skilled health care makes it difficult to acquire information about the importance of maternal health care or other dimensions of managing this information. Inadequate services create inequalities in access to skilled maternity care, as high-value care is not available. Cultural practices create inequalities in access to skilled maternity care. Indeed, cultural practices prevent the use of skilled care even when it is available, and lead to maternal deaths.

Variations can also be observed between countries in the same administrative region in terms of MMR, which is related to the management of the data that was taken into account. Indeed, the classification of countries into "administrative regions" and development status is based on the criteria of the Millennium Development Goals (MDG) [4].

The causes of death worldwide are objectified in a systematic review in 2014 by Say and al. In a set of 115 countries with a total of 60,799 deaths, Say and al. analyzed 417 data sets. 73% of all maternal deaths were due to direct obstetric causes and 27.5% were due to indirect causes. The causes of maternal deaths related to its direct situation were hemorrhage accounting for 27.1% (661,000; CI 19.9-36.2%) of maternal deaths, hypertensive disorders accounting for 14.0% (343,000 ; CI 11.1-17.4%), sepsis accounting for 10.7% (261,000; CI 5.9-18.6%) of

maternal deaths, abortion accounting for 7.9% (193,000; CI 4.7-13.2%) of maternal deaths, embolism accounting for 3.2% (78,000; 1.8-5.5%) of maternal deaths, and all other direct causes of death accounting for 9.6% (235,000; 6.5-14.3%) of maternal deaths [6].

3. The Low and Middle Income Countries (LMIC's)

The classification of countries according to income and administrative regions is carried out by the World Bank for analytical purposes [7].

Previously, countries were classified on the basis of Gross Domestic Product (GDP). Since 2020-2021, a new indicator has been used by the World Bank: Gross National Income (GNI). It is calculated on the basis of gross national income in US dollars per capita and divided by the mid-year population. The World Bank Atlas method is applied to smooth out exchange rate fluctuations [7]. GNI estimates are obtained from economists in the World Bank's country units. GNI is used to classify countries' economies into four income groups: low economy, lower middle economy, upper middle economy and high economy [8]. For the identification of countries according to the administrative regions of the world, we used a country search on the World Bank website [9]. The updated country classification based on GNI is reviewed on the World Bank website [7].

4. The Sustainable Development Goals (SDG's)

Historically, world leaders adopted the Millennium Development Declaration in 2000. The Declaration calls on nations to commit to a global partnership to reduce extreme poverty, and sets eight goals, all with a common deadline of 2015. There are eight Millennium Development Goals. They are to eradicate extreme poverty and hunger, achieve universal primary education, promote gender equality and empower women. The fourth and fifth goals concern the mother, reducing child mortality and improving maternal health. The remaining goals concern the fight against HIV/AIDS, malaria and other diseases, the preservation of the environment and the development of a global partnership for development [10].

The Sustainable Development Goals (SDGs) were adopted at the 70th General Assembly of the United Nations in New York. They comprise 17 goals and almost 169 targets to be achieved by 2030. The SDGs are a continuation of the Millennium Development Goals (MDGs) of 2000, which were to be achieved by 2015. The MDGs "allowed for a recovery in aid volumes throughout the 2000s". They have been "a success in terms of re-mobilizing the views of policy makers in favor of development" [11].

Overall, the SDGs are universal in scope (they concern all developed and emerging countries), with more ambitious goals (compared to the 2000 MDGs), clearly defined, based on a unifying concept (the comprehensiveness of the concepts involved, i.e. the 5Ps: People, Planet, Prosperity, Peace, Partnership). The dimensions of sustainable development, which refer to economic, social, environmental and governance issues, were integrated into the SDGs unlike the MDGs, hence the high number of 169 targets [11]. The SDGs are about humanity in general, as humanity has to take responsibility for its survival and development by meeting aspirational, but non-binding, criteria. Developed countries have committed themselves within the framework of the United Nations to help poor countries achieve the MDGs, and at the same time to achieve these goals themselves. Emerging countries, on the other hand, must maintain their development efforts with continued pressure from the aid relationship [11]. Each country's governance is free to prioritize certain goals over others, identifying their own weaknesses in relation to their reality.

The health-related MDG 3 is to "empower people to lead healthy lives and promote well-being for all at all ages". Additional goals of "reducing alcohol consumption, drugs, health insurance and toxic pollution" have been added compared to the 2000 MDGs [11]. MDG 3 covers several health-related areas such as maternal health, child health, HIV/AIDS, malaria and other communicable diseases, control of psychoactive substances (such as alcohol), road traffic injuries, promotion of sexual and reproductive health. It is also about preventing environmental risks by combating air, water and soil contamination, combating tobacco use (through the World Health Organization's Framework Convention), supporting research and development of vaccines and medicines in developing countries, promoting the establishment and training of health workers in developing countries, and strengthening national and global health risk reduction and risk management [3].

5. Is the lack of access to skilled obstetric care a demand or a supply issue ?

Pregnancy and childbirth require prompt and effective management by health care providers (gynecologists, obstetricians, midwives) and health care facilities equipped for this purpose. However, when pregnancy is not monitored through scheduled, comprehensive and efficient antenatal care, childbirth becomes a tragic moment.

The causes of maternal deaths are attributed to a lack of care in specialized health care facilities for mothers, and a lack of access to these facilities. Understanding the high numbers of maternal deaths means identifying the shortcomings in care and access to health care, which are a real health challenge. Are these deaths due to a lack of access to care caused by factors relating to

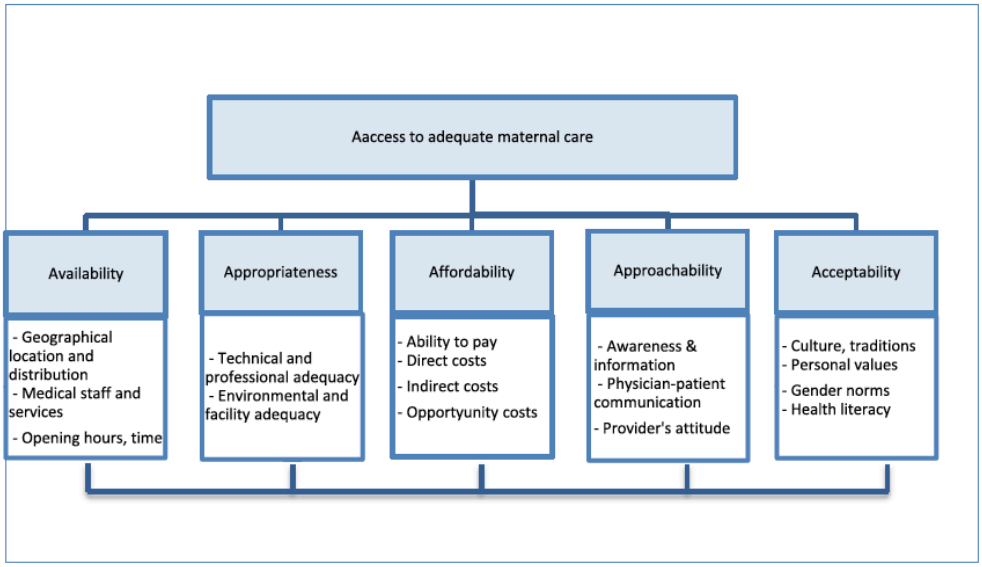
health services (the supply side of health care), or a lack of access to care caused by mothers and their families (the demand side)?

Supply-side factors include health facilities far from homes, high costs of service care, health facilities not adapted to the care of vulnerable women (e.g. disability), etc. Factors specific to women and their families include cognitive barriers (related to health literacy, perceived low quality of health care, fear of caesarean section, fear of HIV testing, etc.), psychological barriers (e.g. lack of access to health care, lack of access to health care services, lack of access to health care services, etc.), and other barriers (e.g. lack of access to health care services).), psychological barriers (perception of verbal and physical abuse by midwives, non-consensual care, perception of abandonment or neglect by midwives, etc.), socio-cultural barriers (e.g. decision making by husbands) and finally the religious barrier.

This is a first sketch of the barriers to access to qualified obstetric care. In addition, there are a multitude of classifications that make it possible to show the explanatory mechanisms of these barriers, and we will present the most exhaustive.

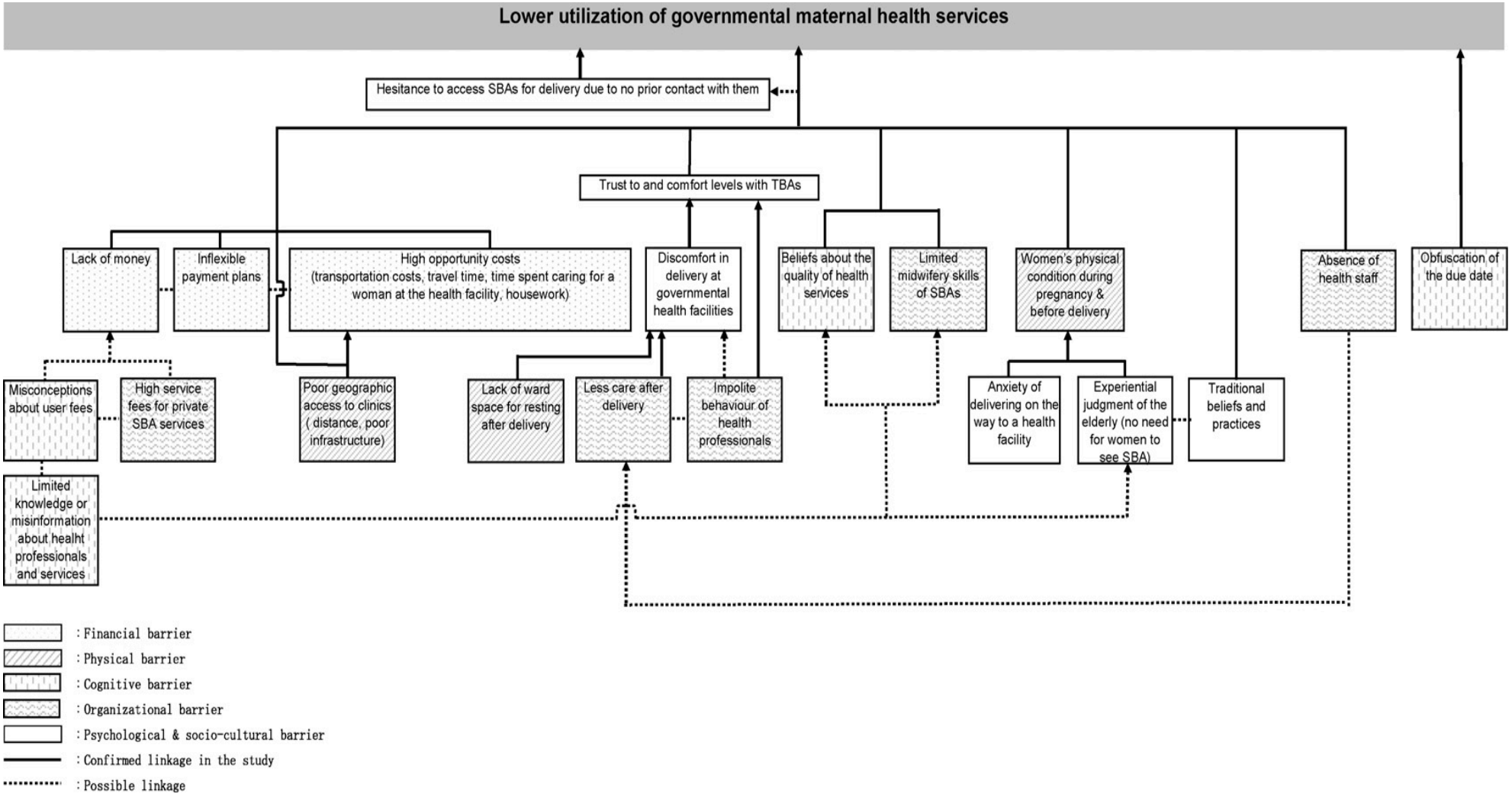
Miteniece and al. in 2018, issued a classification of barriers to skilled health care in health facilities [12]. They divided the barriers listed according to the availability of care, according to the adequacy of the care required, according to the ability to pay for care, according to the informational and communicational approach to care, and finally according to the acceptability of care by the woman and her entourage (according to her culture, her religious beliefs, etc.).

Figure 1 : Barriers to accessing appropriate care for mothers [12]



Mitsuoka and al. provides an explanatory theory for the obstetric care-seeking behavior of women of childbearing age. The following table shows the barriers to specialist health care, in terms of demand and supply of care [13].

Figure 2 : Possible decision-making process of women of childbearing age for non-use of government maternal health services [13]



Matsuoka and al. identified five issues that, either in isolation or in combination with other issues, may explain the low utilization of maternal health care services. These are financial barriers (lack of financial means, inflexible health care financing scheme, high opportunity cost, etc), physical barriers (discomfort in government birthing facilities, physical conditions of women during pregnancy and before delivery, etc), cognitive barriers (limited midwifery skills, unknown due date or delivery date, etc), operational barriers (such as lack of health personnel), and finally psychological and socio-cultural barriers (beliefs about the quality of maternal health care services, etc).

It is important to consider the perspective of the analysis or observation of these barriers.

The current systematic review examines the barriers that constitute the perception of the quality of health care, during pregnancy, during and after childbirth, from the perspective of women and their families.

6. Barriers to accessing skilled maternity care and perceptions of health care

According to the Larousse, perception is defined as the action of perceiving through the sense organs [14]. The concept of perception goes through several stages, according to the human sciences, the sensory stage, the perceptual stage, and the cognitive stage. The perception of the quality of skilled maternity care involves all of these dimensions, and therefore implies a multidimensional management of the experience of pregnancy and childbirth [15].

It is worth noting that perceptual mechanisms, however subjective, can be a real barrier and influence a woman's decision to give birth in a specialist facility. Gabrysch and al. found that the perceived benefits and needs of institutional delivery affect the decision to use specialist care [16]. Perceived quality of care is considered essential in qualitative studies but is not easily measured in surveys [16].

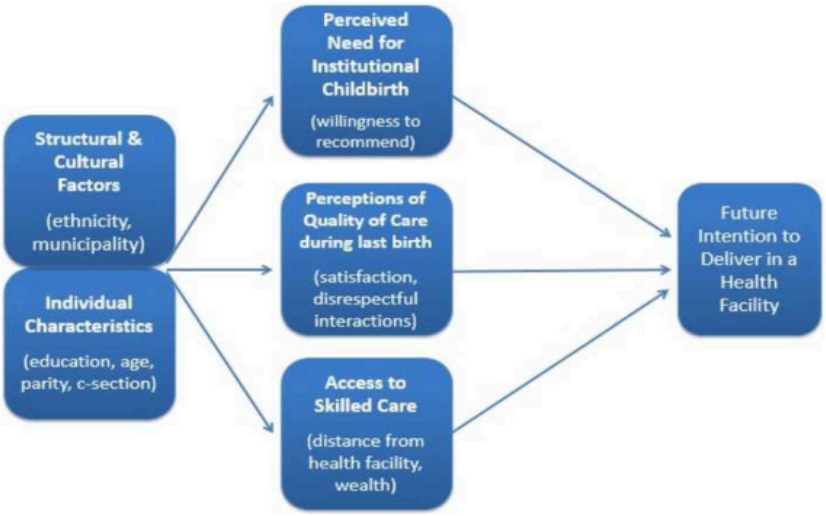
Kruk and al. in 2010, concludes that community perceptions of the quality of care in local facilities influence women's decision to seek specialist care. Indeed, perceptions of quality of care are measured significantly at the community level, but not at the individual level, hence the importance of social interactions in the community. Improving the quality of care in first-level clinics and communicating this information to communities can contribute to efforts to increase service delivery in health facilities in sub-Saharan Africa [17].

In 2013 in Nigeria, a safe motherhood intervention project called "Abiye" promotes pregnancy monitoring, birth experience and postnatal follow-up for rural women. The goal of the Abiye project is to reduce maternal and infant mortality and to preserve maternal health through early

detection and treatment of the four main causes of maternal mortality: severe hemorrhage, infections, blood pressure disorders and obstructed labour. The implementation of the Abiye project is the establishment of "health rangers" or "health guards" composed of trained officers and equipped with communication equipment and mobile machines that are useful on the rough roads that connect rural areas. The health rangers are responsible for maintaining contact with the pregnant women assigned to them in order to monitor their health status during the gestation and post-partum period and to intervene in case of complications [18]. Subsequently, women are referred to the Mother and Child Hospital to deal with maternal and child complications. The learning from this project, through focus groups, identified five key themes in the use of maternal health care [18]. The first theme identified was the influence of the environment and the attitude of the health care staff on the use of health care services. The second theme is the awareness and cost of services determining the use of the safe motherhood project. Communication between the health worker and the patient is a key theme in the use of maternal health care. Unmet expectations and their impact on the use of the Abiye project is a key aspect of maternal health care utilization. And finally, cultural beliefs and gender inequality describe the circumstances and actions that prevent participants from providing services in hospitals.
The Abiye project has highlighted that not all health care services can be determined by the same factors. They depend on localities, cultures, and strategies for implementing these programs. The particular importance of the environment and the positive attitude of the staff lies in their positive influence on the staff-patient relationship. This project has removed some of the missing aspects of care such as costs of services, and awareness, however, it has enabled the evaluation of the beneficial effect of these practices on the use of safe maternity care in Ondo, Nigeria.

Peca and al. , in 2018, went a step further by conducting an explanatory model of a woman's future intention to use a health care facility for childbirth.

Figure 3 : Conceptual model of future delivery use in a health facility [19]



This figure shows that a woman's future intention to give birth in a health facility depends on three elements: the perceived need to give birth with the assistance of a specialized center; the perceived quality of care during a previous delivery (in terms of satisfaction, perceived lack of respect); and access to specialized care (in terms of distance between the mother's home and the health facility, and the wealth of the home).

The study of Peca and al. shows that for home and facility births, perceived need for birthing services and satisfaction with the last birth are major determinants of the intention to use the same place of birth. Perceptions of disrespect and abuse are significantly associated with a deterrent to seeking institutional care, but not with home birth with a traditional birth attendant (TBA) [19].

The question is: "To identify barriers related to the perception of quality of skilled care in health facilities, from the perspective of the patient and/or her close circle (the demand for care), that may contribute to the reduction of maternal deaths in low- and middle-income countries.

7. The objectives

The objective of this study is to identify the barriers inherent in the perception of the quality of maternal care from the point of view of the patient and/or her close circle of friends and family, and which are at the origin of the difficulties in accessing qualified obstetric care. Identifying patient-related barriers means identifying personal barriers related to the demand for appropriate care and to the needs of mothers in order to better combat them later on.

The research methodology is based on a systematic review of existing and recent literature, which is a methodology for selecting and analyzing data.

The questions to be answered are :

1. To what extent can barriers related to multiple (cognitive, psychological) factors such as pregnant women's "perception of quality of skilled care" prevent access to skilled care in low- and moderate-income countries ?
2. To what extent can barriers related to multiple (cognitive, psychological) external factors such as the "perception of the quality of skilled maternity care in a given facility" by family members prevent access to skilled care in low- and middle-income countries?

II. METHODS

1. Eligibility criteria

As a reminder, our systematic review is the identification of barriers or obstacles to accessing skilled maternity care (including emergency care and postnatal follow-up care), in terms of the perceived quality of care provided "from the perspective of the pregnant woman and her family circle". Therefore, the studies are listed under the following conditions.

a. The inclusion criteria

Our systematic review considers cohort studies, case-control studies, cross-sectional studies and experimental studies of pregnant women populations.

These studies are reported in English or French.

Quantitative, qualitative and mixed studies related to our theme are taken into account.

The studies listed date from the last twelve years, from January 2010 to December 2021. This twelve-year time frame was taken in order to collect as much usable data as possible in the area of interest.

The countries covered by this systematic review are the low, lower-moderate and upper-moderate economy countries according to the World Bank's 2019 classification. It is based on Gross National Income (formerly called Gross National Product). Countries are classified into administrative regions by the World Bank [8].

Women of childbearing age are included in our systematic review, i.e. 15-49 years, according to the World Health Organization definition [20].

For the purposes of outcome assessment, skilled care is defined as antenatal care, care during delivery and postpartum care provided under the responsibility of a skilled health worker (an obstetrician-gynecologist, a general practitioner, a midwife). It is important that the reference to facility-based maternity care be specified to differentiate from care provided in a setting other than public or private health facilities and traditional birth attendants.

There should be a reference to a concept of barrier to health care, or any equivalent concept in the understanding. Delayed access to health care, non-adherence to medical care, or barriers to accessing maternal care should be explicitly mentioned in questionnaires (in quantitative studies) or in interviews (in qualitative studies). It must be mentioned during interviews in qualitative studies (focus groups, in-depth discussions, etc.) or during the completion of the questionnaire in quantitative studies that a notion of obstacle or barrier to access to care and follow-up care was expressed by the women or their spouse or husband. This mention concerns the perceptions of the women and their spouse or husband on the quality of health care.

Articles should meet the above criteria in terms of language of publication, years of publication, selected populations of pregnant women, countries included in the systematic review, and outcome criteria to be assessed.

b. Exclusion criteria

This systematic review does not consider scientific articles that report barriers to the provision of skilled maternity care. Therefore, financial, geographical (or physical), and organizational aspects of barriers to the provision of care are not considered. Aspects of care related to technical aspects of maternity care will not be considered.

Our systematic review does not take into account barriers related to the demand for maternity care, such as socio-cultural barriers and religious barriers. According to our reading grid, we must exclude barriers that do not concern the perception of women and their close family circle on the quality of care in general (including care services and the services of qualified midwives practicing in health facilities).

Furthermore, scientific articles that are published outside the chosen study period are not taken into account. Scientific articles that concern countries belonging to the high economy countries are not taken into account.

Other published systematic reviews, systematic review reports, scoping reviews, meta-analyses, qualitative data syntheses, uncited theses, congress and conference papers, World Health Organization reports, non-peer-reviewed scientific articles, books will not be considered.

2. Information sources

The search engines for the literature review are consulted from January to June 2021. The search engines used were PubMed, Embase and Google Scholar, which provided access to scientific articles, conference reports and bibliographic databases such as MedLine, Elsevier and Google Scholar.

3. The research strategy

The search strategy is based on a search equation that was composed of the keywords of the research question. The research question that generated the database for our literature review is: "What are women's perceptions of skilled birth attendance in health facilities in low- and middle-income countries? This overarching theme is being implemented concurrently for a dissertation and thesis work, carried out by a PhD student in public health and by myself, who

aspires to support a master's degree in the same field. The search equation is designed to encompass all keywords related to skilled care at birth in low- and middle-income countries, both in terms of intention to use skilled care at birth and in terms of identifying barriers to the use of such care.

For Embase, synonymous terms were searched based on the three concepts: skilled care at birth; barriers; low- and middle-income countries.

For PubMed, MeSH terms were used to identify concepts related to these three terms, and their placement in the article.

Twelve articles retrieved from Google were added to our shortlist.

A language limit in the articles was identified, consistent with our choice to limit our selection to French and English.

4. Selection process

The selection of articles was carried out with the help of another researcher. The initial selection of articles, via the search equation, yielded 1247 documents collected using EndNote version 20 software. For the purposes of the dissertation, the scope of "the perception of skilled care for childbirth in low- and middle-income countries" was studied.

The first level of sorting concerns all articles based on a reading and analysis of the title and abstract. This was done by two reviewers independently and a group review was done at the end of the reading and analysis of the 1247 articles, based on the title and abstract of each paper. The group debriefing consisted of discussion, using evidence from the article to support the arguments put forward. For this exercise, it was useful to retrieve the PDFs of all the documents, which allowed us to distinguish between articles, books, conference reports and non-peer reviewed journal articles. For a better understanding of certain extracts, the online translation software DeepL was used. This first level of sorting consisted of excluding first those articles that would meet the above criteria. Articles that deal with barriers related solely to the provision of care are excluded. In addition, we excluded articles that only reported on barriers related to socio-cultural and religious aspects of maternity care services, both from the demand and supply side. We also excluded articles that dealt with the preferences of women or their relatives for skilled maternity care. This initial screening resulted in the exclusion of 1100 articles, of which 1066 articles met the exclusion criteria, 30 articles were duplicates that were excluded, and 4 articles had no PDF format found on the internet (Google Scholar, and Duck Duck Go). At the end of the first level of sorting, we have 147 articles.

The second level of sorting concerns the 147 articles. Using an Excel spreadsheet, we identified the barriers objectified in the articles as we read them, specifying as much as possible the type of perception regarding services and skilled maternity care.

The items identified during this screening were: authors; title of the article; date of publication; low- or middle-income countries covered by the article; administrative region; target audience (urban, rural, or mixed); study design; financial barriers; geographical barriers; organizational barriers; cognitive barriers; psychological barriers; socio-cultural barriers; religious barriers; quantitative data on barriers (if present); inclusion or exclusion from the article; reasons for decision; and the overall decision.

According to Matsuoka and al. , the barriers to maternal health care are financial barriers (high opportunity costs, lack of financial means, inflexible payment plans); physical barriers (poor geographical access to clinics); organizational barriers (lack of health personnel for care, perceived limited midwifery skills of skilled birth attendants, high service fees for private services of the skilled birth attendant, inappropriate behavior of providers, inadequate post-delivery care) [13].

This second level of sorting made it possible to objectify the different themes related to the perception of skilled maternity care, from the point of view of the woman and her entourage, and they concern several dimensions (organizational, cognitive, psychological). Thanks to this classification, we were able to identify 27 articles that include at least 4 barriers.

The third level of sorting allowed us to select 18 articles because they develop our theme according to the forms of perceptions listed, the details of the different forms of perception, the impact of these perceptions on decision-making, the weighting of the perception of SBAs (women VS family circle).

In the end, we keep 18 items that encompass barriers to the perception of skilled health care that represent low and lower middle-income countries.

5. Data collection process

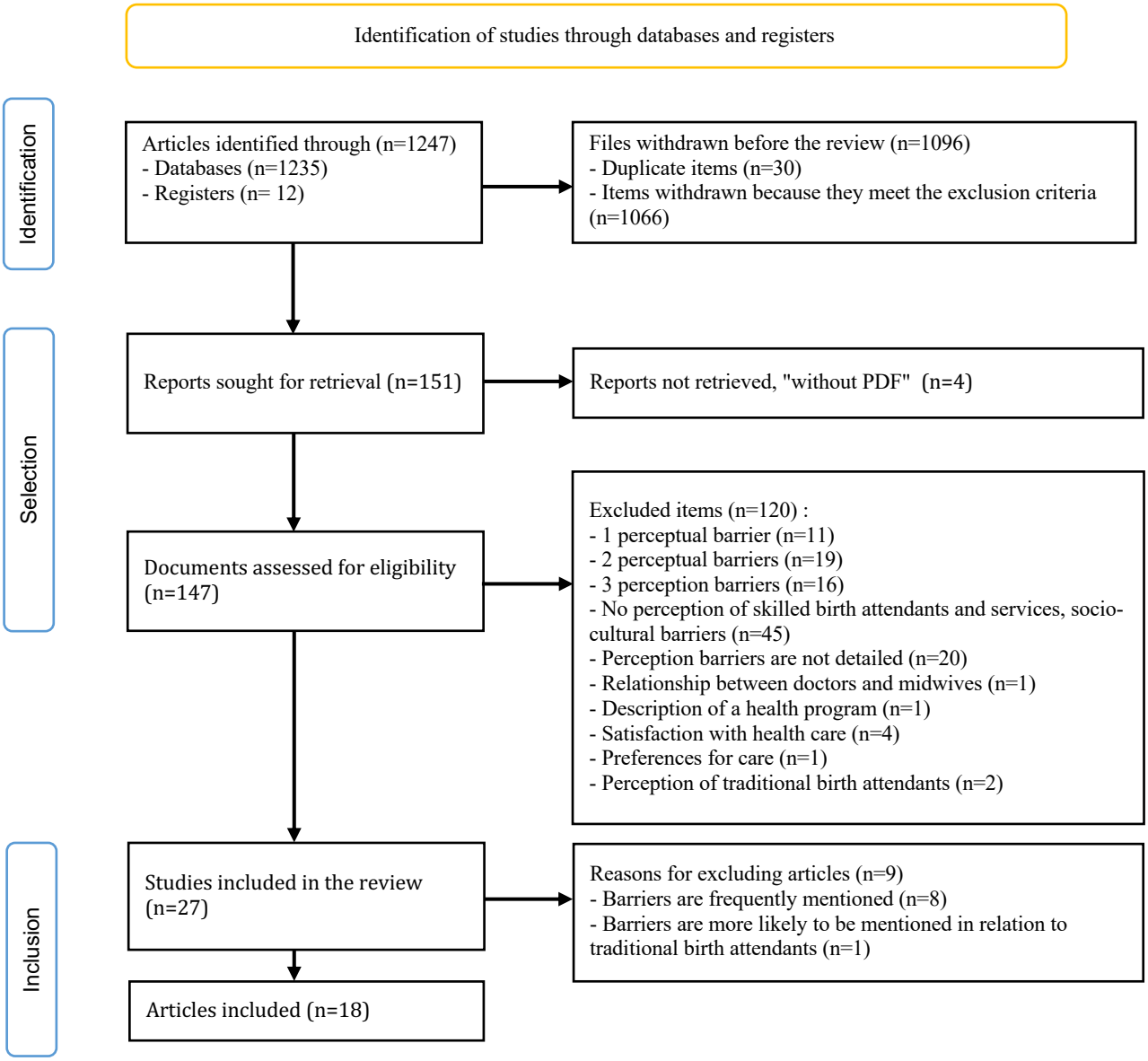
The data is collected by two reviewers who analyze the articles independently, and then make a final judgement afterwards. As mentioned earlier, evidence-based highlighting of extracts helped to resolve disagreements.

No confirmation of data was made with the authors of the articles. Due to the complexity of the topic in terms of point of view, synonyms with the notions of preferences, personal adjustments

were made in order to group the concepts with each other, in view of our understanding and our own literacy in relation to the topic.

With the help of an Excel table, the various barriers were objectified in relation to the perception of quality of care only.

Figure 4 : Prisma flow chart



6. The data elements

In terms of results, the result areas were highlighted in approximately one month. The outcome areas analyzed were articles meeting the exclusion criteria, duplicate documents, documents that are not retrieved because they do not have an objective PDF or text, verification of the nature of the document (systematic review, peer-reviewed documents, the description of a

health care program, etc.), the forms and quantification of barriers to demand for health care, the identification and quantification of the perception of facility-based health care, the perspective of the perception (does it concern women, husbands or partners, traditional birth attendants?), the level of detail of the objectified perception, and the differential diagnosis of a perception (what not to confuse a perception with; satisfaction with care, preferences for care). There are no pre-determined classifications for qualifying or quantifying barriers in the perception of institutional maternal health care. Perception itself is a very rarely cited concept, but the concepts described in the scientific studies refer to it in their interpretation.

No changes were made to the inclusion criteria.

A change was made to the exclusion criteria in the selection of articles at the end of the procedure. Indeed, at the 3rd level of sorting, given the large number of articles (27 articles) detailing the perception of barriers to skilled obstetric care, we opted for the selection of articles containing an arbitrary number of barriers evoked (≥4 barriers), and which provide detailed explanations of women's perceived barriers from a qualitative point of view, and which give an idea of the future intention to use facility-based obstetric care.

The following variables are considered important for which data were sought :

- Personal characteristics of women or spouses related to health literacy. They are: age, education level, general literacy, social environment, socio-economic status, media access, health status,
- Personal obstetric history in health care facilities (previous deliveries),
- Health care costs; 'bad' information about health care costs in health facilities, 'limited' knowledge or misinformation about health care professionals and services,
- Trust in health care services: perceived competence of midwives (extended, limited), care in a culturally accepted way, unavailability of health care supplies (drugs, equipment), health care providers are qualified (not students!), permanent presence of health staff (insufficient or absent staff), facilities in the health care units (beds, mattresses, delivery tables), privacy of women (in terms of allocation of care, providers are women), lack of trust,
- The benefits of giving birth in a health facility (perceived benefit or not),
- Previous experience with TBAs (positive, negative),
- Vulnerability situation: isolation of the mother, lack of family support, lack of food, lack of culturally acceptable rituals in the health facility,

- Perceived negative attitude of midwives by the pregnant woman / or her family (favoritism, discrimination, no fair care, experience of limited choices, abandonment, neglect, fear of reprisal, demand for bribe [21]) ,
- Perceived verbal abuse (insults, retaliation, etc.),
- Perception of physical abuse (undignified care, non-consensual care, fear of abuse, fear of certain treatments or protocols such as caesarean section).

7. Assessment of the risk of bias of the study

This is a mixed systematic review that considers qualitative, cross-sectional and mixed studies. The risk of bias assessment tool chosen is the Mixed Methods Assessment Tool MMAT version 2018 [22].

The items used for the qualitative studies concern the research question, the method of data collection, the consistency of the data collection process and its results, and the conclusions of the study. The items used for the cross-sectional study are the research question, the sampling strategy, the representativeness of the sample, the risk of bias and the statistical analysis. The items used by the mixed-method study compile the two previous items, to which are added: the mixed methodology and its relevance to answer the research question, the integration of the research methods in the mixed-method study, the results of the integration of the qualitative and quantitative components, the respect of the quality criteria of each approach.

The overall assessment of the risk of bias of an article is rated as low, moderate and high risk of bias. This assessment was made by two reviewers, who assessed it independently at first and then reviewed it as a group. A discussion on disagreements in risk assessment is made at the end of the procedure, until a consensus is reached. No studies were excluded as a result of these assessments. In view of this stage, these articles show the methodological rigor that guided their writing and give an idea of the quality of the conclusions reached by this systematic review.

The MMAT assessment showed that the selected articles have a high level of confidence. In addition, these studies have a very low risk of bias, and the assessment was made across the different types of studies corresponding to each item.

The assessment of risk of bias was based on the mixed methods assessment tool MMAT version 2018. This tool, which is used for mixed methods studies, can also be used for qualitative and cross-sectional studies. The MMAT tool proposes two general questions related to the clarity of the research question, and the consistency between the research methodology and the data collected, five questions related only to qualitative methods (qualitative case study, ethnographic studies, studies based on grounded theory, narrative research, phenomenological

studies), five questions related only to quantitative methods that are descriptive quantitative studies, and five questions related only to mixed methods that are in addition to the other two groups of qualitative studies and descriptive quantitative studies.

The risk of bias assessment showed low risks of bias for all articles. This assessment was done by two independent reviewers, and disagreements were resolved by presenting evidence based on the selected articles.

With regard to the assessment of certainty, the factors taken into account in the evaluation of the MMAT tool are the appropriateness of the choice of the methodological approach to answer the research question, the consistency of the research process with the research methodology up to the results phase and its interpretation. The criteria used are a reader's assessment that will be: yes, no, unclear with comments given in addition [23]. The overall judgement of the level of risk is based on a summation of the positive responses and is weighted against all the questions asked.

8. Effect measures

The effect measures in qualitative studies are the objectified barriers to the perception of skilled maternal health care. No quantification is attached to them in our articles, and the grouping of the themes addressed (or units of analysis) is done in categories or headings. For cross-sectional studies, the Odds Ratio (OR) and Adjusted Odds Ratio (a OR) are taken into account, and allow classification as a risk or protective factor. The same applies to the mixed study.

9. Methods of synthesis

The eligibility of the articles for the synthesis is based on the high number of forms of barriers related to the perception of care in health care institutions. Retroactively, each form of perception, no matter how little it is cited, is taken into account through an article that explains it and this article is finally included in our selection.

On the basis of the forms of barriers listed, it was possible to identify and isolate the barriers relating to our theme, to re-evaluate them according to the point of view of interest. The forms were transferred to an Excel table, which made it possible to visualize the relevant articles for the synthesis. Thus, no form of perception is omitted.

The tabulation of the articles included in our systematic review is based on the constitution of an Excel table that takes into account the names of the authors, the title of the article, the design of the study, as well as the objectified barrier forms for each article.

In this way, it was possible to observe which barriers were most common in low- and middle-income countries, and which were least common.
The studies are grouped together without any specific distinction (e.g. according to the size of the target audience, according to the urban or rural populations studied, etc.).

The following table lists the different barriers identified in the literature according to the related categories and relating to the perception of health care by the woman or her family circle.

Tableau 1 : Categories of barriers to perceived quality of health care

Forms of barriers	**Categories**
- Health literacy (education, socio-economic status, mothers' age, environment, media)	**Cognitive barriers**
- Poor information on fees for health care services	
- Limited knowledge or inadequate information about professionals and services	
- Lack of trust	
- Greater comfort observed with traditional birth attendants	
- Poor past experience of care services	
- Perceived limited technical skills of midwives in health facilities	
- Lack of perceived benefit of quality facility-based care	
- Less support from the facility-based midwife	
- Discrimination/ favouritism	
- Lack of equitable care	
- Lack of culturally appropriate care	
- Experience of limited choice	
- Perceived negative attitude from midwife	
- Unavailability of health care supplies (drugs, materials)	**Organizationnel barriers**
- Lack or inadequacy of health personnel (student health care providers)	
- Lack of delivery tables, hospital beds	
- Lack of privacy and confidentiality (male provider)	
- Lack of family support	**Psychological barriers**
- Vulnerability in another environment	
- Perception of verbal or physical abuse	
- Perception of abandonment, neglect, retaliation	
- Undignified care	
- Demand for a bribe	
- Non-consensuel care	
- Fear of abuse	

No statistical synthesis method was used, given the predominance of qualitative studies, and the writer's own desire to exploit, in depth, the themes related to the qualitative approach.

III. RESULTS

1. Selection of studies

The study of articles and their selection in this systematic review followed the steps shown in the flow chart (Methods section). A total of 1235 documents were collected through the search equation, and 12 articles objectified in search engines, making a total of 1247. This includes peer-reviewed scientific articles, non-reviewed scientific articles, reports from international bodies, systematic reviews, scoping reviews, meta-analyses, congress and conference reports, published theses. 91 articles are excluded on the basis of their year of publication, dating back more than 12 years. 30 documents were duplicates. The reading of the documents, based on the title and abstract, made it possible to exclude documents that did not meet the inclusion criteria. Following this reading, 147 articles were read in full text, apart from the 4 articles for which the full document could not be found.

The following table provides an objective view of the articles and their sorting methods. This table is not an update of an old flow chart. As no automation tool was used, the articles listed in the section "Documents excluded after reading the title and abstract" were listed by the second reviewer and myself.

Tableau 2 : Selection of articles for systematic review

Documents identified	Number of documents
Documents selected through the search equation + other means	1247
Documents excluded after reading title and abstract	1066
Duplicate articles	30
Reports retrieved for detailed evaluation	151
Potentially eligible reports that could not be retrieved	4
Documents assessed for eligibility	147
Reports retrieved that did not meet inclusion criteria	129
	18

The excluded studies were excluded for several reasons; 46 studies had 1-3 barriers to skilled health care. These articles were excluded because they did not provide sufficient detail on barriers to skilled care. 45 articles did not investigate women's perceptions of skilled birth attendants and the services they provide. Perception barriers were not detailed in 20 articles. In one article, the relationship between doctors and midwives was studied. One article describes a health program and is therefore excluded. 4 articles studied women's satisfaction with skilled

health care. One paper reported on women's preferences for health care. 2 articles studied the perception of care provided by traditional birth attendants. 9 articles detailed the perception of skilled health care.

After reading the full texts of the 147 articles, 18 articles were selected for this systematic review.

2. Characteristics of the studies

The studies included in our systematic review are :

- Adatara Peter and al. present : Exploring the reasons why women prefer to give birth at home in rural northern Ghana: a qualitative study (qualitative study; 2020)
- Ahmed Ibrhim Mohammed and al. present : Reasons for low level of skilled birth attendance in Afar pastoralist community, North East Ethiopia: a qualitative exploration (qualitative study ; 2018)
- Bhatta Dharma Nand and al. present : Paternal Factors and Inequity Associated with Access to Maternal Health Care Service Utilization in Nepal: A Community Based Cross-Sectional Study (cross-sectional study; 2015)
- Bhattacharyya Sanghita and al. present : “Neither we are satisfied nor they”-users and provider’s perspective: a qualitative study of maternity care in secondary level public health facilities, Uttar Pradesh, India (qualitative study ; 2015)
- Crissman H. P. and al. present : Shifting norms : pregnant women’s perspectives on skilled birth attendance and facility–based delivery in rural Ghana (qualitative study ; 2013)
- Dako-Gyeke P. and al. present : The influence of socio-cultural interpretations of pregnancy threats on health-seeking behavior among pregnant women in urban Accra, Ghana (qualitative study ; 2013)
- Ganle John Kuumuori and al. present : Socio-cultural Barriers to Accessibility and Utilization of Maternal and Newborn Healthcare Services in Ghana after User-fee abolition (qualitative study ; 2015)
- Gebremichael Mengistu Welday and al. present: Women suffer more from disrespectful and abusive care than from the labour pain itself: a qualitative study from Women’s perspective (qualitative phenomenological study ; 2018)

- Kaba Mirgissa and al. present: Home delivery and associated factors in an urban context: A qualitative study in Hawassa City, Southern Ethiopia (qualitative study ; 2015)
- Karanja Sarah and al. present : Factors influencing deliveries at health facilities in a rural Maasai Community in Magadi sub-County, Kenya (mixte study ; 2018)
- Kwambai Titus K and al. present : Perspectives of men on antenatal and delivery care service utilization in rural western Kenya: a qualitative study (qualitative study ; 2013)
- Matsuoka Sadatoshi and al. present: Perceived barriers to utilization of maternal health services in rural Cambodia (qualitative study ; 2010)
- Naanyu Violet and al. present : "Childbirth is not a Sickness; A Woman Should Struggle to Give Birth": Exploring Continuing Popularity of Home Births in Western Kenya (qualitative study ; 2018)
- Onta Sharad and al. present : Perceptions of users and providers on barriers to utilizing skilled birth care in mid- and far-western Nepal: a qualitative study (qualitative study ; 2014)
- Orpin Joy and al. present : Women's experiences of disrespect and abuse in maternity care facilities in Benue State, Nigeria (qualitative study ; 2018)
- Roro Meselech Assegid and al. present : Why do women not deliver in health facilities: a qualitative study of the community perspectives in south central Ethiopia? (qualitative study ; 2014)
- Wassihun Biresaw and al. present : Prevalence of disrespect and abuse of women during child birth and associated factors in Bahir Dar town, Ethiopia (cross sectional study ; 2018)
- Yakong Vida Nyagre and al. present : Women's experiences of seeking reproductive health care in rural Ghana: challenges for maternal health service utilization (qualitative study ; 2010)

The majority of the countries covered by these articles (14/18), are from the sub-Saharan area of Africa (Adatara and al. ; Ahmed and al. ; Crissman and al. ; Dako-Gyeke and al. ; Ganle and al. ; Gebremichael and al. ; Kaba and al. ; Karanja and al. ; Kwambai and al. ; Naanyu and al. ; Orpin and al. ; Roro and al. ; Wassihun and al. ; Yakong and al.). The remaining 4 countries are from South Asia (Bhattacharyya and al. ; Onta and al. ; Bhatta and al.) and East Asia and the Pacific (Matsuoka and al.).

7 out of 18 articles are from rural areas (Adatara and al. ; Ahmed and al. ; Crissman and al. ; Karanja and al. ; Kwambai and al. ; Matsuoka and al. ; Yakong and al.), compared to 2 articles

in urban areas (Dako-Gyeke and al. ; Kaba and al.) and 4 articles that were conducted in mixed areas (Ganle and al. ; Bhatta 2015; Naanyu 2018; Roro 2014).
Qualitative papers make up the majority of papers included for this systematic review (Adatara and al. ; Ahmed and al. ; Bhattacharyya and al. ; Crissman and al. ; Dako-Gyeke and al. ; Ganle and al. ; Gebremichael and al. ; Kaba and al. ; Kwambai and al. ; Matsuoka and al. ; Naanyu and al. ; Onta and al. ; Orpin and al. ; Roro and al. ; Yakong and al.). There are 2 cross-sectional studies (Bhatta and al. ; Wassihun and al.) and 1 mixed study (Karanja and al.) in our review.

The perceptions of women and those around them (husband or partner) on the quality of skilled obstetric care are listed in a decreasing mode. The main studies that assess "lack of privacy and confidentiality (male provider)" are objectified in 10 articles (Adatara and al. ; Ahmed and al.; Bhattacharyya and al. ; Ganle and al. ; Gebremichael and al. ; Karanja and al. ; Naanyu and al.; Roro and al. ; Wassihun and al. ; Yakong and al.).
A second barrier is "perceived negative attitude of the midwife", explained through the 9 selected articles (Crissman and al. ; Dako-Gyeke and al. ; Ganle and al. ; Gebremichael and al.; Karanja and al. ; Matsuoka and al. ; Roro and al. ; Yakong and al. ; Kwambai and al.).
A third important barrier observed in our systematic review is “perceived verbal or physical abuse" objectified in 8 articles (Adatara and al. ; Bhattacharyya and al. ; Crissman and al. ; Gebremichael and al. ; Karanja and al. ; Naanyu and al. ; Orpin and al. ; Wassihun and al.).
A fourth barrier to consider is “unavailability of care supplies (drugs, materials)” observed in 8 articles (Adatara and al. ; Ahmed and al. ; Bhattacharyya and al. ; Crissman and al. ; Ganle and al. ; Kaba and al. ; Karanja and al. ; Roro and al.).
A fifth barrier is the “perception of abandonment, neglect, retaliation" objectified through 6 articles (Adatara and al. ; Ganle and al. ; Gebremichael and al. ; Kaba and al. ; Matsuoka and al. ; Yakong and al.). Another barrier highlighted in this systematic review is giving birth or receiving care in “a vulnerable situation in another environment”, this is objectified across 6 articles (Bhattacharyya and al. ; Crissman and al. ; Gebremichael and al. ; Naanyu and al. ; Orpin and al. ; Kwambai and al.). The “perceived limited midwifery skills of SBAs” is objectified through 6 articles (Ahmed and al. ; Gebremichael and al. ; Kaba and al. ; Matsuoka and al. ; Onta and al. ; Roro and al.).
The next barrier is "lack or inadequacy of health personnel (students are the care providers)", this is demonstrated in 5 articles from our selection (Adatara and al. ; Gebremichael and al.; Matsuoka and al. ; Naanyu and al. ; Onta and al.). The lack of “health literacy (education, socio-economic status, age, environment, media)” of women is an objectified barrier in 4 articles

(Kaba and al. ; Karanja and al. ; Onta and al. ; Roro and al.). Lack of literacy among women's husbands or partners is a barrier in Bhatta and al.

“Limited knowledge or inadequate information about professionals and services” is a barrier objectified in 4 articles (Adatara and al. ; Bhattacharyya and al. ; Dako-Gyeke and al. ; Matsuoka and al.). “Lack of delivery tables and hospital beds” is a barrier objectified in 4 articles (Adatara and al. ; Bhattacharyya and al. ; Ganle and al. ; Naanyu and al.).

“Fear of abuse” is an objectified barrier in 3 articles (Crissman and al. ; Kaba and al. ; Wassihun and al.). “Superior comfort observed with TBAs” is observed in 3 articles (Adatara and al. ; Crissman and al. ; Roro and al.).

“Poor information on health facility fees” is shown in 2 articles (Matsuoka and al. ; Roro and al.). Perceived “discrimination or favouritism” are objectified barriers in 2 articles in our selection (Ganle and al. ; Naanyu and al.), as well as “experience of limited choices” (Adatara and al. ; Yakong and al.), “undignified care” (Gebremichael and al. ; Orpin and al.), '”fear of certain treatments or protocols (HIV testing, caesarean section, etc)” (Dako-Gyeke and al. ; Karanja and al.), “poor past experience of care services” (Ahmed and al. ; Bhatta and al.).

The remaining barriers of “lack of perceived benefit from quality facility-based care”, “lack of equitable care”, “lack of culturally appropriate care”, “demand for bribes”, “non-consensual care”, “lack of trust” and “lack of family support” were mentioned once and respectively in the articles by Crissman and al. (2), Ganle and al. , Wassihun and al. , Naanyu and al. , Wassihun and al. , Kaba and al.

The following table shows the selected items and the barriers to skilled care in low- and middle-income countries.

Table 3 : Items and barriers related to the perception of skilled maternity care

Barriers	*Articles*
ORGANIZATIONAL BARRIERS	
1- Lack of privacy and confidentiality (the male gender of the provider)	24, 26, 28, 29, 33, 34, 35, 36-38
2- Unavailability of health care supplies (drugs, equipment)	24, 26, 28, 29, 31, 32, 33, 35
3- Lack or inadequacy of health personnel (student providers of care to women)	13, 25, 28, 34, 36
4- Lack of delivery tables, hospital beds	28, 29, 35, 36
PSYCHOLOGICAL BARRIERS	
1- Perception of verbal or physical abuse	24, 28, 29, 31, 34, 36, 37, 40
2- Perception of abandonment, neglect, retaliation	13, 28, 32, 34, 35, 38
3- Situation of vulnerability in another environment	28, 29, 31, 34, 36, 39, 40
4- Fear of abuse	31, 32, 37
5- Non-dignified care	34
6- Lack of family support	31
7- Request for bribes	36
8- Non-consensual care	37
COGNITIVE BARRIERS	
1- Perceived negative attitude of the midwife	13, 24, 26, 30, 31, 34, 35, 38, 39
2- Perceived limited technical skills of midwives in health facilities	13, 25, 26, 32, 33, 34
3- Health literacy (education, socio-economic status, age, environment, media)	24-27, 32
4- Limited knowledge or inadequate information about professionals and services	13, 28-30
5- Superior comfort observed with traditional birth attendants	26, 28, 30
6- Wrong information on care service charges	13, 26
7- Discrimination, favouritism	35, 36
8- Experience with limited choices	28, 38
9- Fear of certain treatments or protocols (HIV testing, caesarean section, etc)	24, 30

10- Poor past experience of care services	27, 33
11- Lack of equitable care	35
12- Lack of perceived benefit from quality institutional care	31
13- Lack of trust	32
14- Lack of culturally appropriate care	37

The main barriers to skilled obstetric care as perceived by women and their spouses in middle- and low-income countries are

- Lack of privacy and confidentiality (the male gender of the provider)
- Unavailability of health care supplies (drugs, materials)
- Absence or inadequacy of health personnel (student providers)
- Perception of verbal or physical abuse
- Perception of abandonment, neglect, retaliation
- Vulnerability in another environment
- Perceived negative attitude of the midwife
- Perceived limited technical skills of midwives in health facilities
- Lack of health literacy (based on education, socio-economic status, age, environment, media).

3. Risk of bias in studies

The methodological risk of bias assessment tool MMAT, which we use, is suitable for qualitative, cross-sectional and mixed studies.

For qualitative studies, the research question is clearly defined, and the data collected is adequate to answer the research question. The qualitative approach is deemed appropriate to answer the research question for the articles by Adatara and al. , Ahmed and al. , Bhattacharyya and al. , Crissman and al. ; Dako-Gyeke and al. ; Ganle and al. , Gebremichael and al. , Kaba and al. , Matsuoka and al. , Naanyu and al. , Onta and al. , Orpin and al. , Roro and al. , Yakong and al. , Kwambai and al. The same is true for these articles for issues relating to consistency between data sources, collection, analysis and interpretation of the data collected. Furthermore, the interpretation of the results is sufficiently supported by the data. The conclusions of these

articles were adequately derived from the data. Apart from Bhattacharyya and al. and Matsuoka and al. , the methods of data collection are considered adequate to answer the research question. For Bhattacharyya and al. , the data collection method is not considered adequate for the research question as the health professionals were not selected according to the standards, only 4 health professionals were selected arbitrarily. In addition, the life condition of the unborn baby creates a selection bias, as mothers with stillborn babies are excluded from the sample.
For the article of Matsuoka and al. , qualitative data collection methods are deemed inadequate to answer the research question.
In conclusion, the qualitative studies showed a low level of risk of bias following their assessment by the MMAT methodological tool.

For the cross-sectional papers by Wassihun and al. and Bhatta and al. , the research question is clearly defined and the data collected is adequate to answer the research question. In addition, the sampling strategy and sample size are considered relevant to answer the research question. The measures used are considered appropriate and the statistical analysis designed to answer the research question. The risk of bias caused by non-respondents in the study is considered low for the Bhatta and al. study, but this risk is considered high for Wassihun and al.
In conclusion, the cross-sectional articles showed a low level of risk of bias.

For the mixed-method study of Karanja and al. , the research question is clearly defined and the data collected allows the research question to be answered. This mixed method approach was successful in answering the research question. No discrepancies or inconsistencies between the qualitative and quantitative results were reported. Furthermore, the sample is not representative of the target population, due to the large number of people lost to follow-up. The risk of non-response bias is high. Overall, there is a low level of risk of bias for this article in view of the evaluation using the MMAT tool.

4. Synthesis of results

The articles, objectifying women's perception of the quality of health care in health care institutions, made it possible to highlight the main items related to this perception.

Organizational aspects identified as barriers such as "lack of privacy and confidentiality (e.g. male provider)" were highlighted by 10 articles, all of which have a low risk of bias, and which give strength to this interpretation of the qualitative data. Another organizational aspect is the "unavailability of care supplies (drugs, materials)" objectified in 8 articles in our selection. With

a low risk of bias, this perception of women should be considered as significant and preponderant among the barriers to access to qualified obstetric care. The "absence or insufficiency of health personnel (including student providers)" is an organizational barrier perceived by women in relation to the quality of skilled health care provided in health facilities. This perception is objectified through 5 articles that all have low risk of bias, which gives weight to this perception. The "lack of delivery tables, hospital beds" is a frequently reported barrier, and this is found in 4 articles of our selection. Their risks of bias, as mentioned earlier, are low, and therefore this perception is retained as significant.

One of the cognitive aspects of perceptions related to barriers to access to skilled care, we have the "perceived negative attitude of the midwife" objectified by 9 articles of our selection. They have a low risk of bias after the MMAT assessment. Perceived limited technical skills of midwives in health facilities" is a perception cited by women as a barrier to accessing health care in 6 articles all with low levels of risk of bias. 'Lack of health literacy' is highlighted in 5 articles, including one article (Bhatta and al.) that reports the perception of barriers from the perspective of husbands or partners. Bhatta and al. found that the lack of literacy among spouses or husbands could explain a negative perception of the quality of skilled maternity care, and prevent the woman from attending and giving birth in a health facility. Furthermore, the strength of these articles is underpinned by their low risk of bias, which supports this perception. Limited knowledge or inadequate information about professionals and services" is highlighted by 4 articles, all of which have low levels of risk of bias. Superior comfort with traditional birth attendants" is a barrier found in three articles in our selection. These articles have a very low risk of bias, and therefore a high level of confidence. Fear of certain treatments or protocols', 'experience of limited choice', behaviours of some midwives such as 'discrimination or favouritism', 'poor past experience of health care services', and 'poor information about fees for health care services' are barriers that were highlighted in 2 articles in our selection. These articles are reliable sources given the low risk of bias assessed by the MMAT.

Psychological aspects, the most common of which is "perception of verbal or physical abuse" is objectified in 8 articles in our selection, which have a low risk of bias. Perception of abandonment, neglect, retaliation" by midwives is reported in 6 articles, all of which have a low risk of bias. Women reported a barrier to quality care as "vulnerability in another environment", this is objectified in 6 articles, all of which have a low risk of bias. Fear of abuse" was a barrier identified by women in 3 articles, all of which had low levels of risk of bias. Finally, 'undignified care' was identified in 2 articles as a barrier to women accessing quality

care. These articles have low risks of bias, indicating a high level of confidence. Finally, "non-consensual care", "lack of family support" and "demand for a bribe" are elements that may prevent follow-up and delivery in a health facility under the supervision of midwives. These latter barriers are cited in one article in our selection that have low levels of risk of bias.

The heterogeneity studies in the selected articles show clinical heterogeneity. The patients listed are different in terms of their living environment (urban, rural or mixed). There is a clinical difference observed for patients in relation to their living environment, there is no observed link between living environment and barriers to access to quality care.
The study designs were cross-sectional, qualitative and mixed methods.
The interventions are similar for the majority, there is no difference on this point as it is a question of enquiring about perceptions of the quality of care in health care institutions.
The results of the qualitative studies are ordered according to the perceptions of barriers, which are classified in the table in the Annex (Table: Categories of barriers to perceived quality of health care). All 26 barriers are listed, together with the cross-sectional studies and the mixed study.
A sensitivity analysis of the articles cannot be performed for qualitative studies.
The quantitative studies and the mixed study (Karanja and al. , Wassihun and al. , Bhatta and al.) cannot be compared due to the different questioned populations, which are women (Karanja and al. , Wassihun and al.) and husbands/spouses (Bhatta and al.) respectively. This difference stems from a perception that is objectified by the couple and felt in an opposite way knowing that husbands and mothers do not occupy the same function within the couple and do not respond to the same responsibilities.
As a result, the data on the views of husbands/spouses are presented succinctly, due to the lack of an objective comparative study in our selection of articles.

5. Reporting biases

Of the qualitative studies, the vast majority did not present a risk of bias objectified by the chosen MMAT tool (Adatara and al. , Ahmed and al. , Crissman and al. , Dako-Gyeke and al. , Ganle and al. , Gebremichael and al. , Kaba and al. , Kwambai and al. , Naanyu and al. , Onta and al. , Orpin and al. , Roro and al. , Yakong and al.).
Battacharyya and al. presented a selection bias as the qualitative data collection methods were not deemed adequate to answer the research question. Indeed, the health professionals were not selected according to the expected patterns for a qualitative study (selection of 4 health

professionals). Another bias objected to was the selection of mothers according to the life status of their babies at birth, which excluded mothers who had given birth to stillborn babies.
Matsuoka and al. presented a bias due to the fact that the qualitative data collection method is not considered adequate to answer the research question. Indeed, this question cannot be answered precisely because it is not specified in the article.

Among the cross-sectional studies, Wassihun and al. had a high risk of bias due to a large number of non-respondents to the survey. The paper of Bhatta and al. was not at risk of bias, following assessment by the MMAT tool.

The mixed-methods study of Karanja and al. had risk of bias based on the MMAT assessment. Discrepancies and inconsistencies between the quantitative and qualitative results were not highlighted in this paper, so this criterion could not be assessed and is missing in this case. The sample is representative of the target population due to the selection of 50% of the households that were chosen, however, due to a large number of people being lost to follow-up during the survey, the risk of non-response bias is high.

6. Certainty of evidence

The categories found (organizational barriers, cognitive barriers and psychological barriers) in our selection of articles make it possible to highlight the 26 barriers mentioned above. The analysis of the overall level of certainty makes it possible to classify them according to their level of importance found in the articles. The evaluation by the MMAT tool allows us to establish the evidence of certainty of the results in relation to the selected articles.

IV. DISCUSSIONS, PERSPECTIVES

1. Interpretation

This systematic review aims to reflect perceptions about the quality of skilled care in health facilities that constitute a barrier in low- and middle-income countries.

Barriers are single or multiple, single or multidimensional in terms of categories (organizational, psychological and cognitive). Overall, women's perceptions of the quality of skilled birth care include "lack of privacy and confidentiality", "unavailability of care supplies (drugs, materials)", "perceived negative attitude of midwives", "perceived verbal or physical abuse", "vulnerable situation in another environment", and "perceived limited technical skills of midwives in health facilities".

The factors underlying these barriers are multifactorial and cannot be explained by the location of women's homes (urban, rural, or mixed) or the nomadic or sedentary status of households. Indeed, in some cases, there is no link between the locality of the households and the obstacles that are objectified in terms of perception.

There are women who live in urban areas and yet have "limited knowledge or poor information about health professionals and services", who suffer from "lack of culturally appropriate care", or who do not "trust facility-based obstetric care" [30, 32, 37].

Women in rural areas suffer from "limited choices in care", or "lack of family support", or do not perceive the "value of facility-based maternity care".

Undifferentiated in the PRFIs, whether in rural or urban areas, they deplore "the lack of privacy or confidentiality", "the unavailability of care (drugs, materials)", "the absence or inadequacy of medical staff", "the negative attitude of midwives in health facilities", "the fear of certain protocols or treatments", "the perception of verbal or physical abuse".

Although organizational barriers are part of the provision of care, women and their relatives are able to make value judgements about the quality of care, even if they do not have the expertise in this area. Indeed, the same observation is made by Kruk and al. in Tanzania who links women's perceptions of the competence of doctors, nurses in health facilities, and traditional birth attendants to the influence of community opinions. These perceptions, whether of midwifery care or TBAs, are shared and have a consequent impact on the intention to use skilled care. It would be appropriate to transmit true and beneficial information to community members in order to improve attendance at health facilities. [17]

The first perspective on barriers to skilled care is that of women of childbearing age [13, 24, 25, 26, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 40] and their husbands or partners [27,39] on the perception of the quality of care provided by caregivers. Perception is a concept mentioned in some articles in a clear way, in other articles the concepts mentioned are descriptive elements related to perception.

Perception of barriers to skilled birth attendance may be confused with preferences for TBAs. Preferences for traditional birth attendants are able to counterbalance women's choice of midwives in health facilities. In addition, preferences for cultural aspects, women's sensitivities and perceptions of quality of care influence their choice to use health facilities. The same finding is made by Mahiti and al. in Tanzania, Nakua and al. in Ghana and Qureshi and al. in Pakistan [41, 42, 43]. Women suffer from unbearable conditions that prevent them from visiting or being followed up in health facilities, which explains the high rates of maternal deaths [4]. Perceptions are linked to other factors that are powerful enough to motivate women's preferences to give birth at home, such as cultural aspects of delivery, more adequate comfort with traditional birth attendants, negative attitudes of midwives, preservation of privacy and confidentiality of care.

Pregnancy and childbirth are a reality exclusive to women [13, 24, 44, 45, 46, 47], a natural event that must be experienced in the home without any outside help (by the SBAs) and represents a sign of inner strength [32, 44], and that it is essential to perform traditional acts deemed important for the mother and child [37, 42, 48, 49]. Moreover, delivery in a hospital is only considered if complications arise [44].

The second point of view is that of husbands or spouses: according to our synthesis, the obstacles to qualified obstetric care, from the point of view of husbands or spouses, are attributed to men's lack of health literacy, past experiences of poor quality of care administered, the negative attitude of midwives towards men who accompany their wives, and the situation of vulnerability felt in an environment other than the family cocoon [27,39]. Aborigo and al. , in Ghana, shows that male decision-makers and resource holders in rural households are not involved in the procedures for monitoring their wives' pregnancies, and do not take responsibility for accompanying them to support them, whereas midwives organize support groups for fathers. [50]

2. Limitations of evidence

The vast majority of the articles in our selection are qualitative studies, which allow the expression of women's perceptions of skilled maternity care. In addition, the cross-sectional studies by Wassihun and al. and Bhatta and al. were selected because of their contribution to our theme. The article of Bhatta and al. was selected because it highlights the husband's or spouse's perspective on our topic.

Another limitation of the evidence is that sensitivity analysis was not conducted for the cross-sectional studies in our selection.

3. Limitations of review processes

We note the paucity of studies selected from our database (27, 39) that present the views of husbands or partners, who are considered the decision-makers in households in low- and middle-income countries.

4. Implications

The study of women's perceptions of skilled maternity care in low- and middle-income countries, as well as the views of their husbands or partners, leads us to adopt various measures to strengthen skilled maternity care in health facilities. The predominance of culture, tradition and custom in the perceptions of women and their husbands or partners is concluded, leading to the need to adapt our health systems to local populations. Further studies should support guidelines in this direction.

These measures are addressed at various levels.

For governmental structures, they must improve the funds allocated to maternal health facilities in order to standardize adequate care for women. In addition, they must encourage follow-up of women from rural populations by setting up equipped care centers close to the population, strengthen the staff and skills of SBAs in maternity wards and centers for monitoring pregnant women, and encourage continuous training of midwives and other care professionals to improve their objectives in providing care. Finally, government authorities should provide guidelines to include cultural rites in health facilities in accordance with strict hospital hygiene standards.

For health systems, further studies should adapt the needs of local populations to the existing health structures. These functional changes do not remain static and adapt to local populations and international health guidelines. However, health systems need to focus on the important

elements that need to be considered in order to reduce barriers to skilled care, such as lack of privacy and confidentiality, unavailability of supplies (drugs, materials), lack of or insufficient health personnel, etc. Health systems in low- and middle-income countries need to enact legislation and protective rules to protect women from physical assault, which are underlying fears when attending health facilities. Patients' rights charters should be established and explained to women on admission.

For communities, the specific determinants of health literacy of women and their husbands or spouses should be improved through the mobilization of NGOs and civil society, informing women and their spouses about the services of health facilities, their specific skills, and their benefits for the health of mothers and children. In addition, it is a question of encouraging safe deliveries in accordance with the culture of the local populations, accompanying these rites which will make it possible to motivate mothers to give birth in a health facility. However, there is no question of proscribing traditional birth attendants because they convey and represent a way of life specific to the communities, which must however be supervised and supported.

V. CONCLUSION

Maternal mortality is a tragedy that impacts families and societies around the world. This systematic review examined a database of 1247 articles and papers related to perceptions of skilled maternity care in low- and middle-income countries. After several levels of screening, our selection of articles consisted of only 18 articles, including 15 qualitative studies, 2 cross-sectional studies and 1 mixed-method study that were assigned low levels of risk of bias and high levels of certainty by the MMAT risk of bias assessment tool.

This systematic review identified 26 types of perceptions that represent barriers to accessing skilled maternity care in low- and middle-income countries. The main barriers are lack of privacy and confidentiality, unavailability of health care supplies (drugs, materials), absence or inadequacy of health care personnel (student providers), perception of verbal or physical abuse, perception of abandonment, neglect, retaliation, vulnerability in another environment, perceived negative attitude of the midwife, perceived limited technical skills of midwives in health facilities, lack of health literacy (based on education, socio-economic status, age, environment, media).

Further studies are needed to assess the perceptions of women and their families in the field, to listen to their needs in order to improve the care of mothers and to support recommendations to the competent authorities on the basis of documented evidence.

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