



## Birth environment experiences of postnatal mothers; An exploratory qualitative study in Nalerigu, Ghana

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### ABSTRACT

**Problem:** While there are many studies on women's childbirth experiences globally, there is limited studies on childbirth experiences in Ghana especially in the North East Region.

**Background:** The environment where women give birth is important, influences the birth process and outcomes of mother and neonate. Current understanding of influence birth environment and childbirth experiences in the northern parts of Ghana has not been fully explored.

**Study aim:** Our study aimed at exploring the birth environment and mothers' childbirth experiences in North-East Region, Ghana.

**Methods:** An exploratory-descriptive qualitative (EDQ) study involving thirteen (Tzeng et al., 2017) purposefully selected postnatal mothers in Nalerigu was conducted. Using a semi-structured interview guide, individual face-to-face in-depth tape-recorded interviews were conducted until data saturation. Interviews were transcribed verbatim and analysed using thematic analysis. Two (Afulani et al., 2019) main and 5 sub-themes emerged.

**Findings:** The findings of the study revealed that birthing environment had an influence on mothers' experiences with regards to comfort, and privacy. However, mothers reported that the environment did not offer options for choice to alternative birthing positions. It was observed that these environmental factors had both positive and negative effects on mothers during childbirth.

**Discussion & Conclusion:** Study findings showed that the birth environment is associated with comfort, privacy, service provision satisfaction and desire for facility delivery and limited involvement in the choice of birth position. Though most of the participants indicated favourable birth environment and satisfactory services, it is important to address the concerns of the few who had negative experiences during labour to promote respectful maternity care. Antenatal education on birth positions is recommended.

### Statement of significance

**Problem:** The birth environment and the care provided during the labour process are important elements of the overall childbirth experience. Although this has been explored by several studies across the globe, there seems to be inadequate studies on the birth environment and women's experiences with childbirth in the Northern parts of Ghana.

**What is already known:** The environment in which clinical care is delivered significantly impacts the wellbeing and safety of

pregnant women. Alternative birthing environments, as compared to traditional institutional settings, are associated with more positive outcomes, including fewer medical interventions, higher breastfeeding rates, and increased patient satisfaction.

**What this paper adds:** When birth environments promote comfort, privacy, and respectful care it enhances childbirth satisfaction and desire for facility delivery. Additionally, there is the need to involve women in the choice of birthing position to maximise their satisfaction. The study equally bridges the knowledge gap on birth environment, labour, and childbirth satisfaction in northern Ghana.

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## Introduction

The birth environment where women give birth is an important factor that influences the birth process, and the general health outcomes of the mother and neonate (Bohren et al., 2019; Afulani et al., 2019). The birth environment and the care provided during the labour process are important elements of the overall childbirth experience, highlighting the quality of maternal healthcare and emphasizing the principle of respectful maternity care in both maternal and neonatal healthcare. The physical space where childbirth takes place significantly impacts a woman's labour and birth experience. Different studies have highlighted the importance of such factors; privacy, cleanliness, comfort, and access to support personnel in creating a respectful maternity care environment (Bulto et al., 2020; Dzomeku et al., 2022; Asefa, 2021). Previous studies have shown that a birth environment that is supportive during labour is important to achieve favorable maternal and neonatal health outcomes (Stark et al., 2016; Foureur et al., 2010). The birth environment and the birth process experiences of women influence their mental health and birth processes (Olza et al., 2020; Kazemi et al., 2023; Nielsen and Overgaard, 2020). An unfavorable birth environment has been associated with increased stress and anxiety during labour which can lead to slow progress of labour, low Apgar score of the baby and increased need for sedatives during labour (Molgora et al., 2020; Smorti et al., 2019; Tzeng et al., 2017). Stress in the birth process is associated with postpartum depression, disturbed orexinergic system, mother-infant attachment and late initiation of breastfeeding (Bayri Bingol and Demirgoz Bal, 2020; Witteveen et al., 2020; Beck and Watson, 2008).

A non-abusive birth environment creates a respectful atmosphere that contributes to pregnant women's satisfaction with labour and childbirth (Martins et al., 2021). In birth environments where women perceive safety, security and protection, better health outcomes and mental health are promoted through significant reductions in stress during labour (Olza et al., 2020; L Goldkuhl et al., 2022). A well-designed birth environment is characterized by privacy, convenience, control, and comfort for women in labour, and ensuring easy access to basic amenities such as toilets and baths. Availability of such amenities does not only promote respectful maternity care but addresses to some extent healthcare disparities (Asefa, 2021). When the birth environment is designed to enhance comfort, mothers are more likely to experience a sense of safety and confidence during the childbirth process and foster good satisfaction (Hussein et al., 2020).

A birth environment that is unsupportive and unfriendly during labour and birthing can influence pregnant women's decision on where to seek care and delivery. Some pregnant women have limited choices in deciding where to give birth due to their locations and/or resources available. However, of importance here, is the safety of the woman and the neonate and a sense of safety in the environment (Foureur et al., 2010). Some studies have attempted to look at experiences of women during childbirth in Ghana (Millicent Dzomeku et al., 2017; Dickson et al., 2016; Afaya et al., 2020; Mensah et al., 2014). However, these studies are concentrated in the southern parts of Ghana where most maternal facilities are well equipped and have adequate skilled healthcare workers. Current understanding of the birth environment and pregnant women's experiences in the northern parts of Ghana has not been fully explored. The northern parts of Ghana is known to have the highest maternal mortality rates (Jakperik, 2023; Ameyaw et al., 2020; Apanga and Awoonor-Williams, 2018; Sumankuuro et al., 2017). Our study therefore aimed at exploring the birth environment and mothers' satisfaction on childbirth experiences in northern Ghana. Using the Donabedian Model of Quality Health Care which provides a conceptual framework for the evaluation of health care quality offered a means for exploring the childbirth experienced of postnatal mothers. The three constructs of the model; structure, process, and outcome guided the objectives of the study, data collection and analysis. Findings from the study will benefit the planning of labour ward layouts and structures to ensure that the birth environment promotes respectful maternity care.

Similarly, the findings of the study are important for alternative birthing positions, and the promotion of a sense of choice and flexibility, improve maternal health outcomes and promote positive birthing experiences for mothers during childbirth. The study equally bridges the knowledge gap on birth environment, labour, and childbirth satisfaction in northern Ghana.

## Methods

### Study design and setting

An exploratory-descriptive qualitative (EDQ) study design was adopted since it was helpful in studying a phenomenon that had not previously been studied extensively within the context. The study was conducted at the Baptist Medical Center (BMC) in Nalerigu. BMC is a mission hospital, established in 1981 and by far the largest health facility in the North-East Region, Ghana. Purposive sampling method was used to recruit 13 postnatal mothers aged 18 years and above, who delivered at BMC and were within 6 weeks after delivery. Recruitment and data collection was conducted between March to December 2023. To reach potential participants, midwives at the postnatal clinic of BMC helped with the identification and recruitment of eligible participants.

### Data collection

The study employed a purposive sampling method to select participants. The purposive sampling was used to facilitate the recruitment of participants that can provide rich and pertinent information for the study and are within the 6 weeks of post-delivery.

The data was collected using a semi-structured interview guide, developed from a series of consultations with midwives and a review of previous studies in Ghana and elsewhere and in line with the study objectives (Afaya et al., 2020; Amoah et al. 2022; Dickson et al., 2016; Kazemi et al., 2023; Dzomeku et al., 2017; Smorti et al., 2019; Stark et al., 2016; Tzeng et al., 2017). The interview guide was initially developed in the English language and subjected to peer and expert reviews and subsequently translated into the local dialect (Mampruli) and retranslated into English by an expert. The guide primarily consisted of the socio-demographic characteristics of the study participants and questions on the birth environment. Prior to the commencement of data collection, the researchers visited the birth environment to familiarize themselves with the setting. This helped them to relate with participants accounts. Prior to the data collection, the interview guide was pretested in similar health facility, in both English and the Mampruli languages. This offered the researchers an opportunity to address discrepancies and challenges inherent in the study protocol (Hennink and Kaiser, 2022).

The interviews were conducted among 13 participants and saturation were achieved during the 13th participant interview. The saturation was met when the interviews did not yield new information or themes from the responses given. According to Hennink et al. (2022) for homogeneous population, saturation could be achieved through interviews between 9 and 17 participants.

The interviews were conducted in person by the researchers and involved a direct interaction between the researchers and the participants. Averagely, the interviews lasted between 45 and 60 min, offering ample time to elicit in-depth information from participants in a conducive environment. The interviews were audiotaped, and notes taken to enhance the data collection process.

### Trustworthiness

To ensure quality and consistency of the data, the criteria by Lincoln and Guba (1985) to promote trustworthiness was adopted which included; credibility, transferability, dependability and confirmability. The researchers conducted the study by meticulously practicing pre-testing of study protocol in similar setting and ensuring reflexivity by

acknowledging the role of the researchers and prior knowledge of the subject area. Peer and expert review were used to critically assess the study protocol that it met the study objectives. Member checking and prolonged participant engagement were used to ensure that the researchers adequately captured the responses of participants without inaccuracies and misrepresentation. Dependability of this research is mirrored to the consistency and reliability of the findings. Data saturation was employed to ensure that adequate information has been solicited to answer the research objectives and the inter-coder reliability was conducted by two researchers to arrive at similar or same themes from the interviews conducted and achieve consistency. Confirmability was employed to ensure that the findings of the study are reflective of the narratives and perspectives of the participants devoid of potential biases from the participants. The transferability of the study was equally ensured by designing the study protocol in line with previous studies elsewhere and in Ghana and complemented with series of consultations (Forero et al., 2018; Ahmed, 2024).

**Data analysis**

Data analysis was conducted simultaneously with data collection using thematic analysis, a method for identifying patterns and themes in qualitative data. The process began with the researcher analyzing the data from the first interview. Following each interview, the researcher manually transcribed the audio recording verbatim. To ensure accuracy, the manual transcripts were cross-checked by reading and listening to the audio recordings simultaneously. Once all audio recordings had been transcribed, the data was then subjected to thematic analysis.

Thematic analysis offers a clear and rigorous approach to managing data. As described elsewhere (Braun and Clarke, 2008), thematic analysis is a fundamental skill in qualitative research and serves as a useful tool for gaining a comprehensive understanding of the data. Braun et al. (2008) presented a comprehensive six-step framework that proves highly valuable for conducting thematic analysis. These steps include the researcher’s process of becoming acquainted with the data, generating initial codes, identifying themes, defining, and naming those themes, and eventually producing a report.

In practice, the initial interviews underwent meticulous transcription, followed by thorough and repeated readings to develop a holistic understanding of the transcript content. This initial immersion in the data guided subsequent interviews, improving their quality. During the transcript review, the researcher actively sought recurring ideas, thoughts, and words within the data, subsequently organizing them into distinct units known as codes. This coding process was applied consistently across all transcripts. As new codes emerged, they were integrated until all transcripts were thoroughly coded. Once coding was complete, an examination of the relationships between codes allowed for the grouping of similar codes into broader themes and sub-themes. The researcher then continued to refine and expand on emerging themes and sub-themes through an iterative process. After a careful review of these themes, those that were consistently present across multiple participants were further categorized and analyzed.

**Results**

*Sociodemographic characteristics of participants*

A total of 13 participants were recruited for the study. Majority of the participants were married (92.3 %) and most were in the age groups of 20–25 years (38.5 %). Majority of the participants had one child (61.5 %), unemployed (53.8 %), tertiary education level (84.6 %) and Islam (61.5 %) (Table 1). The researchers acknowledge that, although they did not intentionally set out to recruit only educated women for the study, all the 13 participants who consented to take part either had secondary or tertiary education.

**Table 1**  
Sociodemographic characteristics of participants.

Variable	Parameter	Frequency	%
Age	20–25	5	38.5
	26–30	4	30.7
	31–35	4	30.7
Marital Status	Single	1	7.7
	Married	12	92.3
Parity	1	8	61.5
	2	5	38.5
Occupation	Public service	5	38.5
	Self-employed	1	7.7
	Unemployed	7	53.8
Level of education	Secondary	2	15.4
	Tertiary	11	84.6
Religion	Christianity	5	38.5
	Islam	8	61.5
Ethnic group	Mamprusi	4	30.8
	Kusasi	3	23.0
	Ewe	2	15.4
	Frafra	1	7.7
	Kasem	1	7.7
	Chokosi	1	7.7
	Busanga	1	7.7

*Study themes*

Participants described the birth environment and their satisfactory experiences received during their labour. Two (Afulani et al., 2019) main themes emerged with five (Asefa, 2021) subthemes from the interviews. The themes were deductively identified based on participant’s subjective recount of their experiences in the labour ward and are in line with the Donabedian Model of Quality Health Care (Table 2).

*The physical birthing environment*

The influence of the birthing environment has been found to have significant influence on the childbirth experiences of women. An optimal birth environment in a health care setting is one that meets the needs of the labouring woman, providing her comfort and safety, ensuring that her physiological and emotional needs are met during labour and birth. In response to the research question “What influence does the birth environment have on mothers in the BMC of the East Mamprusi municipality?” The major theme that emerged was “Influence of the physical birthing environment”.

The physical environment in which childbirth takes place has an influence on the wellbeing of mothers and their entire childbirth experiences. The sub-themes under physical birthing environment that was common across all participants’ experiences centered on the presence or absence of comfort, privacy, and choice of birthing positions

*Comfort*

Most of the participants (N = 8) indicated that the labour ward environment was conducive to making them feel comfortable and safe. However, N = 5 of the participants had different experiences with regards to comfort. They felt the place was not spacious enough to allow them free movement when they experienced the labour pains.

**Table 2**  
Emerging themes.

Themes	Subthemes
Influence of the physical birthing environment	<ul style="list-style-type: none"> <li>• Comfort</li> <li>• Privacy</li> <li>• Choice of birthing position</li> </ul>
Perception of care received	<ul style="list-style-type: none"> <li>• Satisfactory and unsatisfactory care</li> <li>• Desire for facility delivery</li> </ul>

Some participants in narrating their labour ward experiences had this to say;

*“The environment is a clean place. The delivery rooms were so close to each other and the theatre as well, it made me feel safe and comfortable that if anything should happen, the theatre is close by. The place where I laid, I could comfortably do anything. There was space that allowed me to move freely around. I was given a private room because of my job” (P002).*

*“When I arrived, the labour ward was nice to me. The first labour ward was occupied, so I was sent to the second one to be examined. When I entered, the place was very neat and the room was cool, so I felt very comfortable” (P008).*

*“The delivery room was very nice. As for that place, it was good when I entered, there was AC. The way I was sweating, as soon as I entered there, I was like .ooh this place is cool” (P0011).*

Although most participants felt comfortable, others did not. Some participants described how the lying-in ward was so congested and restricted their movement. Also, ventilation was poor, which made them feel so uncomfortable during their childbirth process. It is worth noting that these participants were at the labour ward at different periods.

Participants who did not find the environment comfortable had this to say;

*“When I arrived there, the place (lying-in ward) was choked and some patients, pregnant women had to lie on the floor before giving birth. And then the place let me just say, there was no ventilation, because of the number of people, there was heat everywhere. Actually, the place (lying-inward) was congested, there was no space for free movement. And so, I was not having the luxury to walk around because when you want to get down, there is someone lying there, when you walk this way there is someone there as well” (P001).*

*“When I arrived there, the environment outside was ok, but the inside was not ok for me because where I was lying in the admission room (lying-in ward), there were two fans near my bed which were not working, so due to that the weather was not conducive for me. I was sweating seriously. Also, movement there was somehow restricted, you can't even move freely in there unless you come out to the entrance” (P007).*

*“The place (lying-in ward) was too busy, there was no empty bed, so they laid my rubber on the floor for me to lie on. I was anxious because of how the clients were lying on the floor. Many people were lying on the floor by then and no place to even pass. The place was congested. So, I was like arhh, this place is not good for me. The structure is good but despite that they lack beds, and the place is small as compared to the clients they have been receiving” (P0011).*

### Privacy

Participants spoke about the privacy the environment provided. Most of the participants  $N = 9$  described the labor and delivery wards as a place of privacy. They privacy was experienced mostly in the delivery room where examination and delivery took place rather than the lying-in where the women laboured.

Participants narrated their experiences as;

*“The delivery room was not all that big, but it was arranged properly. There were two delivery beds. Yeah, but there was no washroom in there, it was in a different place. There was privacy there too because it is just you and the midwife and the door is always closed, so it was ok” (P001).*

*“I was in the staff room (side ward), I felt there was more privacy there because I was not sharing the room with any other person. There was space for me as well. So, with that, I would say it was more private” (P002).*

*“The place was well organized, yeah I was ok, and there was privacy in the delivery because they always close the door” (P003).*

*“As for the delivery room, it was good. And there were two delivering beds, and I can say there was privacy because only you and the midwife will be inside and they always closed the door” (P004).*

*“The delivery room was very nice. Everything was intact and there was privacy there too. Though there are two delivery beds, they used curtains to divide the room, so the person here will not see the other” (P0011).*

Some of the participants who delivered at the health facility, however, did not experience the privacy that was described by others. Some of the participants (4/13) described the labour and delivery ward as a place that lacked privacy.

*“The labour ward (lying-in ward), there was no space, it was very congested and no privacy. When you are there, other women there will just be looking at you. The kind of pain you feel when you are in labour, you will not feel comfortable being outside and inside too you cannot move freely. So that one affected me because you will be outside, and people will be looking at you” (P005).*

*“In my opinion, there is no privacy in that delivery room, there are two delivery beds for two clients and though you maybe there alone with the midwife, but another person too is there and is seeing you wailing and is looking at you. You see that, I was thinking at least something should divide the place so that the other person too is in her corner” (P006).*

*“Hmmm, it was crowded and there was no privacy in the admission room (lying-in-ward). We were many there and even some of our relatives too were there and we were just looking at each other. So, I will say there was no privacy” (P008).*

### Choice of birthing positions

Most of the participants described positions they used during the birthing process and according to them, the positions they used for birthing were determined by the midwives. They were not given options to choose from. One of the participants added that even the nature of the delivery room was not appropriate for other birthing positions either than lying on your back (lithotomy) to deliver.

Here is what participants said about their experience;

*“For positions to deliver, it was a one-way position, which is lying on your back, so you must just lie on your back. That was the only position” (P001).*

*“For the delivery position, it was automatic or what will I say, the way it is, only two beds, the way they just put the beds, you lie on it like that. You are not allowed to squat and deliver, I was even lying down and asked them, if they could deliver me on the floor and they said no, I should lie on the bed” (P005).*

*“The delivery bed was good, though it was high, they would just ask you to lie on your back. That was the most common position for everybody. The nature of the ward and the beds too will not allow any other position aside lying on your back” (P006).*

*“I was asked to lie on my back to deliver, that was what they told me. I did not see anyone in a different position, and I also did not ask if I could use any other position” (P007).*

*“I was not given a chance to choose a position of my choice” (P009).*

*“I laid on my back on the delivery bed to deliver” (P0012).*

### Perception of care received

Participants had varying perception about the care they received. Some were of the view that they were satisfied with the kind of care received. Others also indicated that they were not satisfied with the care

they received. These perceptions emerged as satisfactory and unsatisfactory, and desire for facility delivery.

#### Satisfactory and unsatisfactory

Participants described their satisfactory and unsatisfactory experiences about their labour care.

Here is what they said;

*“Rating my satisfaction on a scale of one (Bohren et al., 2019) to ten (Nielsen and Overgaard, 2020), I will give 8/10. It was a positive experience, because they were explaining things to me and encouraging me not to push when it was not time, and I should not lift my buttocks, so because of that, this time I did not get tears like the first time. And I was ok, I was fine” (P006).*

*“I can boldly say it was 10/10 satisfaction for me because they (midwives) were people I know, so due to that the care was good. Well, the whole labour process was positive for me except for the pain. The labour pain was not easy, I regretted for that pain because I was not expecting it to be that serious” (P007).*

*“I will rate my satisfaction as, 9.9/10. Mmmm, my experience was positive. It was just amazing. Yes, it was positive because I delivered safely without blood transfusion and without operation too, you know they normally say sometimes if you are going to deliver they will give you infusion, I did not go through any of that” (P004).*

Few mothers, however, stated not being satisfied with the kind of care received, hence wouldn't wish to deliver again at hospital and others also had a mixture of positive and negative experiences. Here is what they stated;

*“I was not all that satisfied, I will give 5 out of 10 for my satisfaction, because of how they behaved at a point, yes, shouting on patient here and there. At a point, a midwife can even get angry and then leave the patient for another midwife to attend to. Erh the way they were shouting and talking to patient, it was not satisfying. It was also a negative experience for me because I lost a lot of blood, and I had black out thinking I was going to die. So, I think the experience was actually unforgettable, it was actually painful, very painful. The way they treated me, the midwife did not have that patience” (P001).*

*“I will rate 5 out 10 for satisfaction. It was both positive and negative. It was positive because when I came, how they welcomed me, and everything was positive for me. But in the labour (delivery) room, what went on inside there was negative for me, it was not good at all for me because I was left to deliver all by yourself without a midwife attending to me” (P0012).*

*“For my overall assessment, I think it was both positive and negative, I will give 7 out of 10. It was positive because after all, in the end I had my baby. But the negative part was the time they cut me, the way they cut me, I was not happy. They did not listen to me when I told them the baby head was coming, they did not mind me and I was there pushing aarh, >30 mins and my energy all was off” (P009).*

#### Desire for facility delivery

Participants were questioned on their opinion about delivering in the hospital again. The majority of the participants ( $N = 9$ ) said they would be comfortable to deliver again at the hospital because they were happy with the kind of care they received, and they feel it is safe to deliver at the hospital. Respondent's belief that delivering at the hospital could help with early identification and management of complications compared to delivering at home.

Expressing their opinions, they stated;

*“I would always want to deliver in the hospital because of all I had at my disposal, I think I would do that in my next pregnancies, God willing that is where I would choose to deliver” (P002).*

*“Yeah sure, I will be comfortable to always deliver in the hospital, because of how they (midwives) cared for me, I cannot best tell what will happen during birth if I stay at home” (P003).*

*“Given another opportunity, I will be comfortable to deliver in hospital, because you know sometimes after delivery, you can get complications like severe bleeding, and being in the hospital it will be easy for blood transfusion, yes it will not be like you have to go and search for transportation to go on referral” (P007).*

*“Yes, I will be comfortable to deliver in the hospital, because if you are to deliver in the house who knows whether after delivery you will bleed or not, so you have to go to the hospital so that they will take care of you. If you cannot deliver by yourself, they will do you C/S but in the house, you will not see all these things” (P0013).*

Few of the participants had different opinions about being delivered again at the hospital .

This what the participants said;

*“Hmmm, to deliver in the hospital again, if I can deliver at home, I think I will be delivering at home, if there is a better person to assist me to deliver at home I will deliver, and then carry my baby there, no problem. Because, some of them will be shouting at you and you become more furious on yourself. That is why a lot of ladies deliver at home” (P009).*

*“For this place no, I will not want to deliver there again, maybe elsewhere, the way they communicate with patients is very poor” (P001).*

One other participant said she was open to the idea of delivering at the hospital again, provided that the specific midwives who had attended to her during her previous experience were not on duty during her next delivery. She said;

*“I will be comfortable to deliver there because my next delivery, it could be that those that attended to me would not be there again, because they are on different shift, it could be that they will not be on duty on that day. So, I am okay I can deliver there again, I want to deliver there again” (P0012)*

#### Discussion

The study explored the birth environment's influence on childbirth experiences of postnatal mothers in a referral health facility in the North-East Region, Ghana. Five sub-themes emerged from the study's findings: comfort, privacy, satisfactory and unsatisfactory care, desire for facility delivery and choice of birth positions. Regarding comfortability of the birth environment, majority of the participants ( $N = 8/13$ ) were of the view that the environment at the labour ward was conducive making them feel comfortable and safe. This finding is positive for quality healthcare delivery particularly in poor healthcare resource settings as northern Ghana. Historically, the northern parts of Ghana have been associated with poverty with huge disparities in healthcare provision compared to southern Ghana (Id et al., 2023). Previous literature has underscored that environment that is secured, safe and comfortable is a precondition for providing optimal healthcare (Berg et al., 2019; Reiling et al.). However, the health environment can be observed and experienced in different ways by users (Berg et al., 2019). The study observed conducive birth environment by majority of the participants, however, some (5/13) of the participants made assertions that suggested otherwise. Addressing the challenging issues of unconducive birth environment observed is important to achieve the objectives of respectful maternity care. Previous studies have shown that the birth environment significantly influence women's experiences during birth (Kazemi et al., 2023; Reiling et al. 2019; Nilsson et al., 2020; L

Goldkuhl et al., 2022). Some studies have suggested that the ideal birth environment in a medical facility is one that responds adequately to the labouring woman's needs, offering her security and comfort and making sure her physical and psychological needs are satisfied during the labour and the delivery process (Reiling et al. 2019; Nilsson et al., 2020).

Observance of privacy during labour and childbirth has been reported to have a positive outcomes in some randomized controlled trials and reviews (Berg et al., 2019; Reiling et al. 2019). Most of the participants (9/13) described the labour and delivery wards as a place of privacy. Accordingly, the privacy was experienced mostly in the delivery room where examination and delivery took place rather than the lying-in where the women laboured. Other studies have equally highlighted privacy oriented birth environments are ideal to enhance comfort and safety during childbirth through the release of endorphins and oxytocin to facilitate the birth process (Dzomeku et al., 2022; Kazemi et al., 2023). A mother can concentrate on giving birth to her child if she feels more secured and unaffected by the prevailing environmental conditions (Bulto et al., 2020; Dzomeku et al., 2022; Kazemi et al., 2023; Nilsson et al., 2020). Some studies suggest that ensuring privacy in the birth environment extends beyond simply not being observed, but also involves not being heard. It includes being able to move freely, speak, and dress comfortably (Andrén et al., 2021). Likewise, offering protection and enabling the mother to fully engage with her delivery experience, a birthing chamber that maintains privacy by locking doors and restricting access to outsiders also fosters a sense of comfort in the mother. Creating a private space in the labouring room fosters safety and psychological health (Andrén et al., 2021). Providing birth care in a setting that upholds women's human rights and preserves their privacy and dignity is important to achieve the patient's charter (Yarney et al., 2016). In 2011, the White Ribbon Alliance (WRA) and its partners developed the Charter on the universal rights of childbearing women from the universal human rights, to ensure every woman has the right to the highest attainable standard of health, including the right to dignified, respectful care during pregnancy and childbirth'. It is therefore important that the design of the labour and birth environments are built in ways that ensure privacy for conversations and healthcare operations to guarantee dignity and respectful maternal care. It is important to note that the foundation of respectful care is effective communication. Midwives should consciously build relationships with their clients, communicating with women respectfully and providing them with the information they need to make informed choices.

Positions during labour may be spontaneously changed according to parturient desires (Gizzo et al., 2014). Generally, the study showed that midwives determined the majority of the respondent's positions they used during the birthing process. According to the participants, the midwives without any negotiation whatsoever solely determined the positions they used for birthing. Birth positions and mobility is known to play an important role in birth mechanics as they relate to some factors such as the pelvis type, the foetal position and attitude, uterine contractions, the gravity force, and woman's preferences and emotions (41). Educating pregnant women on the acceptable birth positions is recommended for safer delivery processes. Such education can be incorporated into the routine pregnancy health education rendered to pregnant women during their antenatal care visits. Educating pregnant women on available birth positions will facilitate the suggestion of potential positions that a pregnant woman will be comfortable with and likely to reduce delay in labour progression. It is equally important to stress that birth positions are permitted depending on the midwife's confidence and skills, the birthing environment and the mother's personal choice. Identifying birth positions appropriate for a pregnant woman is important to foster control, reduce pain, widen the pelvic outlet, and easy access to the woman's perineum (Garbelli and Lira, 2021). It is also essential for midwives to be educated about the benefits of alternative birthing positions and to be trained in the necessary skills to assist women in delivering in any position of their choice. The authors acknowledge that birthing positions are included in midwifery curricula

in Ghana; therefore, educators should ensure that the topic is thoroughly covered in school. For practicing midwives, the topic of alternative birthing positions can serve as an important professional development opportunity.

Evidence exist that the birth environment contributes significantly to satisfaction with labour (Kazemi et al., 2023; Goldkuhl et al., 2022). Some studies have equally shown that non-abusive and respectful birth environment are essential factors that affects women's satisfaction with the labour and childbirth processes (Kazemi et al., 2023; Bante et al., 2020). In the current study, majority of the participants asserted satisfaction with the care received during labour and childbirth. This finding is important to reduce non facility based and unskilled birth attendants which is a common characteristic of low resource settings. The findings are consistent with some other studies elsewhere which showed that mothers were satisfied with care given during labour and that their babies' well-being were promoted (Garbelli and Lira, 2021; Bueno-Lopez et al., 2018). This suggests that mothers who are satisfied with the services provided at healthcare facilities are more likely to continue accessing antenatal and intrapartum services. This could be a key factor in reducing maternal and childbirth mortalities and achieving targets 1, 2,6, and 7 of the Sustainable Development Goal 3 (UNSDG 2015). It is therefore not surprising that the majority (9/13) of the participants indicated utilizing the labour and delivery services rendered at the health facility. Participants were of the view that they were willing and comfortable to deliver at the facility because of the good care they received, and they feel it is safe to deliver at the hospital. Participants were of the opinion that hospital delivery could help with early identification and management of complications compared to home births. Emphasis must be made that healthcare provision satisfaction depends on client's personal opinion about their delivery experiences, including being aware of their labour process, participating in decisions regarding their labour and possibly being able to cope with labour pain. It is therefore important to regularly assess patient satisfaction with the services provided in the maternal healthcare system to enhance the delivery of quality healthcare services.

The study revealed that there were instances of overcrowding in the lying-in area, which culminated in negative experience for women in such situations. While dealing with overcrowding may not be something midwives can solve directly, they can engage management and other stakeholders to, explain the negative consequences of overcrowding and collaboratively work toward finding a solution.

### Study strength and limitations

This is the first study that has explored the influence of birth environment on childbirth experiences of women in the North East Region of Ghana. The study therefore provides baseline information that can be used to strengthen respectful maternity care in the Region. Again, using mothers who have just delivered as study participants reduces information recall bias, thereby enriching the quality of the data analyzed. Prior to collecting the data, the researchers visited the birth environment to familiarize themselves with the setting. This helped them to relate with participant accounts.

The limitation of this study is that it did not include healthcare professionals in the labour and childbirth process. The use of the study's findings should therefore be contextualized from the perspectives of postnatal mothers. Regarding the educational status of participants, as previously noted, the study does not require representation; therefore, this will not be considered a limitation. However, the authors acknowledge having women with diverse educational backgrounds could have enriched the study in different ways.

### Conclusion

The study findings showed that the birth environment is associated with comfort, privacy, service provision satisfaction and desire for

facility delivery and limited involvement in the choice of birth position. Though most of the participants indicated favourable birth environment and satisfactory services, it is important to address the concerns of the few who had negative experiences during labour to achieve the quest for respectful maternity care. Midwives should consciously communicate respectfully with their client. Additionally, practicing midwives should periodically receive in-service on respectful maternity care and therapeutic communication skills to enhance respectful care.

### Authors agreement

All authors acknowledge that this article is our original work. The article has not been submitted to any journal, has not received prior publication and is not under consideration for publication elsewhere. All authors have seen and approved the manuscript being submitted and have consented to the submission. All authors agree to the copyright terms and conditions of Elsevier and Australian College of Midwives.

### Ethical statement

Ethical approval was obtained from the Noguchi Memorial Institute for Medical Research Institutional Review Board, University of Ghana (NMIMR-IRB CPN-052/22-23) and the Institutional Review Board of the Christian Health Association (CHAG IRB03022023). Administrative permission was equally obtained from the Baptist Medical Center to recruit participants for the study. Informed consent was sought from the participants. No names or direct identifiers were used.

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### CRediT authorship contribution statement

**Justina Atogichiga Alechana:** Writing – review & editing, Writing – original draft, Methodology, Formal analysis, Conceptualization. **Evelyn Asamoah Ampofo:** Writing – review & editing, Writing – original draft, Methodology, Formal analysis. **Adiza Atoko Mumuni:** Writing – review & editing, Methodology, Formal analysis. **Edem Kojo Dzantor:** Writing – review & editing, Methodology. **Jonathan Gbene:** Writing – review & editing, Methodology.

### Declaration of competing interest

The authors declare no competing interest be it financial or otherwise.

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