

BMJ Open Psychosocial experiences of mothers of preterm babies admitted to the neonatal intensive care unit of the Upper East Regional Hospital, Bolgatanga: a descriptive phenomenological study

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ABSTRACT

Introduction The postnatal period often presents significant psychological and social distress for mothers, a burden that is potentially heightened by having a preterm baby. Mothers of preterm babies face various psychosocial challenges that need to be explored. While some studies have explored the experiences of mothers of preterm babies, there is a need for more context-specific research to inform targeted interventions, especially in resource-constrained settings like northern Ghana. This study aimed to explore the psychosocial experiences of mothers of preterm babies admitted to the neonatal intensive care unit (NICU) of the Upper East Regional Hospital, Ghana.

Methods This descriptive phenomenological study was conducted in the NICU of the Upper East Regional Hospital in Ghana. Thirteen mothers of preterm babies were purposively sampled and interviewed using a semi-structured interview guide. The interviews were transcribed verbatim and analysed using Colaizzi's descriptive phenomenological method.

Results Three themes emerged namely, mothers' emotional experience, challenges encountered at the NICU and coping strategies. The mothers expressed a range of emotions, from indifference to profound sadness, disbelief, fear and worry, on realising their babies were preterm. Challenges within the NICU were financial constraints and poor NICU facilities while coping strategies included reliance on God, self-reliance and support from family and nurses.

Conclusion Mothers of preterm babies in the NICU experience significant emotional distress and face numerous challenges. Comprehensive support programmes that address financial, emotional and practical needs are essential to improve outcomes for both mothers and their preterm babies.

INTRODUCTION

The postnatal period has been noted to be associated with significant psychological and social distress for many mothers.¹ This

STRENGTHS AND LIMITATIONS OF THIS STUDY

- ⇒ The strength of this study is the strong adherence to the Consolidated Criteria for Reporting Qualitative Research checklist.
- ⇒ The study was conducted in 1 out of the 16 regions of Ghana; information from mothers of preterm babies in the other regions could have generated novel insight.
- ⇒ There is limited transferability as the findings may not be applicable to other settings or populations.

distress is likely to be further exacerbated by having a preterm baby. According to some studies, mothers with extremely low birth-weight and preterm newborns have higher levels of psychological distress than mothers of other babies.^{1 2} These psychosocial challenges may also have long-reaching consequences in terms of their mental health, and overall functioning.³

The WHO defines a preterm baby as one born before 37 completed weeks of gestation.⁴ It is further classified into extremely preterm (less than 28 weeks), very preterm (28 to less than 32 weeks) and moderate-to-late preterm (32 to less than 37 weeks). It is estimated that about 13.4 million babies were born preterm globally in 2020, accounting for more than 10% of live births that year,⁵ suggesting a significant burden of preterm births. Preterm births are noted to occur often as a result of a need to deliver babies before full gestation due to a medical indication.⁴ Also, preterm births are the leading cause of morbidity and mortality in children under 5 years across the world. This is more pronounced in low- and middle-income countries, largely due to

inadequate resources for the management of preterm babies.⁶ Ghana is not exempted from these challenges as studies show that in less-resourced regions such as the Upper East and Upper West, preterm babies have a significant risk of dying compared with their colleagues in more developed and resource-rich regions such as Greater Accra for the same reasons listed above.⁷ This finding implies that despite Ghana's overall poor health-care system as a low-middle-income country, there are also inter-regional differences in the preterm outcomes for the same reasons such as poor infrastructure, inadequate health personnel and resources.⁸

In northern Ghana, Kanmiki *et al*⁹ identified factors such as high illiteracy levels, polygamy and childhood marriages as factors contributing to mortality among preterm babies. This finding implies that apart from the north being poorly resourced, sociocultural factors also contribute to poor outcomes for preterm babies. These therefore point to contextual differences between the northern and the southern parts of Ghana as far as preterm care is concerned.

Preterm births in Ghana have been on a steady rise over the last decade. This is evidenced by a study from the largest referral hospital, located in the south, showing an estimated preterm birth rate of about 9.3% in 2003.¹⁰ This however doubled to 18.9% in 2015 pointing to the rise in preterm births over the period.¹¹ A study in northern Ghana found a preterm birth rate of 19.4%, which is higher than that found by studies conducted in the south.¹² Also noted was the significant association with maternal factors such as anaemia and young maternal age. The relatively higher prevalence of preterm births in the northern parts of Ghana is indicative of the need for concerted efforts to manage complications in both the babies and the mothers.

Studies have shown various forms of psychosocial challenges experienced by mothers of preterm babies. A major source of distress for mothers of preterm babies, particularly in Ghana, is uncertainty regarding the prognosis of their babies' conditions.^{13 14} Mothers tend to experience psychosocial distress from concerns about the survival of their babies, considering the unavailability of the needed resources.

A Swedish study that explored the psychosocial support of parents of extremely preterm babies in neonatal intensive care found that though the parents received support from various sources, there were still some deficits.¹⁵ The study cited support from empathetic health staff and other parents as the major sources of psychosocial support for parents of preterm babies. Parents however expressed challenges with a clear understanding of the roles of various hospital staff, challenges with balancing care for their preterm babies with other responsibilities such as care for their older children and lack of privacy in the neonatal intensive care unit (NICU). This study presents valuable insights into the experiences of parents of preterm babies, as well as their sources of support. The western setting of this study however limits generalisation

to settings such as the Ghanaian context, given differences in resource availability and culture.

A qualitative study in Uganda showed that mothers of preterm babies experienced distress because they were uncertain about the survival of their babies.¹³ These concerns were typically related to the babies' low weight and the fact that other babies had died while they were still on admission. Thus, even though it was acknowledged that the newborns were receiving quality care from the hospital, these concerns persisted. Notably, several mothers continued to visit the hospital on a regular basis due to concerns that their infants were becoming underweight even after they were discharged. Other concerns expressed by the mothers included problems with feeding, communication challenges with healthcare staff, the financial burden of caring for a preterm baby, worries that they may not be able to adequately care for their babies at home when discharged, and their babies not being readily accepted by family and society.

In Ghana, a study conducted in a tertiary facility found that some mothers experienced fear of losing their babies or the babies having worse outcomes.¹⁴ They further reported feelings of guilt, that is, thinking they were to some extent responsible for their babies being born preterm. Such thoughts and concerns are likely to cause negative emotions such as depression and anxiety.

Although the study employed a qualitative study design to provide in-depth information on the experiences of mothers of preterm babies, it did not explore the coping strategies that these mothers may employ to navigate the challenges they experience during the care of their preterm babies. It also did not address social support beyond the hospital setting, such as spouses, other relatives and friends. Findings from the study may also not be directly applicable to the northern parts of Ghana due to differences in cultural beliefs and practices.

It is evident that mothers of preterm babies require various forms of psychosocial support to improve their well-being and that of their babies.¹⁵ The support they receive however tends to be inadequate in meeting their needs during this stressful and emotionally demanding period.¹⁶ This is largely due to the inadequate understanding of the specific needs of these mothers.⁵ There is therefore a need for in-depth context-specific exploration of the experiences of mothers of preterm babies, to have a better understanding of their emotional and psychosocial experiences. This will inform the development and implementation of policies and strategies to efficiently address these needs, especially in the context of resource-constrained settings such as northern Ghana. Thus, this study seeks to bridge this knowledge gap and contribute to evidence that will drive measures to improve the well-being and psychosocial experience of mothers of preterm babies. The study aimed to explore the psychosocial experiences of mothers of preterm babies admitted to the NICU of the Upper East Regional Hospital, Ghana.

MATERIALS AND METHODS

Study design

The descriptive phenomenology design was employed in this study. The report was written in line with the Consolidated Criteria for Reporting Qualitative Research¹⁷ (online supplemental file 1). Descriptive phenomenology, as developed by Edmund Husserl and further expounded by successive phenomenologists, is a methodological approach to understanding people's experiences as lived by the individuals themselves.^{18 19} Descriptive phenomenology seeks to describe subjective experiences without imposing preconceptions and interpretations on the data. This design aims to describe a phenomenon as it appears, focusing on the first-person viewpoint of the individual experiencing it. Descriptive phenomenology is characterised by some key tenets (bracketing, intentionality, natural attitude, etc), that provide a rationale for its approach to understanding people's lived experiences.²⁰ Unlike interpretative phenomenology which focuses on understanding the meaning of experiences, the descriptive phenomenology design was deemed fit for the study because it allowed for the description of the phenomenon as experienced by the mothers.²¹

Patient and public involvement

Patients and/or the public were not involved in the design, conduct, reporting, or dissemination plans of this research.

Study setting

The study was conducted in the NICU of the Upper East Regional Hospital. The secondary-level hospital provides services such as obstetrics and gynaecology, general surgery, psychiatry, internal medicine and paediatrics with NICU services. The hospital also serves as the main referral facility for several primary healthcare facilities in the Upper East Region. The NICU of the hospital was established to render specialist care to neonates including preterm babies. The NICU is staffed with medical doctors, neonatal nurse specialists, general nurses, midwives and enrolled nurses. On average, 150 neonates are admitted to the NICU per month, with a significant number being preterm babies. Also, the average duration of admission at the NICU is 7 days. The NICU has a bed capacity of 30 with 8 incubators and a space for mothers to practice Kangaroo Mother Care (KMC). However, admissions sometimes exceed the bed capacity, a situation that compels some of the mothers to sleep on chairs and the floor.

Study population and inclusion criteria

Mothers of preterm babies constituted the study population. The inclusion criteria for the study were mothers of babies born before 37 completed weeks of gestation who had been admitted to the NICU for a minimum of 48 hours. However, mothers of preterm babies at the NICU who did not consent to the study were excluded.

Sampling technique and sample size

The mothers were sampled using the purposive sampling technique. This enabled the researchers to hand-pick the mothers based on their experiences and the inclusion criteria.²² After obtaining institutional approval, the third author visited the NICU, contacted the mothers face-to-face and explained the purpose of the study to them. Those who agreed to participate in the survey were later contacted to schedule interviews. None of the researchers had prior relationships with the mothers and did not influence the sampling process. A total of 13 mothers were recruited into the study and this was determined by data saturation, a state of data redundancy where no new data emerged.²³ However, none of the mothers dropped out of the study.

Data collection instrument and method

A semi-structured interview guide (online supplemental file 2) developed by the researchers was used for data collection. The interview guide was developed based on the objective of the study and composed of two sections with the first part eliciting the mothers' socio-demographic characteristics and the second section exploring their lived psychosocial experiences at the NICU. Questions in the interview guide included: (1) how would you describe your emotional experiences with the preterm birth? (2) What challenges do you encounter as a mother of a preterm baby? (3) In what ways did the NICU staff respond to your needs? (4) How do you cope with these challenges? (5) What support did you receive from the staff, could you describe a specific situation? This guide was translated into Grune, which is the dominant local language of the Bolgatanga municipality, and back to English by a professional linguist. The Grune version was used to interview mothers who could not comprehend the English language. The interview guide was piloted with three mothers and the errors detected were corrected. The third author, a female registered nurse with experience in qualitative research and a native speaker of the Grune language contacted the participants face-to-face. In all, 13 individual in-depth interviews were conducted from 13 November 2023 to 29 December 2023 in the nurses' room mostly in the morning (mothers' preference) with no one else present. The interviewer did not have a prior relationship with the participants. Open-ended questions were asked, and follow-up probes were used to get an in-depth understanding of the narratives. Each interview was audio-recorded with a digital audio recorder and important gestures were recorded into a field notebook. The interviews lasted between 30 and 40 min and no repeat interviews were conducted.

Data analysis and management

Data analysis was done manually and concurrently with data collection through Colaizzi's seven-step method of descriptive phenomenology data analysis using an inductive analytical framework.²⁴ The second and third authors did a verbatim transcription of the audio recordings. The

two researchers bracketed their minds and read each transcript several times to familiarise themselves with the data. From the transcripts, all statements about the psychosocial experiences of mothers of preterm babies were identified and meanings were formulated for those statements. Then, the formulated meanings were categorised into clusters of emergent themes. An exhaustive description of the experiences of mothers of preterm babies was written to incorporate all the themes. Then, the exhaustive description was condensed into short statements that represented the experiences of the mothers. Later, the extracted statements were returned to the mothers for verification, but no correction was made. A soft copy of the transcripts was stored on a password-protected laptop computer and a flash drive to avoid data loss.

Trustworthiness

Trustworthiness was ensured through Lincoln and Guba's principles of credibility, transferability, dependability and confirmability.²⁴ Statements were returned to the mothers for verification (member checking) to ensure credibility.²⁵ A detailed description of the study setting, processes and sample characteristics (thick description) was done to ensure transferability.²⁶ The researchers held sessions with experienced colleagues to review the study (peer debriefing). Also, through mind bracketing and maintaining a reflexive journal, confirmability was ensured.²⁷

RESULTS

Socio-demographic characteristics of participants

13 mothers of preterm babies participated in the study. Most of the participants (61.5%) were aged 20–29 years and married (92.3%). Also, the majority of the participants (38.5%) either had no education or had junior high school education. The gestational age of most of the participants (61.5%) was 28 to less than 32 weeks. Furthermore, 61.5% of the participants delivered through spontaneous vaginal delivery (SVD), and 69.2% stayed 1–7 days on admission. The socio-demographic characteristics of participants are presented in [table 1](#).

Psychosocial experiences of mothers of preterm babies

The psychosocial experiences of the mothers are described under three emergent themes namely: mothers' emotional experience, challenges encountered at the NICU and coping strategies. These themes and their corresponding subthemes are presented in [table 2](#).

Mothers' emotional experience

The mothers had emotional experiences while on admission and expressed their emotions differently mainly based on the physical appearance of their preterm babies. While some of the mothers expressed indifferent feelings, others expressed negative emotions of sadness, disbelief, fear, and worry.

Table 1 Socio-demographic characteristics of participants

Variable	Number (n)	Percentage (%)
Age		
Under 15	1	7.7
15–19	2	15.4
20–29	8	61.5
30–39	1	7.7
40–49	1	7.7
Education		
No education	5	38.5
JHS	5	38.5
SHS	2	15.4
Tertiary	1	7.7
Occupation		
None	4	30.8
Trader	1	7.7
Seamstress	3	23.1
Weaving	4	30.8
Farming	1	7.7
Marital status		
Single	1	7.7
Married	12	92.3
Age of pregnancy (weeks)		
Less than 28	2	15.4
28 to less than 32	8	61.5
32 to less than 37	3	23.1
Mode of delivery		
CS	5	38.5
SVD	8	61.5
Length of admission (days)		
1–7	9	69.2
8–14	3	23.1
15–21	1	7.7
CS, Caesarean section; JHS, junior high school; SHS, senior high school; SVD, spontaneous vaginal delivery.		

Indifferent feeling

Several of the mothers described how, on learning that their infants had been born before term, they felt unaffected. The mothers seemed unaffected by their children's seeming diminutive size because they could still suck and did not have any other physical health issues. Mothers expressed the following:

What I have seen in the baby is that the baby is too small...but I was not really worried about my baby being a preterm baby because my baby is sucking well and the baby is not physically sick. (P004, 7 days on admission)

Table 2 Themes and subthemes generated from the data

Theme	Subthemes
Mothers' emotional experience	Indifferent feeling Feeling of sadness Disbelief Feeling scared Worried
Challenges encountered at the NICU	Financial challenges Challenges with NICU facilities
Coping strategies	Reliance on God Self-reliance Social and nurse-to-mother support

Even though I saw my baby to be too small, I actually did not have any emotions when I was told that my baby was born premature because the baby is sucking. I just want to be discharged so that I will go home. (P003, 5 days on admission)

Feeling of sadness

Some of the mothers felt sad on seeing their preterm babies and attributed their sadness to the fact that their babies had respiratory problems, could not suck the breast and appeared too small. These were expressed as follows:

After I recovered from the operation, the baby was put in the incubator and the baby was not breathing well, so I was very sad. I felt very sad when I first saw my baby because the baby was too small and could not breathe well. (P001, 7 days on admission)

When I first realised the baby is preterm I was sad. I was very sad because this is not how a normal baby looks. My previous baby was big but this one is too small and could not suck breast. This made me to realise that the baby is born preterm and I am sad about it. (P007, 5 days on admission)

Disbelief

Disbelief was another emotion expressed by some of the mothers about the preterm birth. Some of the mothers on seeing that their babies were weak, small and unable to suck, expressed their disbelief as follows:

When I was first told that my baby was born preterm, I could not believe it. I just couldn't believe my baby was a preterm baby. (P002, 4 days on admission)

When I realised that the baby was preterm, I couldn't believe it, and the baby was also weak and too small, and not able to suckle. I can't believe I gave birth to such a baby. (P005, 3 days on admission)

Feeling scared

Some of the mothers were scared of their babies after seeing that their babies appeared to have big abdomens and looked different from their previous babies. They stated as follows:

After the CS, I was told that my baby would be born premature and I was scared. I became more afraid when I saw that the baby was too small and could not breathe well, and the abdomen was too big...this put so much fear in me. (P006, 5 days on admission)

At the first sight of my babies, I was afraid because of their appearance. They appeared different from other normal babies I have had in the past. The babies are too small. They look too small and they cannot suck. They cannot even breathe well like normal babies. (P009, 2 days on admission)

Worried

The mothers reported some experiences of worry after giving birth to preterm babies. While some of the mothers were worried that they could not carry their pregnancies to term, others were worried about the possibility of losing their babies. They narrated as follows:

I wanted the baby [pregnancy] to reach nine months before I gave birth but unfortunately, the baby came out at seven months so I was always worried about the baby. (P011, 21 days on admission)

At first, when I was told that my baby was preterm, I was very worried. I was just worried and I said 'God, don't let anything happen to my baby'. I was worried because I thought I would lose her. (P012, 5 days on admission)

Challenges encountered at the NICU

The mothers also experienced challenges during their stay at the facility. They recounted several challenges they have had to contend with at the facility. These include financial challenges and challenges with NICU facilities.

Financial challenges

Most of the mothers experienced financial challenges throughout their stay at the facility. Due to the financial challenges, some of the mothers were not able to purchase items they needed including prescribed medicines and that affected the care provided to their babies. Some mothers lamented that:

Lack of money has been my biggest problem. I don't have enough money to buy most of the things I need here. Things like medicines, I sometimes cannot buy them. (P008, 11 days on admission)

I have a lot of challenges here but the biggest among them is a money problem I mean financial problem, because for everything they do for the baby, we have to pay money and we have run out of money. (P006, 5 days on admission)

Due to financial challenges, most of the mothers bemoaned the high cost of admission at the facility. They particularly mentioned the daily charges at the facility and the cost of feeding as being expensive. They reported as follows:

We have a big problem regarding the cost of staying here [NICU]. They told us that at this place [NICU] we have to pay GH150.00 per day to stay here. (P003, 5 days on admission)

...I also have problems with food because I don't get food to eat unless I buy it. I buy food every day to eat and that is one of my challenges here. (P007, 5 days on admission)

Challenges with NICU facilities

The mothers were not impressed with the inpatient facilities at the NICU. They complained that the NICU was not spacious and contained only a few beds, a situation that compelled some of them to sleep on the bare floor.

There is not enough space in the NICU, and there are not enough beds for admissions, so I didn't get a bed to sleep so I had to sleep on the floor. (P005, 3 days on admission)

There are very few beds for mothers and their preterm babies, meanwhile, mothers all over the region are admitted to NICU. (P006, 5 days on admission)

Also, the mothers at the KMC unit were not impressed with the facilities mainly because of the lack of bathrooms for the mothers to bath. This compelled the mother to bathe in the open space. A mother had this to say:

There is no place to bath at this place [kangaroo mother care unit] for the mothers, all of us, we have to always bath outside in the open space. (P006, 5 days on admission)

The mothers at the NICU also opined that the few available washrooms were unkempt hence they resorted to bathing in the open space. A mother said:

There is a washroom here [NICU] but it is unkempt and the toilet facilities are not clean. So sometimes we stand outside to bath and people can see us bathing, it is not good. (P012, 5 days on admission)

Coping strategies

This theme describes the coping strategies the mothers adopted to navigate their challenges. The mothers adopted some coping strategies to navigate the challenges they encountered while on admission at the NICU. While some of the mothers reported that they mostly relied on God and themselves to cope with the challenges, others sought support from their spouses, relatives and health-care professionals.

Reliance on God

The mothers mostly relied on God by praying and trusting that they and their babies would get better. These were expressed as follows:

Now I don't feel sad because I have given everything to God...so I am just praying to God and trusting that

my baby will be fine and we will be discharged. (P013, 14 days on admission)

...so I kept praying to God to see me and my baby through. (P007, 5 days on admission)

We are just relying on God and praying that we will get well. (P009, 2 days on admission)

Self-reliance

Some of the mothers relied on themselves to navigate the challenges because they were alone. Some of the mothers were alone in the NICU and had no one to rely on for support. Therefore, they had to navigate through the challenges all by themselves. One mother accentuated:

...but now, I am mostly alone here so I am relying on myself to cope with these challenges. (P008, 11 days on admission)

Social and nurse-to-mother support

The mothers sought some support while they were on admission at the NICU. The support was mainly sought from their relatives, spouses and nurses which helped them to cope with the challenges of caring for their preterm babies. Some of the mothers recounted that they sought and received a lot of support from their relatives, especially from their mothers. The support they received included monetary support among others.

Sometimes I depend on my relatives for support. I always call on my relatives to help me with money. They have been very helpful. (P001, 7 days on admission)

My mother has been a huge source of support to me during this period. Everything I want, she provides to me. (P005, 3 days on admission)

Also, most of the mothers found support received from their spouses in terms of their physical presence, and financial support among others as providential hence a great coping in those difficult moments.

The support I am getting from my husband is great. He is always around to support me throughout this period. (P006, 5 days on admission)

I usually get support from my husband. He will bring me food, and water, and also buy all my medicines. (P013, 14 days on admission)

In the area of Support as a coping strategy, the mothers acknowledged the role of the nurses (medical team) at the NICU and found it supportive in helping them to cope. They recounted as follows:

Some of the medical team members especially the nurses supported me. They gave me some diapers for my preterm baby. (P002, 4 days on admission)

Sometimes the nurses support me by taking care of my baby while I go to buy food or take my bath. (P008, 11 days on admission)

DISCUSSION

The study aimed to explore the psychosocial experiences of mothers of preterm babies admitted to the NICU of the Upper East Regional Hospital, Bolgatanga. The study identified three themes which were: mothers' emotional experiences, challenges encountered at the NICU, and coping strategies.

The study identified a spectrum of emotional responses, spanning from indifference to profound sadness, disbelief, fear and worry. These responses align with existing research by Adu-Bonsaffoh *et al.*²⁸ indicating that while some mothers exhibited indifference, particularly if their babies were not physically sick and could suckle, many mothers grappled with deep sadness, especially when faced with their babies' respiratory problems, inability to suckle and small size. This emotional turmoil is not unexpected, as preterm birth increases the risk of postpartum depression,^{29 30} underscoring the challenges and uncertainties faced by mothers of preterm babies.

Feelings of disbelief were prevalent among mothers, especially when confronted with the preterm birth of their babies and their perceived fragility, highlighting a stark contrast with their previous experiences of normal births. Additionally, feelings of fear and worry were widespread, with concerns ranging from the health and survival of their babies to their ability to care for them. Similar findings have been reported by Ugandan and Ghanaian (Kumasi) studies where mothers experienced emotional distress as a result of uncertainty about the survival of their preterm babies admitted to the NICU.^{13 14} These experiences are not unfounded, as mortality rates among preterm babies in the global south, including Ghana, are high, with about 8000 deaths per year,^{6 31 32} These emotional experiences are likely to precipitate the development of mental health conditions, such as anxiety and depression among these mothers.^{33 34} This reiterates the crucial need for psychosocial support for mothers of preterm babies to help them accept their babies' conditions and develop the emotional resilience needed to support their babies' recovery.^{15 35}

The study also identified challenges faced by mothers within the NICU, which further exacerbated their distress. Financial constraints were a significant issue, with many mothers struggling to afford prescribed medicines and other essential items for their babies. The high cost of admission and feeding at the NICU added to their financial burden, emphasising the need for financial support for families of preterm babies. These findings align with Adu-Bonsaffoh *et al.*²⁸ who reported financial challenges as a major stressor for mothers of preterm babies in a tertiary hospital in Ghana, especially due to the poor implementation of health insurance coverage for NICU services, leading to parents having to pay out-of-pocket.^{36 37}

Inadequate facilities, such as limited beds and space at the NICU, also posed challenges, with no resting places for mothers, forcing some to sleep on the floor. This was compounded by inadequate bathing facilities for mothers,

highlighting the need for improvements in NICU facilities to ensure that preterm babies receive optimal care, and mothers receive some relief amid the difficulties of caring for them. Addressing these challenges is crucial to achieving Sustainable Development Goal 3.4, which focuses on reducing preterm mortalities.³⁸

Despite these challenges, the study identified coping strategies employed by mothers to navigate their difficult circumstances. Many relied on their faith in God, praying for strength and guidance during this challenging time. Others drew on their resilience, finding inner strength to cope with the challenges they faced. Support from family members, particularly spouses and mothers, was also crucial in helping mothers to cope. This finding is confirmed by earlier studies in Ghana by Adu-Bonsaffoh *et al.*²⁸ Practical support from nurses, such as assistance with baby care and provision of essential items, was also mentioned as a source of comfort and relief for mothers. This finding has been confirmed by Mundy³⁵ who reported on the need for cooperation between nurses and mothers of preterm babies and emotional support for these mothers. To further buttress this point, a Swedish study found that empathic support from NICU staff was a major source of social support needed by mothers of preterm babies.¹⁵ The findings from this study underscore the importance of comprehensive support for mothers of preterm babies, including emotional support, financial assistance and improvements in NICU facilities, to improve outcomes for both the mothers and their preterm babies.

Strengths and limitations

The study employed a qualitative approach, allowing for an in-depth exploration of the psychosocial experiences of mothers of preterm babies. This method provides rich and detailed data that can help researchers gain a nuanced understanding of the phenomenon under study. By conducting the study in the NICU of the Upper East Regional Hospital in Ghana, the researchers ensured that the findings are contextually relevant. This can enhance the applicability of the results to similar settings in resource-constrained environments.

Despite these strengths, the findings should be interpreted within the following limitations.

While the study provides valuable insights into the psychosocial experiences of mothers of preterm babies in a specific setting, the findings may have limited generalisability to other populations or settings. Factors such as cultural differences and healthcare practices could influence the experiences of mothers in different contexts. Also, there is a possibility of social desirability bias, as participants may have been inclined to respond in a way that they believed was socially acceptable or expected. This could affect the accuracy of the data collected, particularly about sensitive topics. This was however minimised since the researchers ensured that there was no prior relationship between the interviewer and the participants.

Implications for practice

The study highlights the need for healthcare facilities to develop and implement comprehensive support programmes for mothers of preterm babies. These programmes should address the emotional and psychosocial needs of mothers, providing them with the necessary tools and resources to cope with the challenges they face. The healthcare providers should focus on improving communication with mothers, ensuring they have a clear understanding of their babies' conditions and the care being provided. Education about preterm birth and neonatal care can help alleviate some of the anxieties and uncertainties experienced by mothers. The study highlights the challenges faced by mothers due to inadequate resources in healthcare facilities. Efforts should be made to address these constraints, ensuring that facilities have the necessary infrastructure to provide optimal care for preterm babies and support for their mothers.

Conclusion

Overall, the study highlights the complex emotional and practical challenges faced by mothers of preterm babies and underscores the importance of providing comprehensive support to address their needs. Interventions aimed at supporting these mothers should focus on providing emotional support, addressing financial challenges, improving NICU facilities and enhancing the support network for mothers. By addressing these issues, healthcare providers can help alleviate the burden on mothers and improve outcomes for both the mothers and their preterm babies.

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Patient consent for publication Consent obtained from parent(s)/guardian(s).

Ethics approval Ethical approval was obtained from the Committee on Human Research, Publication, and Ethics (CHRPE) at the Kwame Nkrumah University of Science and Technology with reference number CHRPE/AP/997/23. Also, institutional approval was granted by the Upper East Regional Hospital before the

data were collected. All the participants were informed about their right to voluntary participation and withdrawal from the study without consequences. The participants gave written informed consent before the interviews. However, participants who were below 18 years provided assent while their adult relatives provided consent for their participation. To ensure anonymity the mothers' names were omitted and replaced with codes (P001...P013).

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Data availability statement Data are available upon reasonable request.

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REFERENCES

- 1 Harris R, Gibbs D, Mangin-Heimos K, *et al*. Maternal mental health during the neonatal period: Relationships to the occupation of parenting. *Early Hum Dev* 2018;120:31–9.
- 2 Lee C-K, Huang X-Y. Psychological Processes of Postpartum Mothers with Newborns Admitted to the Intensive Care Unit. *Asian Nurs Res (Korean Soc Nurs Sci)* 2022;16:9–17.
- 3 Holditch-Davis D, Santos H, Levy J, *et al*. Patterns of psychological distress in mothers of preterm infants. *Infant Behav Dev* 2015;41:154–63.
- 4 World Health Organization. WHO recommendations on interventions to improve preterm birth outcomes. 2015.
- 5 Ohuma EO, Moller A-B, Bradley E, *et al*. National, regional, and global estimates of preterm birth in 2020, with trends from 2010: a systematic analysis. *The Lancet* 2023;402:1261–71.
- 6 Cao G, Liu J, Liu M. Global, Regional, and National Incidence and Mortality of Neonatal Preterm Birth, 1990–2019. *JAMA Pediatr* 2022;176:787–96.
- 7 Mohammed K, Abubakari AR, Amoak D, *et al*. Geographic disparities in the time to under-five mortality in Ghana. *PLoS One* 2023;18:e0291328.
- 8 Arku RE, Bennett JE, Castro MC, *et al*. Geographical Inequalities and Social and Environmental Risk Factors for Under-Five Mortality in Ghana in 2000 and 2010: Bayesian Spatial Analysis of Census Data. *PLoS Med* 2016;13:e1002038.
- 9 Kanmiki EW, Bawah AA, Agorinya I, *et al*. Socio-economic and demographic determinants of under-five mortality in rural northern Ghana. *BMC Int Health Hum Rights* 2014;14:24:1–10.
- 10 Nkyekyer K, Enweronu-Laryea C, Boafor T. Singleton preterm births in korle bu teaching hospital, accra, ghana - origins and outcomes. *Ghana Med J* 2006;40:93–8.
- 11 Adu-Bonsaffoh K, Gyamfi-Bannerman C, Oppong SA, *et al*. Determinants and outcomes of preterm births at a tertiary hospital in Ghana. *Placenta* 2019;79:62–7.
- 12 Adjei-Gyamfi S, Musah B, Asirifi A, *et al*. Maternal risk factors for low birthweight and macrosomia: a cross-sectional study in Northern Region, Ghana. *J Health Popul Nutr* 2023;42:87.
- 13 Namusoke F, Sekikubo M, Namiro F, *et al*. "What are you carrying?" Experiences of mothers with preterm babies in low-resource setting neonatal intensive care unit: a qualitative study. *BMJ Open* 2021;11:e043989.
- 14 Lomotey AY, Bam V, Diji AKA, *et al*. Experiences of mothers with preterm babies at a Mother and Baby Unit of a tertiary hospital: A descriptive phenomenological study. *Nurs Open* 2020;7:150–9.
- 15 Bry A, Wigert H. Psychosocial support for parents of extremely preterm infants in neonatal intensive care: a qualitative interview study. *BMC Psychol* 2019;7:76.

- 16 Apedani DB, Koduah A, Druye AA, *et al.* Experiences of mothers with preterm babies on support services in Neonatal Intensive Care Unit of a mission hospital in Ghana. *Int J Afr Nurs Sci* 2021;15:100366.
- 17 Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *Int J Qual Health Care* 2007;19:349–57.
- 18 Husserl E, Alston WP, Nakhnikian G. *The idea of phenomenology*. Nijhoff The Hague, 1964.
- 19 Husserl E. *Phenomenology and the foundations of the sciences*. Springer Science & Business Media, 2001.
- 20 Christensen M, Welch A, Barr J. Husserlian Descriptive Phenomenology: A review of intentionality, reduction and the natural attitude. *JNEP* 2017;7:113.
- 21 Reiners GM. Understanding the differences between Husserl's (descriptive) and Heidegger's (interpretive) phenomenological research. *J Nurs Care* 2012;1:1–3.
- 22 Moser A, Korstjens I. Series: Practical guidance to qualitative research. Part 3: Sampling, data collection and analysis. *Eur J Gen Pract* 2018;24:9–18.
- 23 Saunders B, Sim J, Kingstone T, *et al.* Saturation in qualitative research: exploring its conceptualization and operationalization. *Qual Quant* 2018;52:1893–907.
- 24 Morrow R, Rodriguez A, King N. Colaizzi's descriptive phenomenological method. *Psychol* 2015;28:643–4.
- 25 Birt L, Scott S, Cavers D, *et al.* Member Checking: A Tool to Enhance Trustworthiness or Merely a Nod to Validation? *Qual Health Res* 2016;26:1802–11.
- 26 Hadi MA, José Closs S. Ensuring rigour and trustworthiness of qualitative research in clinical pharmacy. *Int J Clin Pharm* 2016;38:641–6.
- 27 Gill MJ, Gill DJ, Roulet TJ. Constructing Trustworthy Historical Narratives: Criteria, Principles and Techniques. *Brit J of Management* 2018;29:191–205.
- 28 Adu-Bonsaffoh K, Tamma E, Nwameme AU, *et al.* Women's lived experiences of preterm birth and neonatal care for premature infants at a tertiary hospital in Ghana: A qualitative study. *PLOS Glob Public Health* 2022;2:e0001303.
- 29 Vigod SN, Villegas L, Dennis CL, *et al.* Prevalence and risk factors for postpartum depression among women with preterm and low-birth-weight infants: a systematic review. *BJOG* 2010;117:540–50.
- 30 Blom E, Jansen P, Verhulst F, *et al.* Perinatal complications increase the risk of postpartum depression. The Generation R Study. *BJOG* 2010;117:1390–8.
- 31 Scale EP. Ghana: Profile of preterm and low birth weight prevention and care, Connecticut. 2019.
- 32 UNICEF. *Maternal and newborn health disparities*. Benin New York: UNICEF, 2016.
- 33 Beck CT. Recognizing and screening for postpartum depression in mothers of NICU infants. *Adv Neonatal Care* 2003;3:37–46.
- 34 Lefkowitz DS, Baxt C, Evans JR. Prevalence and correlates of posttraumatic stress and postpartum depression in parents of infants in the Neonatal Intensive Care Unit (NICU). *J Clin Psychol Med Settings* 2010;17:230–7.
- 35 Mundy CA. Assessment of family needs in neonatal intensive care units. *Am J Crit Care* 2010;19:156–63.
- 36 Witter S, Arhinful DK, Kusi A, *et al.* The experience of Ghana in implementing a user fee exemption policy to provide free delivery care. *Reprod Health Matters* 2007;15:61–71.
- 37 Anafi P, Mprah WK, Jackson AM, *et al.* Implementation of Fee-Free Maternal Health-Care Policy in Ghana: Perspectives of Users of Antenatal and Delivery Care Services From Public Health-Care Facilities in Accra. *Int Q Community Health Educ* 2018;38:259–67.
- 38 Martinez R, Soliz P, Mujica OJ, *et al.* The slowdown in the reduction rate of premature mortality from cardiovascular diseases puts the Americas at risk of achieving SDG 3.4: A population trend analysis of 37 countries from 1990 to 2017. *J of Clinical Hypertension* 2020;22:1296–309.