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Contextual factors influencing the implementation of midwifery-led care units in India

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ABSTRACT

Background: The Government of India has committed to educate 90,000 midwives functioning in midwifery-led care units (MLCUs) to care for women during labour and birth. There is a need to consider local circumstances in India, as there is no 'one size fits all' prescription for MLCUs.

Aim: To explore contextual factors influencing the implementation of MLCUs across India.

Method: Data were collected through six focus group interviews with 16 nurses, midwives, public health experts and physicians, representing six national and international organisations supporting the Indian Government in its midwifery initiative. Transcribed interviews were analysed using content analysis.

Findings: Four generic categories describe the contextual factors which influence the implementation of MLCUs in India: (i) Perceptions of the Nurse Practitioner in Midwifery and MLCUs and their acceptance, (ii) Reversing the medicalization of childbirth, (iii) Engagement with the community, and (iv) The need for legal frameworks and standards.

Conclusion: Based on the identified contextual factors in this study, we recommend that in India and other similar contexts the following should be in place when designing and implementing MLCUs: legal frameworks to enable midwives to provide full scope of practice in line with the midwifery philosophy and informed by global standards; pre- and in-service training to optimize interdisciplinary teamwork and the knowledge and skills required for the implementation of the midwifery philosophy; midwifery leadership acknowledged as key to the planning and implementation of midwifery-led care at the MLCUs; and a demand among women created through effective midwifery-led care and advocacy messages.

1. Background

By 2030, maternity services in India will need to respond to approximately 35 million pregnancies per year [1]. As a response outlined in its National Guidelines for Midwifery Services, the Government of India has committed to educating 90,000 midwives, who will be called Nurse Practitioners in Midwifery and function in midwifery-led care units (MLCU) to care for women during labour and birth [2]. MLCUs, in which the midwife is the primary healthcare professional caring for low-risk pregnant women, represent one model of how to integrate midwifery-led care during birth into existing health systems, to improve maternal health [3,4]. This introduces the need to consider

local circumstances, opportunities, and necessities in India, as there is no 'one size fits all' prescription for MLCUs.

The impact of midwives, who are educated and regulated according to international standards [5,6] in improving maternal and new-born health outcomes is well documented. These outcomes in turn have a positive influence on the Sustainable Development Goals (SDGs) and are critical to the achievement of universal healthcare [7–9].

A Cochrane review that included 15 trials involving 17,674 women from high-income countries shows a range of positive outcomes for women who receive midwife-led continuity of care compared to other models of care [10]. Midwife-led continuity of care has midwives as the lead professionals to support women in the planning, organisation, and

Abbreviations: MLCU, Midwifery-led care units; SDG, Sustainable Development Goals.

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delivery of care, from the initial visit to the postnatal period. Positive outcomes include greater satisfaction, fewer interventions, such as epidural analgesia, episiotomies or instrumental births, and lower rates of adverse outcomes such as perinatal mortality. Different models of midwife-led care have been reported to be effective at improving maternal and new-born outcomes in high-income countries [7,10,11]. Midwife-led care has also emerged as an effective model across low- and middle-income countries [11–14], and could be an alternative model not only for providing safe and cost-effective childbirth care for low-risk women but also to improve the efficiency of the health system [11]. However, a lack of enabling factors may compromise the quality of care that midwives can provide [14]. More research about midwife-led care in low- and middle-income countries has been recommended to understand the elements of successful implementations of midwife-led care models, their feasibility, effectiveness, and sustainability [14,15]. Similarly, the World Health Organization recommends implementation of and research into midwife-led care models to improve the quality of maternal and new-born care in low- and middle-income countries [16]. However, no specific care model is effective in every context, which means that the same intervention may have different effects in different contexts.

Context includes anything internal and external to an intervention that may act as a barrier or facilitator in its implementation or may modify its effect [17]. Healthcare contexts, in particular, are influenced by stakeholder values and behaviours, organisational boundaries, external pressures, and environmental factors [18]. Hence, understanding context – including identifying what the contextual factors are and how they influence the implementation of evidence-based interventions – is essential. As part of an implementation project aimed at improving the health of mothers and new-borns [19], this study's aim was to explore contextual factors influencing the implementation of MLCUs across India. The evidence it provides is crucial for the design, targeting and implementation of effective policies and interventions in relation to the implementation of a midwifery-led care model during childbirth. The lessons learned from the results are presumed also to be useful in other similar contexts when designing and implementing MLCUs.

2. Method

2.1. Design

Based on the process evaluation framework suggested by Moore et al. [17], the contextual factors influencing the implementation of MLCUs in India were explored using a qualitative research design [20]. To understand the contextual factors, data were collected from six focus group interviews (FGI) with staff representing national and international organisations across India involved in the setup of MLCUs in India. The Institutional Review Board of the Foundation of Research in Health Systems approved the study (IORG0007693).

2.2. Setting

2.2.1. The midwifery initiative in India

In 2018, the Government of India took an historic policy decision to improve the quality of care and ensure respectful care for women and new-borns through high-quality midwife-led care. Through the “Midwifery Service Initiative” released in 2018, India's Government has committed to educating 90,000 midwives informed by international standards, with a focus on setting up (i) a midwifery education system and (ii) midwifery-led care units [2].

The initiative has two aims. The first is to create a cadre of Nurse Practitioners in Midwifery by educating existing Nurse Midwives who have a General Nursing and Midwifery diploma or a Bachelor's or Master's degree and who are currently working in a hospital. The second is to establish MLCUs in Government Medical College and district

hospitals conducting more than 600 births a year. The first phase entails a national and state-level training cascade in which midwifery-training institutes are strengthened to educate existing midwifery educators so that they are competent to educate the Nurse Practitioner in Midwifery cadre at the state level. In the second phase, the Nurse Practitioners in Midwifery will then lead the midwifery care of women with low-risk pregnancies in MLCUs.

2.2.2. Childbirth in India

Intrapartum care in India is institutionalized, with public hospitals accounting for only 10 %, approximately, of the total number of hospitals throughout the country [21]. India has a maternal mortality rate of 145 per 100,000 live births and a neonatal mortality rate of 23 per 1000 live births. Eighty nine percent of all births in 2019 were assisted by skilled birth personnel (nurse-midwives, auxiliary nurse-midwives and physicians) [22]. With a population of more than 1.3 billion [23], the current birth rate is 17.163 births per 1000 people [24]. The caesarean section rate is 11.9 % in public hospitals and 40.9 % in private hospitals [22]. Childbirth care is standardized by the Ministry of Health and Family Welfare, which has regulatory power over most health policy decisions but is not directly involved in health care delivery in the Indian states. At the state level the State Departments of Health and Family Welfare implement National policies in accordance with the health profile of the state; they may even implement locally developed models over and above implementing national policies [21]. Physicians or specialists in obstetrics and gynaecology are primarily responsible for the care of pregnant and birthing women, characterized by a hierarchical structure in a medical model. Trained nurse-midwives assist the women during pregnancy, labour, and childbirth under a physician's supervision. Nurse-midwives are estimated to manage only about 25 % of all institutional births [25]. Reports of disrespect, abuse, and mistreatment during facility-based childbirth in India have been documented [26,27]. Nurse-midwifery education is via a diploma (3.5 years) or an academic degree (4 years plus 6 months internship) constructed around the medical care model [28]. An academic degree in nursing is required before the 18-month education programme to become a Nurse Practitioner in Midwifery [2] can be entered.

The trained Nurse Practitioners in Midwifery are being absorbed into the public sector healthcare facilities [2]. These include the 763 District Hospitals (highest referral health facility in a district/province catering to 3–4 million population on average [29]) and the 542 Medical College Hospitals (regional referral centres providing tertiary level and rehabilitative care for all health needs). Here the labour rooms have been renovated for optimal quality of care under the Government of India's labour room quality improvement initiative guidelines, known as LAQSHYA [30].

2.3. Study participants and data collection

National and international organisations who were supporting the Indian Government in its midwifery initiative (n = 10) were invited by email in July 2021. The first author provided written information about the study, including the fact that participation was voluntary and that they had the right to withdraw at any time without explanation. The second author sent two to three reminders. Eight organisations agreed to participate, one organisation declined due to organizational policies, and one did not respond. Because of delayed internal processes at two organisations, they had to be excluded. As a result, a total of six organisations participated in the study. The six organisations themselves selected staff working in the capacity of supporting the government in preparing for the set-up of midwifery-led care units. All participants (n = 16) were either nurses, midwives, public health experts or physicians who had programmatic responsibilities. The participants gave their consent to participate by connecting to a digital meeting at an agreed-upon time.

All interviews were conducted during July and August 2021 by three

of the authors (MB, PJ, KE). There were two to three participants in each group. The interviews were conducted in English, based on an interview guide consisting of open-ended questions related to contextual factors influencing the implementation of midwifery-led care units in India. See Appendix 1. The interviews were audio-recorded, and each lasted around 60 min.

2.4. Data analysis

The verbally transcribed interviews were analysed using qualitative inductive analysis [20]. First, all 300 pages of transcripts were read several times to get an understanding of the content. Next, in new readings, meaning units were identified that answered the following research question: What are the contextual factors influencing the implementation of midwifery-led care units in India? Content related to midwifery education was removed and will be presented elsewhere. The meaning units were then compared and sorted into codes based on similar content, which were thereafter compared and clustered into subcategories and generic categories. The analysis process was completed jointly by MB and KE in collaboration with PJ and BS. An example of the analysis process is shown in Table 1.

3. Results

Contextual factors identified as influencing the implementation of midwifery-led care units across India were sorted into four generic categories with respective subcategories. For an overview, see Table 2.

3.1. Category 1. Perceptions about and acceptance of the Nurse Practitioner in Midwifery and the MLCUs

3.1.1. Understanding and recognition of the Nurse Practitioner in Midwifery is uncertain

There was an expressed uncertainty among the participants about the term Nurse Practitioner in Midwifery, as the term and function are confused with the term and function of a traditionally untrained birth attendant (commonly called the Dais) among the public and other healthcare providers. Though the Dais have become obsolete in the current scenario of institutionalized childbirth in India, the participants were concerned that women and the community might conceptually equate the Nurse Practitioners in Midwifery with the Dais. Participants stated that this misperception has led to the Nurse Practitioner in Midwifery being perceived as of a ‘lesser’ cadre compared to nurses and obstetricians. Unless the term and function of the Nurse Practitioner in Midwifery becomes accepted, it may be a long time before women seek their services willingly.

The thing is acceptance from the community because there is apprehension that as soon as community gets to know the word midwifery, there is a thinking that, Oh, they are, not as good as doctors, they are less qualified, so whether communities would like to have child birth or deliveries conducted by midwives, that is to be seen. (FGI 5)

To add to the confusion about the term and function of the Nurse

Table 1
Example of the data analysis process from meaning unit to generic category.

Meaning Unit	Code	Subcategory	Generic Category
The medical model of care treats pregnancy and childbirth as a disease and interventions after interventions are performed when it's not required. So, that's a huge problem.	Unnecessary interventions	The prevailing medical paradigm is strong	Reversing the medicalization of childbirth

Table 2
Generic Categories and Subcategories describing contextual factors influencing the implementation of midwifery-led care units across India.

Generic Category	Subcategory
Perceptions about and acceptance of the Nurse Practitioner in Midwifery and the MLCUs	Understanding and recognition of the Nurse Practitioner in Midwifery is uncertain Lack of awareness of MLCUs Creating a demand for care provided by Nurse a Practitioner in Midwifery is needed
Reversing the medicalization of childbirth	The prevailing medical paradigm is strong Creating a culture in line with international midwifery philosophy Infrastructure and care level under debate
Engagement with the community	Women need to be involved Respectful care for a positive birthing experience motivates utilization
The need for legal frameworks and standards	Legal frameworks are required Lack of standards

Practitioner in Midwifery, both nurses and the Nurse Practitioner in Midwifery have been thought of as synonymous, with both roles being subordinate to the physicians. No differences could be discerned between the philosophies and core values of nurses and Nurse Practitioners in Midwifery, and the new cadre was therefore perceived as competitors not only to the nurses but also the obstetricians. Thus, there was a reluctance among the nurses and physicians to let the Nurse Practitioner in Midwifery emerge as a profession in its own rights.

It is not very easy to carve out a place for midwives, because it is so obstetrics led until now. There are fear factors which are there, like, you know, if midwives will do everything, what will the obstetricians do? (FGI 2)

3.1.2. Lack of awareness of MLCUs

In general, the participants found it difficult to envision the function of MLCUs as they have been made functional only very recently in India. In addition, there seemed to be a lack of awareness among the women, nurses, educators, and physicians about MLCUs and how they differed from labour rooms with care provided by nurses and physicians. The stigma of the Nurse Practitioner in Midwifery being equated with Dais seems to have spilled into their perception of what MLCUs are and what their function is.

The acceptance of the name midwifery-led care unit derives from the history to be run by a not fully qualified care provider staying with the woman from the community giving birth. What has happened from the past in India, the term midwife has been demoted, that they're not fully qualified or something like that kind of thinking. (FGI6)

3.1.3. Creating a demand for care provided by a Nurse Practitioner in Midwifery is needed

Creating a demand for the care provided by a Nurse Practitioner in Midwifery requires that they be promoted as the primary caregiver during the intrapartum period. The internationally accepted core philosophy of professional midwifery, namely, “keeping what is normal, normal”, needs to be accepted by women, the community and health care providers. It was anticipated that the demand for MLCUs would suffer without this acceptance.

Participants suggested several advocacy approaches for promoting the acceptance of the Nurse Practitioner in Midwifery and creating a demand. These included community-based awareness programmes, engaging the media for mass media campaigns, motivating local political leaders, and creating champions.

I think they are still working on how to brand and position a Nurse Practitioner in Midwifery, and how to create that demand in the society, I think that's all happening, because recently we had a meeting, partner coordination meeting, and they did share some updates. (FGI3)

To gain acceptance and create a demand for normal birth, the women, and nurses with experience from the MLCU could act as champions and agents for change.

There are not enough mass communication happening about midwifery. The general populations do not even know what care provided by a Nurse Practitioner in Midwifery is about. (FGI 1)

3.2. Category 2. Reversing the medicalization of childbirth

3.2.1. The prevailing medical paradigm is strong

The legal accountability for childbirth lies with the physicians, meaning that the physicians are responsible for triaging all maternity services, performing interventions such as caesarean sections, and conducting and supervising vaginal births. This legal authority further strengthens the prevailing medical paradigm around labour and birth. The medical paradigm seems to assume that normal birth is time consuming and because of the possible legal implications if something goes wrong, caesarean sections are preferred over normal births. Participants stressed that if the MLCUs are to be successfully implemented, there will need to be a concurrent reversal of medicalization of childbirth, to which the MLCUs will contribute. The Nurse Practitioner in Midwifery has to be recognized and authorized as an autonomous practitioner and allowed to provide normal birth care in their own right. This recognition will help to give physicians confidence to refer women to MLCU care and know that they will be safe.

...for a country that is so obstetric led as India, I think women need permission from their physician to say giving birth cared by a midwife is okay, first, and then when more women have been through the process, then word of mouth will go out to tell others about it. Once they see what the midwives are capable of, and birthing in different positions of choice, and interest will be generated. (FGI3)

According to the participants, the medical profession in India uses an obstetric risk perspective on birth as an argument against the function of the MLCUs and a normal birth perspective. It was mentioned that it is easier for a woman to go for a planned caesarean section than to wait for a spontaneous onset of labour. The perception was that these ideas were deeply rooted in the medical paradigm.

The medical model considers pregnancy as a disease, an adverse condition, and everything happens in a hospital is medical and iatrogenic because intervention after intervention is initiated and applied when it's not required. So, that's the problem. (FGI 5).

3.2.2. Creating a culture in line with international midwifery philosophy

Through the "India Midwifery Initiative" India is moving towards a paradigm shift in which normal childbirth has become facility-based and the Nurse Practitioner in Midwifery is being introduced as the most appropriate care providers for childbearing women. If MLCUs are to be established and sustained, the international midwifery philosophy needs to be understood by the Nurse Practitioner in Midwifery and respected in terms of the division of roles between healthcare professionals.

As pregnancy and childbirth are normal physiological processes, the participants stated that the Nurse Practitioner in Midwifery plays a critical role in upholding a woman's right to a positive birth experience. A shift is needed from a medical paradigm, in which pregnancy and birth can be considered normal only after the event when nothing has gone wrong, to a physiological pregnancy and birth considered as a normal life event in which all will be well until something goes wrong. This different view was seen as the core of midwifery philosophy; according to the participants it meant promoting, protecting, and supporting women's reproductive rights.

I am sure midwife led units are going to make a huge impact once we have the philosophy of care right. Because lot of women don't know their rights, they don't know, you know, I mean consent is not sought. Things happen because they just surrender themselves to the doctor. (FGI 1)

3.2.3. Infrastructure and care level under debate

According to the participant it was being debated nationally whether the MLCUs should be free standing or alongside midwifery units within existing medical college hospitals. Under consideration was MLCUs being established at the district hospitals closer to the community in which a woman lives. The participants argued that establishing MLCUs near communities at lower care levels in rural and tribal areas will reduce overcrowding at higher-level hospitals and increase accessibility for women in underserved areas. Establishing MLCUs at the medical college hospitals could provide a more women-friendly and relaxing atmosphere in existing labour rooms. Further, they argued that MLCUs should not necessarily look the same everywhere. They could be free standing or alongside midwifery units, and not uniform across the country.

To reduce unnecessary medicalization and unnecessary caesarean sections MLCUs are very helpful. But we need midwives even at the lower levels and just not only at the higher levels where it is not going to make much impact on the desire you know. (FGI6)

3.3. Category 3. Engagement with the community

3.3.1. Women need to be involved

It was stressed that the implementation of MLCUs will depend on whether women and community members and leaders are involved the planning for the MLCUs.

Getting stakeholders involved and women involved. When women start shouting out loud, people will hear. Women's voices are very powerful. (FGI 3)

In the communities, Auxiliary Nurse Midwives can play a critical role in referring women to the MLCUs. With support from the Auxiliary Nurse Midwives, the image and demand for care at the MLCUs can be strengthened in the community. Thus, the Nurse Practitioner in Midwifery will need to promote their ability to provide women with high-quality respectful care at the MLCUs, thereby establishing their reputation as experts in normal labour and birth.

I know that in the beginning they (the Nurse Practitioner in Midwifery) may face problems but within a short time the attitude of the community will change. (FGI 4)

There was a concern that unless the engagement with the community entails a co-creation with women, there will be no women champions in the communities who can advocate for the care provided by the Nurse Practitioner in Midwifery at the MLCUs.

3.3.2. Respectful care for a positive birthing experience motivates utilization

The importance of respecting women's choices and empowering them was discussed among the participants. They believed that when the Nurse Practitioners in Midwifery provide respectful care it will create an expectation of a positive birthing experience that will support the establishment and utilisation of MLCUs.

They (the women) need to see, you know, how they (Nurse Practitioner in Midwifery) make decisions, and how they run the MLCU, and how they talk to mothers, and give them informed choices, so they can birth in...you know, whichever position of choice they want to. (FGI3)

The participants believed that the provision of respectful care at the MLCUs by the Nurse Practitioners in Midwifery would give a sense of security for the women giving birth. Respectful care was defined by the participants as: not using a loud voice, having a warm manner, maintaining privacy and confidentiality, preserving the woman's dignity, providing information and informed consent, engaging through effective communication, respecting a woman's choices, and thereby strengthening her ability to give birth, making available competent, motivated Nurse Practitioners in Midwifery.

Ultimately only happy mothers will sustain MLCUs. Positive experiences during the birth okay, mother will be happy, all men will happy during in the antenatal period, so this is our another. (FGI 4)

3.4. Category 4. The need for legal frameworks and standards

3.4.1. Legal frameworks are required

Getting the appropriate legal frameworks in place was considered critical for successful implementation of the MLCUs. Several requirements were identified to facilitate the role and function of the Nurse Practitioners in Midwifery and to provide safe, effective, respectful midwifery care in line with the expectations of women, communities, and other healthcare professionals. They included better coordination between the parties involved to prevent unnecessary duplication of work and wastage of resources and ensuring the involvement of the Indian Nursing Council in the setup. However, participants stressed the need for additional work around developing legal frameworks addressing issues such as the lack of a separate licensure for Nurse Practitioners in Midwifery, directives of scope of practice, autonomy, responsibilities, and consequences, along with an action plan.

I think when the midwifery led units are set up in a state, there will have to be guidance or an office order from the state directory somebody senior official saying that this has been established and the midwives allowed to do A, B, C and D functions independently. (FGI 6)

With legal frameworks in place, the Federation of Obstetric and Gynecological Societies of India could, according to the participants, act as advocates in collaboration with the Society of Midwives to accelerate the implementation of the MLCUs.

So once the professional bodies are convinced, they have a binding. It is easy to influence the attitude and acceptance of other obstetrician and gynecologist. (FGI 5)

3.4.2. Lack of standards

The need for standards that could be used by any hospital for setting up, running, and assessing quality in the MLCUs was stressed. Such standards would allow for better utilization of resources by the MLCUs. The specific standards mentioned were for clinical care services, scope of practice, administrative and care-delivery protocols, logistic support, supplies, career pathways, essential staffing such as a core staff team with a Nurse Practitioner in Midwifery and midwifery leadership on site to promote high standards, philosophy of care, standards for continuing training, mentoring and supervision. But such standards would require funding in national plans, and according to the participants that was currently not the case. According to the participants, these standards would secure a birthing environment that supported the needs of the woman and the baby in all stages during normal labour and birth and ensured that interventions would be offered when clinically necessary.

Guidelines exist for freestanding private midwife-led care units, which, according to the participants, could also be used in the public sector. There was discussion as to whether the standards used in the freestanding private MLCUs would also be used in public MLCUs.

The world midwifery led unit is used very liberally. For a midwifery led unit, you need to have an autonomous midwife, you need to have guidelines on the ethos of what a midwifery led unit is. So, the definitions of midwifery led units needs to be defined, and standards needs to be in place. (FGI 3)

4. Discussion

The study identified four contextual factors that influence the implementation of MLCUs in India: (i) Perceptions about and acceptance of Nurse Practitioners in Midwifery and MLCUs; (ii) Reversing medicalization of childbirth; (iii) Engagement with the community; and (iv) The need for legal frameworks and standards. These findings can be interpreted at four interrelated contextual levels of influence: *Interpersonal, Institutional and Organizational, Community, and Public Policy*, similar to the ecological model of Bronfenbrenner [31]. Our discussion is situated within an ecological model to offer a broader contextual understanding related to the implementation of MLCUs in India.

At an *Interpersonal* level, a critical contextual factor was the uncertain understanding, in general, of the function of the Nurse Practitioner in

Midwifery and a lack of recognition for the role. It can be argued whether part of the uncertainty of perceptions and acceptance among the women and their families and hospital health care staff, might be that the proposed new cadre will be called 'Nurse Practitioners in Midwifery' rather than 'midwives'. The birthing woman is at the centre in this ecological model, positioned as an active rather than a passive actor in the choice of birth environment, with the woman influencing that birthing environment, namely the MLCU, as much as the birthing environment has an effect on her. Consistent with Bronfenbrenner's argument that the contexts and processes in which women actively participate have a greater influence on them [31], the care at the MLCUs seeks to respect and empower women and their birth supporters. As described by Coxon et al., if a woman's first experience of birth is in a health facility, she is likely to choose the same for subsequent births [32], especially if the experience is positive. From an Indian perspective, it can be argued that once women have given birth at an MLCU, they are likely to return for subsequent births. As supported by research [10–14], the women in India at all socioeconomic levels would thus benefit from midwifery-led care, and the Government of India would get closer to meeting the SDGs [33], especially the goal on health, by improving maternal and new-born health outcomes.

At an *Institutional and organizational level* according to the ecological model [31], the prevailing medical paradigm in this study was shown to be strong at the hospitals and within their organisational structure. Nurse Practitioners in Midwifery were described as 'specialists of the normal birth' but were too new as a cadre to be acknowledged as such. Creating a culture in line with midwifery philosophy was deemed important if MLCUs were to be established. In a recent systematic review of barriers to, and facilitators of, the provision of high-quality midwifery services in India, several were identified [34]. For example, having educated midwives free to practice to their full scope was a facilitator that would improve women's experiences of maternity care. In line with McFadden et al., participants in our study also engaged in the debate going on within the health system on the infrastructure required for MLCUs, and the level of health facility at which the Nurse Practitioner in Midwifery should be absorbed for care provision. Another ongoing discussion was on the type of midwifery care unit whether freestanding or alongside a care unit, a concept that has also been discussed by [35] in their investigation of freestanding and alongside midwifery units in England. Walsh et al. have shown how development in health services is influenced by factors that protect the status quo, such as the medicalization of childbirth, leadership, the economy, and institutional norms [35]. Walsh et al. point out that alongside midwifery units have encountered less resistance than freestanding units among the care professionals in a maternity unit [35]. India has chosen alongside midwifery units, a choice that suggests India is moving towards a lower conflict situation, certainly less than with freestanding units. Similar to countries such as Sweden that has alongside units, the relationship between physicians and midwives in these units has been characterized more by teamwork than conflict [36]. Midwives in Sweden are the primary care providers for normal pregnancy and childbirth. Their practice is guided by a non-interventionist ideal, i.e., wait and see rather than intervene. Physicians take over the medical responsibility from the midwife when complications occur during labour and childbirth [36]. In contrast, the medical model of care found in this study is consistent with what has been described in a study on risk, theory, social and medical models, where birthing is a risk needing medical interventions and considered normal only in retrospect [37]. For reversing the medicalization of childbirth in India, teamwork and a non-interventionist practice as the ideal must guide both the Nurse Practitioner in Midwifery and physicians to create a culture in line with the midwifery philosophy. The Nurse Practitioners in Midwifery can probably avert about 65 % of maternal and neonatal deaths and stillbirths, according to data from 88 low-and middle-income countries. [9]. At the same time, the findings from this study reveal a prevailing sense of apprehension among the physicians as well as the nurses working as staff nurses in labour wards

towards the Nurse Practitioner in Midwifery, who seems to be perceived as encroaching on their territory. This latent friction within the health system may undermine the effectiveness of the function of the Nurse Practitioner in Midwifery at MLCUs. The situation may be compounded by the fact that Nurse Practitioners in Midwifery were originally nurses, who have traditionally always worked under the supervision of physicians, creating a power imbalance if not properly addressed. This phenomenon has been described in other studies as well [27,38]. Taken all together, there is a clear call for attention to be paid to a potential threat to the implementation and sustainability of the MLCUs. In line with a recent systematic review on strategies for implementing primary care models in maternity care [39], we suggest that these threats can be mitigated by a number of measures: holding conversations about the changes and the extent of the changes envisaged in establishing MLCUs: advocating for interdisciplinary teamwork: and moving ahead strategically with in-service training and education related to the midwifery philosophy of care.

Community level comprises engagement with women, leaders, and community members that can influence planning for the MLCUs. Although the birthing woman in the community may not be directly involved at this level, women can become champions in their own community advocating the use of the MLCUs to other women. The findings from this study refer to the larger social and cultural environment in which this care model is considered alien and against the Indian tradition. A tradition encompasses the wider environment and draws heavily on attitudes, ideologies, culture, and beliefs that have indirect effects on the individual. Thus, as found in our study, auxiliary nurse-midwives in India play a critical role in supporting the idea of the MLCU and creating demand for care at them by referring women. These results reflect those of Renfrew (2021) who also commented that local community knowledge and resilience, and an equitable, individualised midwifery model of care responds to clinical, psychological, social, and cultural needs [40]. The community level in the ecological ecosystem positively influences the family and the woman and the baby. As found in our study, there exists a challenge in creating a brand of Nurse Practitioner in Midwifery that is free of the social shadows of traditional birth attendants and is seen as an alternate to physicians rather than subservient to them. These perceptions have previously been described as a common stigma historically attached to the professions of nursing and midwifery in India [41].

At a Public Policy level, another critical contextual factor is the need for legal frameworks for midwives to practice, which needs to be in place as India moves towards professionalising the Nurse Practitioner in Midwifery. Unless legal frameworks for practice are in place at the policy level, the Nurse Practitioner in Midwifery will remain unregulated and unable to autonomously provide an entire scope of practice during normal pregnancy and childbirth. These findings suggest that they will remain under the jurisdiction of the physicians at the MLCUs if legal frameworks for practice are not in place. It was also found that there is a lack of standards for midwifery practice. Thus, a full set of global standards for practice, contextualized into national policies and plans, is required when setting up midwifery services [42]. Neighbouring countries in South East Asia have recognised the importance of legislation for midwifery practice [43]. Consistent with findings presented in a recent study on the challenges and legal midwifery reforms needed in India [44], for India to succeed with its impressive midwifery initiative, legislation cannot be overlooked. Legislation and standards in place provide strength to the midwifery profession [45]. There is a link to midwifery leadership in that it is essential to drive change and well-run functioning midwifery-led units are characterized by high quality leadership [35]. If restrictions for Nurse Practitioners in Midwifery remain unaddressed, the status quo will remain in India as only strong midwifery leaders can challenge the status quo.

4.1. Strengths and limitations

The key strength of this study is that it is the first of its kind, to the best of the authors' knowledge, to address contextual factors influencing the implementation of midwifery-led care units across India. Insider and outsider perspectives benefited the whole research process. The research group consists of senior researchers from India and Sweden who have extensive expertise in India and South-East Asia contexts. The study is not without limitations. The small number of participants could be questioned; however, the participants were all experts, sharing their extensive expertise in the field. For the international researchers, language issues were sometimes a barrier, but were compensated for by the national researcher. The participants were selected based on their involvement with the setup of MLCUs in India, and they may or may not have worked with women in the communities. But given their extensive experience within the field of midwifery and maternal health, this study benefits from the different professional lenses brought up in the interviews. Despite the limitations, the information obtained from the participants generated rich and comprehensive data, which will be of use in India. However, other countries and settings must interpret these in light of their own context when designing and implementing MLCUs.

4.2. Conclusion

Contextual factors influencing the implementation of midwifery-led care units in India include the following: (i) Perceptions of the Nurse Practitioner in Midwifery and MLCUs and their acceptance, (ii) Reversing the medicalization of childbirth, (iii) Engagement with the community, and (iv) The need for legal frameworks and standards. Together, these contextual factors are critical for the design, targeting and implementation of effective policies and interventions in relation to the implementation of a midwifery-led care model during childbirth. Based on the findings from this study, and in agreement with worldwide evidence on midwife-led care [10–15,39], we recommend that in India and other similar contexts, it is important to ensure that:

- Legal frameworks are in place to enable midwives to provide full scope of practice in line with the midwifery philosophy and informed by global standards.
- Interdisciplinary teamwork and the knowledge and skills required for the implementation of the midwifery philosophy is optimized through pre- and in-service training.
- Midwifery leadership is acknowledged as playing a key role in the planning and implementation of midwifery-led care at the MLCUs.
- A demand among women is created through effective midwifery-led care and advocacy messages.

Ethical statement

Ethical approval was obtained from the Institutional Review Board of the Foundation of Research in Health Systems with the reference number IORG0007693.

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CRedit authorship contribution statement

MB and KE designed the study. Data were collected by MB, KE and PJ. All authors analysed the data and MB and KE prepared the first draft of the paper to which all authors contributed important revisions. All authors have read and approved the final manuscript.

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Conflict of interest

The authors declare that they have no conflict of interest. The authors alone are responsible for the views expressed in this publication, which do not necessarily represent the decisions or policies of the funder.

Statement of significance

Problem or Issue: Midwifery-led care is known to improve maternal and new-born health outcomes, but little is known about factors influencing implementation of this care model in low- and middle-income countries.

What is Already Known: The Government of India has committed to educate 90,000 midwives, who will be called Nurse Practitioners in Midwifery and will function in midwifery-led care units to care for women during labour and birth.

What this Paper Adds: Knowledge about the contextual factors critical for the design, targeting and implementation of effective policies and interventions in relation to the implementation of a midwifery-led care model during childbirth.

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