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Enablers and barriers of domiciliary midwifery practice using the socio-ecological model: a qualitative study exploring the perspectives of students and lecturers in Uganda

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Abstract

Background Early postnatal discharge is increasingly common worldwide, yet the World Health Organization's recommended 3-3-6 schedule for postnatal visits and assessments is often not adhered to by mothers and healthcare workers. The early neonatal period is critical for both mother and baby, accounting for a significant proportion of maternal and neonatal deaths, especially in developing countries. According to the recently released *Midwifery Accelerator*, achieving universal coverage of care provided by midwives can avert two-thirds of maternal and newborn deaths, including stillbirths. Domiciliary midwifery practice, where mothers and newborns are followed up at home after discharge, represents a promising model of midwifery continuity of care that can assist in reducing maternal and neonatal mortality. This study therefore, aims to explore the perceived factors influencing domiciliary midwifery practice among midwifery students.

Methods A qualitative descriptive cross-sectional study was conducted using semi-structured interview and focus group discussion guides. Seven key informant interviews and three focus group discussions were conducted among purposively selected lecturers and 20 Bachelor of Midwifery Science students in Lira District, Uganda. Data was collected between May and July 2024, and analyzed using the socio-ecological model, thematic analysis, while NVivo software was used to organize the data.

Findings Two major themes of barriers and facilitators, with 14 subthemes were identified. Multiple intertwined factors at various levels were found to influence student's domiciliary midwifery practice. Most of these factors operated at the individual and institutional levels. Individual-level factors included poverty, cultural beliefs, and trust. At the institutional level, factors included the availability of resources, supervision, time constraints, and the working environment. Significant figure influence, attitudes, relationships, and feedback were identified at the interpersonal level.

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Conclusion Many of the individual and institutional factors that hinder effective domiciliary midwifery practice by students are preventable. Therefore, stakeholder engagement is crucial to address these barriers at all levels, with the ultimate goal of reducing maternal neonatal mortality during the early postnatal period.

Keywords Continuity of care, Domiciliary midwifery, Postnatal care, Student midwives, Community midwifery

Introduction

It is estimated that globally, 712 maternal and 6300 newborn deaths occur daily [1]. Most of these mortalities occur due to avoidable postnatal complications, and over 70% of all these maternal deaths occur in sub-Saharan Africa [2]. Uganda has made substantial progress towards reducing the maternal and neonatal mortality ratio from 336/100,000 live births in 2016 to 189 per 100,000 live births and 27 in 2016 to 22 deaths per 1,000 live births in 2022, respectively [3]. There has been a steady decline in neonatal mortality; however, to achieve SDG 3 of less than 70 deaths per 100,000 live births, more effort should be made to address the root cause of these problems [1].

Major contributing factors to maternal mortality include haemorrhage, hypertensive disorders, sepsis; indirect causes such as malaria, anaemia, and other infections, while those contributing to neonatal mortality include birth asphyxia, complications of prematurity, and septicaemia [3]. Early postnatal discharge from a healthcare facility after childbirth is increasingly common worldwide, yet the World Health Organization's recommended 3-3-6 schedule (a postnatal check-up at 3 days, 3 weeks, and 6 weeks after birth) for assessments is often not adhered to by mothers and healthcare workers [4, 5]. This non-adherence ultimately contributes to maternal and neonatal morbidity and mortality rate. The early neonatal period is critical for both mother and the newborn, deaths during this period accounts for a significant proportion of maternal and neonatal deaths, especially in developing countries [5]. According to the United Nations Population Fund's recently released report - *Midwifery Accelerator*, achieving universal coverage of care provided by midwives can avert two-thirds of maternal and newborn deaths, including stillbirths [6].

Domiciliary midwiferies close this gap of non-adherence by providing continuity of midwifery care at the mother's home. Continuity of care can be relational, informational, or management continuity of care [7], and domiciliary midwifery caters for all aspects. Through this aspect of their course, midwifery students are required to experience and contribute to women's maternity care across the continuum of birth and into the postnatal period. The educational benefits of this activity for students are well reported [7–9]. Domiciliary midwifery practice is a compulsory pre-requisite for student midwives by the Ugandan Nurses and Midwifery Council since the inception of midwifery programs in Uganda. This practice, where mothers and newborns after delivery are followed up at home, represents a model of midwifery continuity of care that provides ongoing assessment, support, education, and care during this vital period. It helps in equipping students with the necessary skills to become an independent practitioner. There is increasing evidence of the effectiveness of midwifery continuity of care and early postnatal home care in reducing mortality, increasing patients' satisfaction, improving birth outcomes, and assisting women's successful transition to motherhood [10–12]. Recently, the International Confederation of Midwives (ICM) and World Health Organisation (WHO) recommended a transition to a continuity of midwife care model to ensure access to quality midwifery care for every woman [13].

Creating stronger learning experiences for midwifery students during the continuity of care by mitigating the obstacles and enhancing their care experience is very important in improving the quality of care rendered to women. There is however, paucity of evidence about ways of improving this care in the study setting. Most of the studies about domiciliary midwifery exist in developed countries [7–9, 11, 14, 15]. Therefore, the need to understand the perceived factors influencing domiciliary midwifery practice among midwifery students. The goal was to establish how best to support students undertaking domiciliary midwifery. The domiciliary midwifery practice is affected by various factors, and the Socio-Ecological Model (SEM) serves as a framework to understand how behaviors affect and are affected by various contexts. The SEM proposes a combination of multilevel factors that interplay to influence individual practices, including individual, interpersonal, organizational, community, and public policy [16]. The SEM is based on the premise that individuals are embedded within social networks, which are in turn embedded within institutions and communities, and that all of these are impacted by policies that directly or indirectly influence health practices [16].

Materials and methods

Study design and setting

This qualitative descriptive cross-sectional study is part of a larger mixed-method study conducted between May to July 2024 as a domiciliary midwifery care assessment in Lira, Uganda. This was done to provide an in-depth analysis of factors influencing domiciliary midwifery practice.

This study was conducted among Bachelor of Midwifery students and their lecturers in a higher education

institution in Lira, Northern Uganda. This university has many faculties and runs undergraduate and postgraduate midwifery programs. There are approximately 200 midwifery students in the undergraduate program, which is a four-year course in the institution. The domiciliary model as a requirement by the midwifery regulatory body, was introduced since the inception of the midwifery program institution.

Population and sampling

The target population is Bachelor of Midwifery students in their fourth year who participated in domiciliary midwifery care in the recess term of 2023 and their lecturers. There were 68 midwifery students in that cohort, seven lecturers, and 15 teaching assistants. Purposive sampling was used to ensure maximum variation and that individuals with adequate information about this model were interviewed. Participants were recruited considering the students' and lecturers' group dynamics by ensuring representation of different groups of lecturers (lecturers and teaching assistants) and students (fresh from high school called direct entry students and those already in practice called the extensors). The sample size was determined by data redundancy. The inclusion criteria for students were being in their fourth year of study, and participating in domiciliary care, while that of the lecturers was being an academic staff member at the department and having participated in domiciliary care supervision for two years or above. The participants were not given any incentives to participate in the study.

Data collection

Data was collected in May and July 2024 using a semi-structured interview and focus group discussion guides, which were developed for the study after reviewing the literature. The tool was pretested on seven students who were not included in the main study to ensure clarity, and a few amendments on language clarity were made. The focus group discussions (FGDs) were conducted in the lecture rooms of the university, while the key informant interviews (KIIs) were conducted in the lecturers' offices. Three FGDs, each comprising six to seven students, and seven KIIs among lecturers were conducted; FGDs lasted for an average of two hours, while KIIs lasted for about 45 min. Data was collected by the first and last author. The last author, who is experienced in qualitative studies, trained the first author for qualitative data collection. The main interview questions explored the participants' experiences and the factors influencing domiciliary care, as seen in Supplementary file 1. While other probing questions were asked depending on the participant's response. The participants were asked the same questions, and varying probing questions were used to obtain clarifications where necessary. Field notes were also taken by the interviewers during the data collection. Interviews and focus group discussions were audio-recorded, and data saturation was experienced during the second FGDs and during the sixth KII. The data were collected in English only and transcribed verbatim. Both KIIs and FGDs were discontinued after data saturation was achieved.

Trustworthiness

Trustworthiness is a concept of ensuring authenticity and quality in a qualitative study. As proposed by Lincoln and Guba, the trustworthiness criteria were followed to ensure the quality of the study's findings [17]. All four aspects of trustworthiness were ensured, including credibility, dependability, confirmability, and transferability. Credibility relates to how the study analysis was conducted to ensure that no pertinent information was excluded [18]. This was achieved through member checking, which was done after initial data analysis with some research participants and co-investigators to confirm research findings and interpretation and to ensure that the findings accurately reflect participants' experiences. Dependability, the extent to which data can be depended on over time, was ensured using an inquiry audit and participant verbatim quotes to support findings interpretation. The use of two groups of participants and two methods of data collection helped in the triangulation and credibility of findings. At the same time, confirmability was ensured by involving two independent coders in the coding process and a third person to confirm the codes to exclude subjectivity.

Data analysis and theoretical framework

Transcripts were then exported to NVivo version 20 (QSR International, Doncaster, Australia) for organisation, coding, and analysis. The six phases proposed by Braun and Clarke thematic analysis approach were used to identify the subthemes and the five-level factors of SEM were used deductively to present the identified subthemes during data analysis [19]. The thematic analysis steps were used for the initial coding guide for the subthemes. Data was coded by two independent coders and verified by the eight author. Language modifications were made where necessary to provide clarity or to remove redundant words. The Consolidated Criteria for Reporting Qualitative Research (COREQ) guideline was followed to report findings [20].

Findings

Twenty Bachelor of Midwifery students and seven lecturers participated in the study. The ages of the students range from 23 to 36 years; most are single, female, direct entry (those who joined midwifery program for the first time usually after high school), and majority met their domiciliary mothers at a hospital facility as opposed to

Table 1 Demographic characteristics of the FGDs participants

Participants ID	Age	Gender	Marital status	Entry type	Facility type
FGA1	24	Male	Single	Direct	Hospital
FGA2	23	Female	Single	Direct	Health center
FGA3	25	Male	Single	Direct	Health center
FGA4	23	Male	Single	Direct	Health center
FGA5	25	Male	Single	Direct	Hospital
FGA6	24	Female	Single	Direct	Health center
FGA7	25	Female	Single	Direct	Health center
FGB1	23	Male	Single	Direct	Hospital
FGB2	23	Female	Married	Direct	Hospital
FGB3	24	Male	Single	Direct	Hospital
FGB4	23	Female	Single	Direct	Hospital
FGB5	24	Female	Single	Direct	Health center
FGB6	23	Female	Single	Direct	Hospital
FGB7	24	Male	Single	Direct	Health center
FGC1	24	Female	Single	Direct	Hospital
FGC2	23	Female	Single	Direct	Hospital
FGC3	23	Female	Single	Direct	Hospital
FGC4	23	Male	Single	Direct	Hospital
FGC5	36	Female	Married	Extension	Hospital
FGC6	34	Female	Married	Extension	Health center

A, B, and C stand for the three FGDs. Identifiers used for the quotes FGA, B, C stands for focus group discussions A, B and C

Table 2 Summary of the facilitators and barriers

Themes	Subthemes
Facilitators	Knowledge/skills
	Women's trust and respect
	Relationships
	Women's attitude
	Resources
	Feedback
Barriers	Socio-economic factor
	Significant figures influence
	Language
	Culture
	Gender
	Supervision
	Environment
	Time constraint

the clinics, as shown in Table 1. Among the lecturers, five were senior lecturers, while 2 were teaching assistants. The lecturers' ages range from 27 to 69 years; five were female, and their domiciliary supervision experience varied from 4 to 8 years.

Factors influencing domiciliary midwifery practice

Under the determinants of domiciliary midwifery practice, two major themes of barriers and facilitators, with 14 subthemes as presented in Table 2, were identified.

The findings will be presented using the framework (SEM) that guided the data analysis. The factors that positively or negatively influence domiciliary midwifery practice were on the four levels of the Socio-Ecological Model (SEM) as seen in Fig. 1. However, most of them are under the individual, interpersonal and institutional levels, with just a few at the community levels.

Level 1: individual factors

According to the SEM, individual factors are an individual's biological or personal history that increases or reduces the likelihood of effective domiciliary practice knowledge, attitudes, and practices among a person that affect decisions and actions. At the individual levels, knowledge and women's trust and respect were identified as factors enhancing domiciliary midwifery practice. However, language, women's attitude, and socio-economic factors negatively affected effective domiciliary practices.

Sub-theme 1.1: knowledge

The participants acknowledged that knowledge is crucial to effective domiciliary practice, as the mothers and sometimes the entire neighborhood trust and believe in the midwife as an expert with adequate knowledge to attend to their various needs. They confirmed that this prompted them to read more and consult with others to equip themselves in areas where they are not conversant.

> *"Throughout all this, I learned a lot and have realized that by the time you visit your mother's home, you must be knowledgeable enough. So, I could come back and read. Around my mother's home, there were three other expectant mothers. So, whenever I come around, they also want to consult with me, so I*



Fig. 1 Factors influencing domiciliary midwifery practice based on the Socio-Ecological Model

have to study to know what to tell them, and I made sure that whenever I could go, I carried my equipment" (FG A7).

"When you go out to the community, these people, they think you know, they expect everything from you, so you should be aware of everything, you should be knowledgeable" (FG C2).

"Students go through the prerequisite courses and another intensive theoretical and practical workshop to equip them before they start the activity" (KI 03).

"In case of anything, they consult with me, and everything I tell them is what they take. They took my contacts and would call me in case of anything. A simple sneeze, they would call me, the baby is sneezing, what can we do now? what you said, I did it. And what else can I do? You said I should eat this. Can I also eat this? It made me so happy" (FG B5).

"In the community, you go with your education talks, but the neighbor or relatives are telling that mother something else, some other people can give her contradicting information, which can be a problem if she is not a cooperative type" (FG C2).

Sub-theme 1.2: women's trust and respect

The participants indicated that for effective domiciliary practice, it is essential that the mothers cooperate with their midwives. They have to trust and respect the midwife's ability and training over the opinions of their neighbors or friends. Sometimes, other people give the women contradictory information, and if they cannot trust the midwife to give them the correct information, it can lead to issues.

Sub-theme 1.3: language

Participants reported that the language barrier was a challenge during their domiciliary visits, as the students are diverse, most had to seek friends or neighbors to act as interpreters. Yet even the presence of the interpreters did not solve the problem, as some noticed that not everything that the women were comfortable

disclosing to the relatives or neighbors who acted as the interpreters.

> *"…the problem was the language, she was welcoming, even when we got to her place, she can put on a nice smile, she welcomes you, but the problem is the language, and matters became worse when her sister left, because it was her sister who used to help me to translate, it was tough to interact with her mother" (FG B1).*
>
> *"Most of the students are unable to speak directly to these mothers because the majority of the clients that we see in these facilities speak Luo and most of the students come from different parts of the country, so the only way they can communicate with these clients is through interpreters who can either be family members, relatives or even the fellow students who are able to speak the language. You find that those who are unable to speak Luo might drop a mother and look for those whom they can easily communicate with" (KI 06).*

Sub-theme 1.4: socio-economic factor

It was revealed that socio-economic factors and cost were a big challenge for the mothers and the students who participated in this care. Some women did not have a cell phone or other resources to appropriately care for themselves and their babies. Some participants reported that during some of their visits, the women were not at home as they had gone to the farm to try and fend for their families, even in that early post-natal period. On the part of the students, costs of completing the tasks in terms of financial, social, emotional investment and in-kind contributions were challenging.

> *"…you find out that you want to provide some good services to these people, even at home, pads and so on are not there. These mothers even in the first week, they don't have anything, even nutrition-wise, they lack what to eat, they have to first, work somewhere in the garden, and come back, remember about, exclusive breastfeeding, you're supposed to breastfeed the baby at least every two hours, so they can't provide, that milk to the baby, if they don't really, eat well, hydrate well, rest and so on. It can even expose the babies to infections, like when they use soap used to wash clothes for bathing the babies" (FG C5).*
>
> *"Moving to different facilities and homes would cost us a lot. One could spend up to 20,000 UGX daily, it was too much. I had budgeted the money for transport, but not the extra three days my supervisor told me to add. I cannot leave this mother, I have to follow her up, so I could go on a bicycle because I have exhausted all my money" (FG B5).*
>
> *"You find that some of the students have had to pay, even to transport their mothers and themselves to their communities. And you find the mother does not have sanitary towels, and the students have had to step in. Sometimes they have no food. we recently had a situation where the mother was staying with her grandma. There was no food, so students, together with faculty members, had to contribute money to buy food, to buy clothes for the baby, as well as for the mother" (KI 01).*

Sub-theme 1.5: gender of the provider

Some participants highlighted that being a male midwife constitutes a barrier to their domiciliary care, as some partners and parents-in-law, even after careful explanation of what the care is all about, could not trust them entirely with the women. This mistrust is worsened when the male students are paired with a male lecturer for supervision. One participant reported that his client's partner sneaked into the back room to listen to the midwife's conversation with his wife, even though he declined the initial invitation to be part of the conversation.

> *"The mother and the husband consented in the facility, and they all accepted. But whenever I would visit, the man used to give me some weird, uncomfortable looks and reactions" (FG C4).*
>
> *"The woman's partner was not staying with her, so I could not get his consent. I told her to inform her partner, but I'm unsure if she did. Then he had heard some rumors that there is a gentleman who checks on his partner every morning, so he came only to find me and my supervisor, also a male, he was furious…it took my supervisor nearly an hour to convince him" (FG B7).*

Level 2: interpersonal factors

According to the SEM, the interpersonal levels include all close relationships with social peers, partners, friends, social networks, and family members that can influence an individual's behavior. Participants identified that establishing cordial relationships with the women positively influences domiciliary care. In contrast, significant figures, influences, attitudes and feedback were identified as negatively affecting effective domiciliary practices.

Sub-theme 2.1: relationships

The participants highlighted that establishing a cordial relationship with the mothers during antenatal care (ANC) is crucial for establishing trust to enhance

effective domiciliary midwifery care. Participants who met their mothers during the ANC revealed that it was easy for them to convince the women to be their domiciliary mothers unlike those they met during admission in their first stage of labour.

> *"We delivered many mothers, but few accepted the offer of domiciliary care. Some of these mothers, especially those who are delivered directly, are very difficult. I've realized that the mother I first had an encounter with during antenatal, I didn't have any challenges. She accepted, even when she came and saw me, she was like, hey! Could you attend to me? And everything moved well, she accepted everything I told her, she consented, and the domiciliary was very nice for me, with her and up to home" (FG C5).*

Sub-theme 2.2: significant figures influence

Participants indicated that the significant figures, such as parents-in-law, parents, siblings, and partners, around the women pose a challenge to the care, and the greater the number of significant figures present, the more challenges they encounter. These individuals are have authority over these women, and many cannot withstand their influence. Especially the mother-in-law, as they would always want to do things like cord care the same way it was handled in their days, whether beneficial or not.

> *"On the third day, when I went to visit, I entered the room like this, the smell in the room was not nice, the only thing that came to my mind first was the baby's cord. I said to the mother-in-law, How are you? She said, Fine, I said what did you do? She said, she did not do anything. I said, How about this cord? She said I only put moyao (Shear butter oil) once. That thing was becoming black, you know, that pus-like black thing. It was not nice. Then I started cleaning the cord for them every morning and evening" (FG B7).*

Sub-theme 2.3: feedback from supervisors

The participants highlighted that the supervisors do not always give effective feedback during the visits; they indicated that it would be nice if feedback could be given to them in the absence of the mothers and in a kind way that would not affect their confidence. This also applies to the feedback provided in the books submitted for marking. They revealed that it would be appreciated if the markers would indicate why they fail some aspects in the book so that they can make the necessary corrections.

> *"The way supervisors sometimes correct the students. I had three of my colleagues, where once you mess up, this supervisor could come in there and crush you. Remember that the following day you will return to the same mother who will be like, this person working on me is not competent enough. So, the way they bring their corrections, at least much as someone doesn't know, but again they should put some respect there that this is the same person who will come again, work on the mother, now the mother will be knowing that this one doesn't have content" (FG B3).*
>
> *"This is a course unit that is marked and assessed; it is also a requirement for us to graduate. Those books we hand in should return with proper feedback on areas that should be improved and what is expected, not just marking good and bad with scores at the end. The same applies to the hospital, like you find out that you are a university student, but the one in charge, or the person you're working with, is a certificate holder, and the way they correct you is so bad, maybe out of jealousy" (FG C1).*

Sub-theme 1.4: attitude

The attitude of the women and students plays a crucial role in this activity. The facilitators reported that a positive attitude on the part of the students enhances learning and supervision. While the students reported challenges convincing mothers to accept evidence-based practice, as some of them, especially those who have delivered previously, always want to stick to their old ways of doing things or sometimes portray a 'know-it-all' attitude. There were often elders or more experienced mothers in the community who would offer their advice regarding pregnancy and postpartum that was based on cultural norms and personal experiences rather than evidence

> *"If the students have a positive attitude together with their supervisors, that is the big step towards learning" (KI 05).*
>
> *"So, however much you emphasize exclusive breastfeeding, people are still doing their things in hiding. Then on day three, the baby started having diarrhoea. I asked what else they gave the baby, and they told me they gave the baby honey, because breast milk was not yet enough. So, they were saying honey also protects; they know honey helps to build immunity, and that's why they gave it. So, I had to explain to them, it took me time to explain, and finally, they also understood with me the reason as to why we don't want babies to get another feed apart from breast milk" (FG C5).*
>
> *"I had shown them how to bathe the baby, and I told them not to use soap for now, because they were using some soap, I don't remember the name, but I told them not to use the soap for now. They were*

like No, the baby has to smell good. They were also overdressing the baby, so that the cord was not given time to dry up. I told them you take care of the baby's cord with a saltwater solution. I am telling you, the mother refused, so every time I could go, it's more like an argument between me and the mother, so the baby was having many heat rashes. On the seventh day, the cord had not yet fallen off. I took it on myself to clean the cord in the morning, during lunchtime, and even in the evening. The supervisor was like I am going to give you some more days until that cord dries off very well" (FG A6).

Level 3: community and social factors

Community-level factors are social beliefs, religion, norms, schools, workplaces, and neighborhoods where social relationships occur. Culture was identified at the community and social levels as negatively influencing effective domiciliary practices.

Sub-theme 3.1: culture

According to the participants, culture greatly influences domiciliary care, as there are so many cultural observances around childbirth in Uganda. Beneficial cultures are encouraged, such as not bringing a newborn baby to public places until after some days postnatally. Still, mothers are usually advised to take the babies back to the health facilities if there are any issues. In this area, mothers are not allowed to touch the waist of a boy child till after three days postnatally, as touching the waist is said to lead to erectile dysfunction and infertility.

"In this region, when a baby boy has not yet passed three days, the mother doesn't hold the baby's waist, and if the mother is alone, it can pose a challenge to proper attachment and breastfeeding" (FG C4).

"When we have got the physiological jaundice because of the culture here that a baby is not supposed to get out of the house for 3 to 5 days because we teach them about taking the babies out in the sun, early in the mornings and in the evenings, but the culture says no. Also, the culture of the mother of a boy child not allowing them to touch the waist of the baby affects breastfeeding, especially in mothers who are delivering for the first time and those with no one to support them" (KI 06).

Level 4: institutional and policy factors

The institutional and policy factors are conditions of a system, such as the educational or health care system, policies, and government that encourage or inhibit domiciliary care. At this level, four factors of resources, supervision, time constraint and environment, were identified. Factors of resources and time constraints were identified as negatively affecting effective domiciliary practices.

Sub-theme 4.1: supervision

The participants appreciated the supervision they received from the staff at the facility and the support from lecturers during home visits. Supervision helps boost students' confidence. During supervision, they are guided on how to handle the mother and baby, which improved their midwifery care.

"That supervision encouraged us because you know you're not alone and you're also aware that anything that transpires, like you have somebody you are accountable to, you ask your supervisor and then they tell you what to do" (FG A5).

"Big thanks go to my supervisors, who taught me a lot during my practice. They used to come so that they could check on the mother and see how I was providing services to them. I learnt a lot from them" (FG C2).

"...the support from the health workers that are within the maternity ward, the fact that they help them even when they find challenges during the delivery of these mothers, they give them a hands-on support and supervision to proceed and conduct these deliveries" (KI 04).

Sub-theme 4.2: environment

The participants attested that the availability of a facility with a conducive environment is crucial for the students' and women's domiciliary midwifery care. A conducive environment enhances learning and reduces errors and mismanagement. They revealed that the staff at the health facilities should be approachable and friendly.

"I remember when we went for domiciliary, those in-charges from different hospitals were called. We had an orientation with them, but when we resumed, we could not interact with some of them. At a point, some of them became harsh. You even fear consulting with them. We need a conducive environment for you to work and learn. In another facility, they provided a nice environment and some of us could even spend up to 24 hours straight in the facility before going back to our residence" (FG B5).

"the availability of a health facility - a regional referral that has a high volume of cases, where the students are able to get, particularly the normal cases that come in, which the students, and also having another two sites which are Health Centers are key

areas where students easily get the clients that they need to follow up within the recommended radius of distance for following up" (KI 01).

Sub-theme 4.3: resources

Some students revealed that the availability of material resources like the personal protective equipment and other equipment required to deliver care to women at the facility and sometimes from the training institutions enhanced the provision of domiciliary midwifery. They revealed that in most cases, they also carry with them these resources during home visits.

Our work will be easier with all the necessary equipment and PPE. We also have our vital signs equipment with us all the time." (FG C6).

On the other hand, the lack of transportation resources for supervisors and students to visit the homes of the clients was reported as challenging for the students and their supervisors. Students are made to take women within a specific kilometer radius and can even be made to drop a mother if the supervisor feels that the distance is too far for them.

"then the other thing was about the distances, because some students were made to drop some mothers, like supervisors used to tell us that, now this kind of distance, this mother you are going to drop them, not minding about the time you spent with them, and also for the days you've been visiting these mothers, now like for example, they used to come around for the first time to visit the mother, on the third day, now the supervisor comes, you've visited this mother for like three consecutive days, and the supervisor is like, this is a very long distance, you have to drop this mother, and get another mother, really it was too hectic. If we are also provided transportation means that will take students to the women's home and not just to the facilities" (FG B1).

"you realize that much as the university transports students to and from the hospital, it's very hard to support the individual student on every visit of their mothers for the seven days for the three mothers that each student has. Some students have had, have had an experience of even dropping off their mothers when they learn that this mother comes from a distant area where they cannot afford to." (KI 03).

Sub-theme 4.4: time constraints

Insufficient time was another identified challenge. The students are divided into groups of five in each facility, and each group of students is allotted two weeks in the hospital maternity ward to identify and care for three individuals during the intrapartum period. After two weeks, another group is sent to the same facility, and sometimes the first group may not have delivered all three mothers when the second group arrives. The lecturers reported that the 8 to 10 weeks allocated for the entire cohort is not adequate, while the students reported that the two weeks allocated for each student to identify and care for three mothers were insufficient, leading to the overcrowding of the health facilities. This results in students spending 24 h at the facilities in a bid to deliver all the required mothers.

"You find they give us one week and a half or two weeks. But you cannot get three mothers in that stipulated time. And then you find you are just under pressure" (FG A4).

"So, people in the first group might still be in the hospital after two weeks, but when the second group arrives, almost all those who were in the first group are still looking for mothers. And so, you will all be competing for the same mothers, and there would be many of us in the hospital; you find 10 people there, implying that you may not get any mother that day. The following day, you find 10 people again" (FG A5).

"The biggest issue would also be the element of time, that sometimes the 8–10 weeks allocated is not enough, if the class is big, it is not quite adequate, because then you have to divide the time among the groups" (KI 03).

Discussion

The current study's findings revealed that many factors influence domiciliary midwifery practice positively and negatively, though barriers are greater than enablers. The findings were presented based on the SEM and showed that the factors are mainly at the individual and institutional levels. Data from both groups of participants complemented each other, except for the interpersonal level, where data only came from the students. This may be because they are the ones at the receiving end of the relationship between the lecturer, the facility staff, and the women.

The participants highlighted that knowledge is a key individual factor that positively influences domiciliary care, as students have to be equipped with the right skills. A well-trained and educated health workforce is vital for maternal and child health [6]. Women's trust in midwives' instruction is critical to effective domiciliary care, while women's 'know it all' attitude is a barrier. The socioeconomic factor is another key hindrance for

both women and students at this level. This financial status affected the woman's ability to care for the newborn, as some women did not have the most basic necessities to take care of themselves. This is corroborated by the notion that most preventable maternal and child mortality is rooted in poverty and inequality [1]. The students attested that the cost implication of engaging in this care was a serious challenge. Most students relied on parental support for commuting to their clients' homes, and due to that, the care was said to be financially draining. This is consistent with Australian studies where student midwives highlighted the travel-related cost as an impediment to their community midwifery experience [15]. These cost-related barriers could be mitigated by ensuring midwifery schools allocate adequate funding in their budgets for this activity. There are also gender-related barriers for male midwives, as there was mistrust from the partners and in-laws. This mistrust is because male healthcare workers attending to women during childbirth is not very culturally acceptable for many African communities and some religious groups. This echoes the findings of another Ugandan study exploring the experience of mothers who were assisted by male midwives during childbirth, which revealed resentment from the women's spouses [21]. These gender issues could easily be remedied by ensuring that male students are paired with female lecturers.

At interpersonal levels, establishing rapport and a good relationship between the midwife, the woman, and her family enables effective domiciliary practice as the midwife is eagerly welcomed and trusted. This corroborates the findings of an Australian study, which indicated that building a relationship between the woman and the student within the continuity of care experience is of primary importance in enhancing care and students' learning [22]. This could be strengthened by restructuring the domiciliary program to possibly an all-year program where students start with mothers in the antenatal period, birth, and postnatal follow-up. Many students emphasized the inherent difficulty they face on how negative feedback is given to the students, both at the facilities and by the supervisors in front of the women. This leads to low self-esteem and reduces women's trust in the students as skilled experts. These findings are consistent with an Australian study where student midwives reported a professional environment but inconsistency in the teaching capabilities and negative treatment of clinical staff, and their influence on their experience [9]. The influence of significant figures in managing the mother and babies also hinders care. In several communities, elders exert influence on mothers in this area. They are seen as wise and experienced and are also respected, these influence affects the care.

Culture is another hindrance to effective domiciliary care at the community and social levels, as there are some non-beneficial cultural practices. Such cultural practices as dressing the cord with non-sterile substances, routine administration of honey to the neonate, and mothers not allowed to hold the waist of a male child in the first few days of life, which is the period of breast milk initiation and establishment. This can affect proper attachment and positioning, which can predispose the mother to cracked nipples, as in so many instances, these mothers are on their own without support from relatives. Not allowing a newborn to go outside the house, while this is a beneficial cultural practice for a well neonate, becomes an issue for those with jaundice. It causes hindrance in exposing the babies to morning and evening sunlight when they have physiological jaundice. Most of these women are so adamant about these cultural practices, and only a few learned ones can be flexible with some of these practices. This is in line with other studies, which revealed that cultural beliefs and family influence affect women's transition in the early postnatal period and their nutrition [13, 23].

At the institutional levels, resources act as hindrances, such as transport availability, to help students easily access the women. Students were required to facilitate their movements to the women's homes throughout the period, which caused a financial burden on them. Transportation barriers were also reported among community midwives in Pakistan [24]. The participants further reported that the allocated time for this care is inadequate for both the facility and community aspects of the activity. This is consistent with the findings of an Australian study where student midwives highlighted difficulty in time management and workload, which resulted in stress and pressure to complete the requirement in record time [10]. The participants highlighted the importance of students' supervision during this activity, as most students reported that it assisted their learning and confidence. This is consistent with a study among midwives, which revealed that clinical practice supervision increases confidence [25].

Strengths and limitations of the study

To the best of our knowledge, this is one of the first studies to explore the perceived factors influencing domiciliary midwifery practice among midwifery students and lecturers. FGDs and KIIs were conducted through face-to-face interviews, which allowed for a deeper exploration and triangulation of data.

The use of the purposive sampling method may potentially affect the transferability of the study findings. This study was also limited to students and lecturers from one university in Northern Uganda who participated in the continuity of care.

Conclusion and recommendations

This study offers valuable new insight into the factors influencing domiciliary midwifery care practice, which offered ideal holistic care in the early postnatal period, a critical time for mothers and newborns. While this ideal care is critical for both, many avoidable factors hinder it at various levels. The study identified six enabling and eight constraining factors that impact the effectiveness of this practice. To ensure women benefit from this essential continuity of care, all stakeholders, including students and lecturers, must work collaboratively to strengthen the enablers and eliminate the hindrances. Nursing and midwifery training institutions in the country are urged to adopt and sustain this highly valued model of care to promote equality in healthcare delivery to this vulnerable population.

Supplementary Information

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Supplementary Material 1.

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Authors' contributions
Conceptualization, RI, FA, WCU, RFM; CN Methodology RI; WCU, and FA, Software, WCU.; Validation, RI, FA, WCU, JM; Formal analysis, WCU, and RI; Investigation, RI, FA, WCU, RFM; Resources, AGA, IA, and BA; Data Curation, FA, WCU, RI; RFM Writing – original draft, FA, WCU, and RI; Writing – review and editing, FA, WCU, RI, RFM, JM, CKN, AGA, IA and BA; Visualization, WCU, and JM; Supervision, WCU, RM, AGA, CKN, IA, and BA; Project administration FA, WCU, and RI.

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Data availability
Data will be made available upon reasonable request by the first author.

Declarations

Ethics approval and consent to participate
This study was conducted according to the guidelines of the Declaration of Helsinki and approved by the Lira University Research and Ethics Committee before data collection (Ethics number LUREC-2023-56). Participation in the study was voluntary, and informed consent was obtained from all participants by the last author before the interviews. All the women were informed about confidentiality and could withdraw their participation at any time.

Consent for publication
Not applicable.

Competing interests
The authors declare no competing interests.

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