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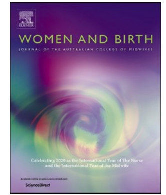

Midwives' experiences of providing pre-eclampsia care in a low- and middle-income country – A qualitative study

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A R T I C L E I N F O

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A B S T R A C T

Problem: Like other low- and middle-income countries, Ghana has high maternal mortality stemming from pre-eclampsia. Ghanaian midwives are frontline service providers of emergency care in obstetric complications and have the greatest potential to maximise pre-eclampsia outcomes. Little is known about the potential barriers and challenges to midwives' capacity to provide quality care in pre-eclampsia in Ghana. Therefore, we aimed to explore and gain insights into midwives' experiences of pre-eclampsia care including their knowledge, skills, and psychological aspects such as midwives' resilience.
Background: There is a rising global incidence of pre-eclampsia. Quality midwifery care in inter-professional collaborative practice is crucial to reducing pre-eclampsia-related morbidity and mortality.
Methods: A qualitative descriptive exploratory study. In-depth semi-structured interviews (n = 35) were performed in 2021 and analysed by thematic analysis.
Findings: There were three main themes. 1) Competence and Confidence in care; midwives provided timely and appropriate care based on sound knowledge and skills; they explained how pre-eclampsia care was organised within a multidisciplinary context and described collaborative working amongst midwives for mutual learning and support. 2) Emotional concerns and empathy; midwives' described fulfillment in achieving positive pre-eclampsia outcomes. In contrast, maternal loss was distressing and traumatic. 3) Call for improved care resources for pre-eclampsia; midwives recommended expansion of continuing professional development opportunities, appropriate infrastructure, resources, tailored public education, and a review of pre-service education to support their participation in pre-eclampsia care.
Conclusion: To improve the quality of care in pre-eclampsia, midwives should be capacitated, systems should promptly address barriers, and prioritise midwives' emotional well-being.

Highlights

Problem or Issue

Pre-eclampsia contributes to a high maternal mortality burden in Ghana where midwives are the first contact for many women who experience this complication. It is important to explore midwives' experiences to inform maternal health service provision and improve the quality of care.

What is already known

Midwifery is central to improving maternal and fetal outcomes of pre-eclampsia, especially in low and middle-income countries where midwives provide much of the ongoing care within multidisciplinary health teams.

What this paper adds

The findings provide insight into the midwife's role, emotional well-being, and quality improvements needed to enhance midwives' management practices ultimately strengthening pre-eclampsia care. Comprehensive strategies are needed to provide better support to the midwifery workforce.

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1. Introduction

Pre-eclampsia is detrimental to maternal and fetal well-being. This hypertensive disorder of pregnancy complicates 5 % of pregnancies [1] with life-threatening consequences extending beyond the puerperium [2]. In sub–Saharan Africa, pre-eclampsia contributes to high maternal mortality rates [3,4]. In low- and middle-income countries (LMICs), pre-eclampsia outcomes are impacted by delays in diagnosis and treatment, the availability of essential drugs, and a lack of skilled clinicians resulting in maternal adverse outcomes [3]. Therefore, early detection, prompt treatment, and long-term follow-up are essential to ensure better survival rates and improved outcomes, especially in these settings [5].

Internationally, collaborative management is recommended for pre-eclampsia care due to its complex nature and potential risks [5,6]. Effective teamwork among the multidisciplinary team ensures comprehensive care and support, enhancing maternofetal outcomes. Therefore, a lack of clear delineation of roles and responsibilities among different healthcare professionals may contribute to treatment delays and missed care increasing poor outcomes. Midwives in LMICs are likely to be the first contact for women with pre-eclampsia and exercise autonomy by providing appropriate care and collaborating with a healthcare team to manage the condition effectively. Focusing on Ghana, obstetricians lead pre-eclampsia care at the higher levels of healthcare and midwives, as part of the multidisciplinary team, contribute significantly through timely recognition, initiating swift treatment, and care escalation [6–8]. Midwives in medical-led systems may therefore struggle with limited autonomy due to hierarchical decision-making.

Midwives maintain responsibility for delivering holistic support and ensuring maximum continuity of care which is beneficial even for women classified as high-risk and experiencing complications [6,9,10]. Midwives' clinical roles extend throughout pregnancy, birth and postpartum and may include careful observation, drug administration and escalating care when there is clinical deterioration [6]. Midwives take history, assess the blood pressure, obtain samples for diagnostic tests, perform fetal monitoring, fluid management and supervise birth and educate the woman and family. Of particular benefit, midwives in LMICs like Ghana, often have a wider scope of practice and perform all seven Basic Emergency Obstetric and Newborn Care (BEmONC) signal functions, including the administration of parenteral anticonvulsants such as magnesium sulphate, which is important for reducing maternal and neonatal morbidity and mortality [11]. Midwives may be constrained in providing care for pre-eclampsia due to broader healthcare system challenges in LMICs [9] and so addressing these barriers may optimise midwives' roles for acceleration in maternal mortality reduction. Midwives are pivotal in accelerating progress towards the realisation of the Sustainable Development Goals (SGD's) if they can recognise, initiate treatment, stabilise the woman and facilitate timely referrals in pre-eclampsia [7].

To address a projected retirement of around 500 midwives in 2016, along with an existing shortage of 35 % of the midwifery workforce, the Ghanaian government implemented proactive steps to address the midwifery workforce challenges [12]. For these reasons and to achieve the Millennium Development Goals (MDGs) and now SDGs, the government of Ghana made significant investments in midwifery education by expanding midwifery training institutions [13]. The country currently has around twelve thousand six hundred seventy-three midwives providing maternity care to a population of thirty-two million people [14]. Hence, utilising the capacity of the midwifery workforce holds enormous potential, especially where pre-eclampsia is concerned as it is a leading cause of maternal deaths in the country [15]. Unfortunately over the past few years, there has been little progress in reducing maternal mortality in Ghana [16] and the impact of scaling up the midwifery workforce is yet to be realised.

Few studies have investigated pre-eclampsia management in Ghana, and these have not been focused on midwives' experiences with pre-eclampsia care [8,17,18], therefore less is known about potential barriers and challenges to midwives' capacity to provide quality midwifery care. Recent literature offers some insight into Ghanaian midwives' management of eclampsia, but the perspectives from tertiary hospital settings is lacking [19]. Given that pre-eclampsia care is commonly provided at this healthcare level, it is crucial to understand the essential roles played by midwives in this context. Despite the challenging work environment for midwives in Ghana there is limited understanding of how they provide emergency obstetric care and navigate resource challenges within such contexts.

This study formed part of a Ph.D. research that sought to unearth the multi-level factors influencing pre-eclampsia management in the context of a LMIC. The broader study incorporated interviews with midwifery managers, obstetricians, laboratory staff and a pharmacist as well as midwives and found additional themes covering "midwives' knowledge", "training needs related to pre-eclampsia", "policies and pre-eclampsia guidelines", and "barriers and facilitators of pre-eclampsia care" some of which have been published elsewhere [9,20]. This paper focuses on reporting midwives' clinical experiences as one theme emerging from the larger study.

This study aimed to provide insights into midwives' experiences providing pre-eclampsia care in Ghana. The findings should make an important contribution to the field of maternal healthcare as the range of pre-eclampsia interventions accessible to women can be influenced by the experiences, and perspectives of midwives. By exploring and describing midwives' practice and inherent contextual issues the study seeks to develop our understanding of midwives' roles within multidisciplinary teams and the potential barriers and challenges to midwives' management practices in a tertiary hospital setting.

2. Participants, ethics and methods

2.1. Study design

This was a qualitative exploratory descriptive study [21] utilising an in-depth interview approach to explore midwives' experiences of pre-eclampsia care in a tertiary hospital. Qualitative descriptive methods were employed to provide comprehensive descriptions of the phenomenon. The research design was appropriate for understanding pre-eclampsia management from the participants' perspective. The study generated rich contextual data and adhered to the Standards for Reporting Qualitative Research (Supplementary file 1).

2.2. Setting

This study took place in the obstetrics and gynaecological department of a teaching hospital in the Ghanaian capital, Accra. Women with pre-eclampsia and eclampsia are initially treated at the antenatal emergency unit and then transferred to appropriate wards based on the severity of their condition, with critical cases being admitted to the obstetric recovery ward, the high dependency area of the birth suite.

2.3. Sampling and recruitment

A purposive sample of midwives (n = 35) were recruited based on their ability to make a meaning contribution. Registered midwives currently employed in direct clinical care roles at the tertiary hospital were recruited. All the midwives had prior experience in offering pre-eclampsia care. Recruitment was done through a printed advertisement, and interested participants contacted the primary author. Each participant received an information sheet and provided written consent. Inclusion criteria were registered midwives with more than one year of work experience. Midwives on rotation, those on post-retirement contracts, and student midwives were excluded.

2.4. Data collection

Due to travel bans from the COVID-19 pandemic, interviews were conducted remotely by phone via WhatsApp calls. Data collection occurred from July- September 2021. Interviews were scheduled at convenient times and followed a semi-structured interview guide. Interviews explored various topics, including personal experiences, organisational routines, barriers, and suggestions for improving pre-eclampsia management (Supplementary file 2). Conducted in English, the interviews lasted 30–40 min and aimed to facilitate open and non-threatening discussions. Participants were interviewed once, and audio recordings were transcribed and stored securely.

2.5. Ethical considerations

The interviews were conducted by the first author, a qualified midwifery practitioner familiar with the Ghanaian environment, with previous research experience. However, there was no prior participant relationships that could influence the study findings. To reduce bias, there were ongoing discussions with the research supervisors to ensure that any conclusions reached were not marred by her personal experience or opinion. The team regularly appraised the practical value of all decisions taken during the process of inquiry. To promote trust within interviews, the primary author disclosed her professional background and her stance as a researcher to the participants for an open and honest relationship. By being transparent, we hoped the participants would not view the study as a fault-finding exercise. For transparent interpretation of findings, the research team allowed some participants to review the themes and to detect any discrepancies. Participants were engaged in ongoing communication to seek their support and inquire about the real value of what was being learnt. Participation was voluntary, and all of the midwives gave their written consent. None of them were coerced and they were free to withdraw their consent to participate at any time. Participants received mobile airtime as compensation through the online WhatsApp platform.

2.6. Data analysis

Saturation was reached after 33 participants, and two additional interviews were conducted for validation, resulting in a final sample size of 35. Thirty-five interviews were completed. Thematic analysis was used to analyse the interview transcripts by an inductive approach [22]. The analysis comprised six steps. Firstly, the audio files were transcribed, and the researchers read and re-read the transcripts to gain familiarity with the data, capturing initial thoughts as memos. In the second step, initial codes were generated and assigned by three authors (IG, MG, and AB) to represent the content of the transcribed data. Codes were shared and discussed to ensure consistency, leading to refinement and categorisation based on similarity. In the third phase, IG and MG independently searched for patterns and themes within the initial categories. Steps four and five involved meetings between IG and MG to review, define, and name the themes. Some themes were merged or renamed, resulting in the development of three interrelated themes. Finally, in step six, the identified themes were described and presented in the study.

3. Results

The study included 35 registered midwives. Participants had two to fifteen years of work experience in the health facility (Supplementary file 3). Three main themes were identified and included competence and confidence in care; emotional concerns amd empathy; and a call for improved care resources for pre-eclampsia.

Table 1
Themes and sub-themes.

Theme	Subthemes
1. Competence and Confidence in care	1. Timely and appropriate care
	2. Organising and providing pre-eclampsia care
	3. Mutual support and learning among midwives.
2. Emotional concerns and empathy	1. A positive experience
	2. The emotional trauma from pre-eclampsia care
3. Call for improved care resources for pre-eclampsia	1. Increasing access to continuing professional education
	2. Evaluating workplace systems and structures
	3. Reviewing pre-service midwifery education
	4. Providing tailored health education for women and the public.

3.1. Theme 1: competence and confidence in care

The first theme focuses on midwives' specialised knowledge and skills in identifying and initiating pre-eclampsia treatment, and midwifery collaboration. The subthemes were: timely and appropriate care, organising and providing pre-eclampsia care, and mutual support and learning among midwives.

3.1.1. Sub-theme 1: timely and appropriate care

Midwives understood the risks involved with pre-eclampsia and expressed their dedication to providing supportive care for pregnant women with pre-eclampsia, addressing their needs and concerns. Prompt action by midwives reinforced their mastery of pre-eclampsia management. They spoke of maintaining a high level of professionalism and considered it their primary objective to save the lives of both mother and fetus:

> "It is a life-threatening issue, and we put in our best.... try as much as possible to hasten the treatment" **(MW8)**

> "We all come to the workplace to care for women, that is our purpose, to save two lives.... **(MW13)**

When asked about their preparedness to handle emergencies, the midwives explicitly stated their constant readiness. Addressing a specific scenario, if a woman were to arrive at this moment with pre-eclampsia what would you do, the midwives spoke of their clinical observation skills and confidently affirmed their ability to handle the situation. A midwifery officer from the labour ward emphasises: "*I can vouch for us, we can, we are always ready*" **(MW8).**

Midwives believed that their colleagues working in the labour and emergency wards possessed greater competence:

> "For midwives on the labour ward and emergency, I will score as ten over ten……because I see they are competent to a very high level" **(MW17)**

Midwives aimed to promote a positive experience for the woman while alleviating fears and anxieties and encouraging the involvement of a support person. Feedback was regularly sought to improve care.

> "Some women come in very worried.... we sit her down, explain all the procedures like the blood pressure checks, the urine tests." **(MW35).**

> "We have a series of questions we ask her before discharge, and it boils down to how well we performed our care, what she liked and didn't like." **(MW15)**

3.1.2. Subtheme 2: organising and providing pre-eclampsia care

Participants described how midwifery care was provided in pre-eclampsia ensuring continuity of care across the antenatal, labour, and postnatal wards. This subtheme encompassed interprofessional collaboration, communication, and use of established protocols to streamline care. Efficient management of pre-eclampsia necessitates a collaborative, multidisciplinary approach. Midwives worked within a team midwifery model and reported closely collaborating with obstetricians and leveraging on the medical knowledge of the obstetric team. They elaborated that they did not work in isolation and discussed how in emergencies doctors, laboratory personnel, and pharmacists, functioned as one cohesive unit.

> "When someone comes in with a diagnosis of pre-eclampsia, it's not just the doctors who manage that person, they involve everybody. So, midwives are involved, laboratory technicians are there to run the various laboratory tests, the pharmacists are available." (**MW2**)

Midwives described interprofessional collaboration and teamwork as integral to pre-eclampsia care, and they consulted and communicated with the obstetric team providing updates on the woman's condition and treatment provided.

> "If there is any problem, we inform the doctors, and they tell us what to do. They are always ready to come and then support us to take care of the woman" (**MW26**)

Midwives clarified that initiating treatment was frequently the primary duty of midwives in outpatient and emergency departments:

> "The obstetrics outpatients department is a midwife's field. Before the doctor comes, we have started our drug protocols, started our magnesium sulphate, inserted a catheter, and are monitoring the urine output." **(MW1)**

Midwives at antenatal/postnatal admission wards and those on the labour ward had a variable expertise in managing pre-eclampsia and relied on the medical team for instructions. Their primary role in pre-eclampsia was that of ongoing monitoring and providing health education, particularly in the form of post-discharge guidance.

> "We give the maintenance doses of magnesium sulphate every 4 h……we monitor the progress of labour on the partograph. **(MW29)**

> "When the client is discharged, we make sure we let her know the imminent signs of eclampsia like severe persistent headaches, chest pains, nausea, and vomiting, and all that. We tell her to report as soon as possible if she starts to experience these signs." **(MW34)**

Midwives emphasised the necessity of adhering to procedural protocols in pre-eclampsia care. Midwives did not have specific management guidelines however they relied on the general ward protocols which they all knew from memory. These general guidelines focused mainly on pre-eclampsia drugs and their dosing regimens:

> "We have the drug protocols nicely printed and posted around. It is handy. A midwife or a doctor can refer to it in case they have forgotten something or are not so sure about what to do. You can look at it and proceed." **(MW9)**

3.1.3. Sub-theme 3: mutual support and learning among midwives

The subtheme of mutual support and learning emphasises the importance of teamwork and collegiality, among midwives. Midwives described collaborating, supporting, and mentoring one another to enhance skills and knowledge. Midwives spoke of the camaraderie experienced describing it as *"we work hand in hand" MW4, "We all help" MW19,* and *"We share ideas" MW3.*

Peer teaching and a diverse midwifery skill mix were recognised as valuable contributors to clinical learning.

> "As soon as you get there [the emergency], we have more than one midwife seeing to you. It's all hands-on deck." **(MW12)**

The extent of midwives' participation in pre-eclampsia care depended on their level of practice and competence. Junior midwives sought guidance from experienced colleagues, who were highly regarded for their expertise in pre-eclampsia care:

> "Midwifery officers and other midwives who have worked for a very long time give maximum care because they have that experience." **(MW29)**

Some senior colleagues were in clinical leadership roles and served as clinical mentors:

> "Anytime we have new staff employed to our unit, what we do is that we attach a senior midwife to a junior midwife…. sort of a mentor…. she teaches any procedure or any management that she is doing whilst the junior midwife looks on and asks questions." **(MW 32)**

3.2. Theme 2: emotional concerns and empathy

Midwives shared both positive and negative encounters in pre-eclampsia care. The high burden of pre-eclampsia and limited resources contributed to feelings of stress. Conversely, positive care outcomes sparked positive emotions and motivated midwives to cope with workplace challenges and emotional situations.

3.2.1. Sub-theme 1: the sense of fulfillment and satisfaction midwives experience

Many midwives expressed a sense of accomplishment, happiness, and pride when they played a significant role in a woman's recovery. They found professional satisfaction in making a difference and felt motivated to enhance their performance. These positive emotions fostered stronger teamwork among the midwives.

> "We felt great because initially, she was unconscious and had fitted. We started with our management…. doing what we were supposed to do for her, then we realised she gained consciousness and started talking." **(MW2)**

> "…. It makes you feel happy, it makes you know that you are a midwife who is competent enough to take care of such cases." **(MW25)**

Midwives also highlighted that women's good judgment and prompt seeking of healthcare played a crucial role in their effectiveness. .

> "I was glad that we were able to act rapidly for her to recover. She recovered quite well. I couldn't help thinking……supposing she hadn't accessed the facility earlier what could have happened? Probably she would have died" **(MW11)**

3.2.2. Sub-theme 2: the emotional strain of caring for women with pre-eclampsia

Midwives expressed frustration with high maternal mortality rates in pre-eclampsia and challenging work environments, leading to stress, trauma, and emotional exhaustion. Delays in women accessing healthcare and limited resources contributed to negative experiences. Losing a mother had a profound impact, causing sadness, burnout, and trauma. Midwives were also dissatisfied with some women's actions affecting care outcomes. Insufficient resources and lacking essential equipment resulted in missed care and compromised quality of care.

A midwife recollects the trauma of a maternal death she witnessed:

> "We felt traumatised…. She just came in and within 10 min she had just gone off [died] and the baby was also dead. We even tried taking her to the theatre for the baby to be taken out, but it was too late." **(MW23)**

Another adds:

"I felt bad…. because there was no bed, we couldn't do much. So, we were waiting for a bed before we check her blood pressure or start anything." **(MW22)**

Whilst another recounted feeling inadequate:

"If there were certain things in place for us to work with, I think we could have done better than we did……It was difficult because she was unconscious but if we had the necessary things in place we could have done better, maybe we could have saved her." **(MW34)**

Midwives often faced blame for adverse outcomes, leading some to questioning their competence in practice:

"That is our problem. Some doctors do not listen to our suggestions…. when there is a problem, the midwife is the first to be called out. You are made to think it is all your fault" **(MW26)**

3.3. Theme 3: call for improved care resources for pre-eclampsia

Midwives recommended strategies to address challenges in pre-eclampsia management. Measures such as increasing access to continuing professional education, *"we need more training" M17,* evaluating workplace systems and structures, *"our protocols can be reviewed to improve our management" M5*, reviewing pre-service midwifery education, "*They only teach the theory…. there should be adequate [pre-service] training on pre-eclampsia" MW29 and* providing tailored health education for women and the public, "*we can intensify our education to women" MW20.*

3.3.1. Sub-theme 1: increasing access to continuing professional education

Midwives stressed the need for continuing professional education to enhance competence. Although they elaborated on informal education and were part of case reviews, they recommended more focused education, specific to the local context, to increase pre-eclampsia knowledge and improve practice. They expressed concern about the lack of workshops on pre-eclampsia management especially for colleagues in peripheral centres. Online education was acknowledged as valuable, but improvements were needed to make it more accessible and cost-effective. The midwives also recommended pursuing higher education in midwifery with specialised programs beyond bachelor's or master's degrees.

"We get a lot of pre-eclampsia cases yet in our hospital we don't have a lot of workshops" **(MW15)**

"Midwives at referring hospitals and polyclinics may not have experience. Some have never nursed a woman with pre-eclampsia. So, at the peripheral hospitals, there should be constant workshops for the midwives" **(MW29)**

"Recently our NMC [nursing and midwifery council] introduced some online training and it is quite cumbersome, I tried it once and it also uses internet data and what about those midwives in the rural areas where they cannot access the data and all that?" **(MW34)**

3.3.2. Subtheme 2: evaluating workplace systems and structures

Midwives emphasised the importance of addressing hospital challenges such as infrastructure expansion, midwifery-specific management protocols, and resource mobilisation to enhance pre-eclampsia management. They highlighted the need for motivation, recognition, and empowerment to boost morale and improve midwives' work attitudes.

"Midwives need to be motivated. A little praise, a little acknowledgment, some kind words. Sometimes just a hug or a smile will be very much appreciated. As midwives, we don't get any of that. It is always one complaint or another. It is always something you didn't do right but it is never something you did right" **(MW12)**

"We need to be involved in any decision making. This will help build our confidence in managing pre-eclampsia/eclampsia cases." **(MW34)**

Midwives described having to navigate pre-eclampsia care with limited resources, requiring adjustable beds, monitors, resuscitation equipment, and other supplies:

"For a ward that caters to about 40, we may have about 5 or maybe 10 women with pre-eclampsia and we have only one sphygmomanometer. Sometimes we need to go to a different ward to borrow one." **(MW5)**

They reiterated that accessibility of resources could be improved:

"We should be given the right equipment and logistics…. If midwives are competent but do not have the right tools to work with…. they can't show the skills that they have acquired." **(MW9)**

Midwives spoke about the importance of reviewing pre-eclampsia management protocols to include midwife-initiated actions to formalise recognition of their contributions:

"We should outline the midwives' roles and then the doctors' roles. It should be clear cut so that everybody knows what they will do." **(MW15)**

3.3.3. Sub-theme 3: reviewing pre-service midwifery education

Midwives recommended changes to pre-service midwifery education to improve pre-eclampsia management. They also highlighted a need for more practical sessions and the involvement of preceptors to guide student midwives on clinical placements. They believed this would help the next generation of midwives manage complications effectively.

They persisted to express the need for updated content: *"If there is any change or update in medication, students should be taught these updates."* **(MW30)** .

"The preceptors have to come on board so that they will teach the students what they are supposed to know about eclampsia and pre-eclampsia." **(MW25)**

Others discussed faculty being involved in clinical placement follow-ups to gain insight into the current ward situation. This they believed would contribute to faculty not teaching pre-eclampsia care out of context.

"I think lecturers must visit the ward on vacations to at least have a firsthand experience of what is happening. It shouldn't be that they are training students from the books …if they have not been to the clinical site, they may teach in abstract…. which is far from reality." **(MW35)**

3.4. Sub-theme 4: providing tailored health education for women and the public

Midwives highlighted the importance of accurate information on pre-eclampsia for women and their families. They recognised the challenge posed by a limited understanding of what pre-eclampsia is, language barriers, and called for increased public education, including simple health messages in local languages and widespread media dissemination.

"I feel that sometimes when we are educating our clients, we should not be too technical. Sometimes you know what you want to tell the woman but maybe you might not be conveying it to her understanding because of the language barrier." **(MW15)**

“Adverts on TV, on radio, and leaflets can get the message across like the way information on COVID has been disseminated and everybody, even people who haven’t been to school, have a fair idea of COVID. I think that is the level we need to get with pre-eclampsia.” **(MW12)**

Another midwife added:

“Conditions that affect pregnant women like pre-eclampsia can be made into videos. The national television station too can have sections where we talk about these conditions frequently.” **(MW35)**

4. Discussion

By investigating the experiences of midwives’ pre-eclampsia management in a Ghanaian tertiary hospital, our findings shed light on the critical role of midwifery care in the presence of high pre-eclampsia mortality rates. The findings revealed three themes: competence and confidence in care; emotional concerns and empathy; and call for improved care resources for pre-eclampsia. This study clarifies essential elements needed to optimise midwives’ roles in pre-eclampsia care amidst resource limitations and also delineates areas for quality improvement. Our findings concur with other studies who found similar concepts of midwifery competence [19,23], collaboration and support [24,25], powerlessness and fear [23,26], woman-centeredness [27] a part of midwives experiences in high risk care.

Midwives in LMICs, especially in community settings lacking skilled professionals, may take on a more independent role in managing pre-eclampsia cases. This is different to in-hospital care, which is often multidisciplinary team based, with midwives working alongside other healthcare professionals to provide comprehensive care for expectant mothers. Stress and negative emotions may impact midwives effectiveness in this role as midwifery is often stressful due to the fast paced nature of maternity units, resource constraints, tensions in interprofessional practice, lateral and horizontal violence and adverse maternal and fetal outcomes [28]. The emotional toll from working in a high-risk environment, such as anxiety and fear, potentially hinders midwives’ ability to think clearly and make quick decisions in critical situations leading to delayed or inappropriate interventions. Negative emotions raise serious concern because it may influence midwives’ connectedness to women and colleagues, potentially hindering effective teamwork and communication crucial for pre-eclampsia management. Midwives’ emotional responses also impact their mental health and well-being [29]. Therefore, regular debriefing for midwives who experience stress, the creation of safe spaces, and counselling services are required to enable midwives to build resilience to obstetric complications and its outcomes and be appropriately guided to overcome emotional burnout. The availability of these proactive resources is crucial in protecting midwives from the negative effects of their demanding job which is particularly important for new graduates. There is a scarcity of evidence concerning the psychological factors linked to midwives’ management of pre-eclampsia in Ghana and other pregnancy complications and more research is required to understand its impact in midwifery practice [28].

According to the 2021 State of the World’s Midwifery Report (SoWMy), there is a global shortage of midwives more profound in the African with its high maternal mortality rates [11]. These shortages pose detrimental effects on maternal and neonatal health. The World Health Organisation (WHO) has identified that government regulation, support, training, and prioritisation of resources are necessary strategies toward ending preventable maternal mortality (EPMM). By implementing these strategies, countries can enhance the availability and quality of midwifery care-a key driver to EPMM, ultimately contributing to the reduction of maternal mortality rates worldwide [30].

Ghana continues to scale up its midwifery workforce with a focus on expanding accredited midwifery schools, implementing program regulations, adopting standardised curricula based on International Confederation of Midwifery (ICM) competencies and introducing baccalaureate midwifery programs. [12,31]. Yet, there are a myriad of challenges to the country’s midwifery pre-service education policies. Whereas the diploma in midwifery programs is heavily subsidised by the government, the baccalaureate midwifery courses are self-sponsored [13,32]. Consequently, more students enroll in diploma programs and with numbers far exceeding the capacity of the schools’ resources [12]. There is also a lack of equipped clinical practice labs for simulations, and midwifery students do not have access to digitalised resources for current information. In the clinical area, students face placement difficulties and preceptors are unpaid and thus are not fully committed to clinical education [33,34]. The state of the world’s midwifery report speaks to these challenges encountered in pre-service education in LMICs and highlights the pressing need for strengthening pre-service midwifery education as a first step towards achieving SGD targets and UHC [11].

Practicing midwives need more training opportunities to increase their knowledge, skills, confidence, and ability to provide pre-eclampsia care in line with current recommendations [35]. According to recent data from a multi-country validation study of key global maternal and newborn health indicators [36], 34.8 % of midwives in Ghana lacked competency in administering parenteral anticonvulsants despite more than 60 % reporting that they possessed all the necessary skills to perform authorised signal functions. Training midwives is essential for acquiring emergency skills, enabling them to handle critical situations, provide optimal care, and enhance maternal and neonatal outcomes [30].

Recently, Ghanaian midwives have emphasized the significance of pertinent pre-eclampsia and eclampsia training workshops underscoring the need for refresher training [19]. In the Ghanaian context, several factors significantly influence participation and support for continuing professional development (CPD) [13]. These include cost, poor access to CPD, relevance of primary training to clinical practice, and the inability of staff to engage in CPD because of staff shortages and a lack of institutional commitment [9,37]. Workshops are preferred in Ghana [38] however much learning occurs in the clinical setting and role models and clinical champions are a valuable resource in this regard [39].

Insufficient treatment, delayed admission and logistical challenges in hospitals contribute to the unfortunate deaths of many women [8,23]. In the organisational context, quality midwifery care in pre-eclampsia was challenged by inadequate midwifery staffing levels, huge workloads and a lack of essential equipment limiting detection and management. These results reflect those conducted elsewhere in Ghana [8,9,17] indicating a need for system-wide changes to improve the quality of maternity care in the country. Equipment and supplies are needed in addition to reviewing hospital procedures and increasing the competency of health workers [17,19,23]. This will enhance service provision and ensure women get the treatment they need with the best possible outcomes.

Despite the increasing prevalence of pre-eclampsia in Ghana there is a dearth of knowledge concerning women’s experiences, risk perceptions, and risk communication. Only a few published studies have examined the level of knowledge among women [18,40] and fewer have explored women’s perceptions [41]. In the literature, the lack of local terminology for pre-eclampsia leads to misunderstandings regarding pre-eclampsia and eclampsia danger signs and symptoms; cause and risk factors; prevention; maternal and fetal outcomes [42]. This can result in women obtaining their information from other sources and lead to wrong self-medication [43]. Midwives in our study recommend intensive public education, focusing on pre-eclampsia, to increase awareness of the disorder in the Ghanaian population. This will positively impact maternal and neonatal outcomes of pre-eclampsia.

4.1. Recommendations

1. Policymakers should acknowledge the international agreements on continuing education and channel resources and develop effective

strategies to facilitate CPD uptake. This is crucial for midwives to meet the established standards of competence which will in turn enhance evidence-based practice.
2. Governments must show strong commitment to increase healthcare investment for safe maternal care. It is extremely important for midwives to have adequate resources necessary to sustain their practice.
3. Regular debriefing for midwives who experience stress, the creation of safe spaces, and counselling services are needed to overcome emotional burnout from traumatic events associated with pre-eclampsia management.

4.2. Strengths and limitations

Participants were midwives with varying experiences who were willing to share their experiences which is a strength. However, their recollections may have been influenced by recall bias and social desirability. The findings from this study must be interpreted in the context of maternity care in poorly resourced locations, therefore the findings may have limited applicability to other countries. Being limited to one study location meant that this study lacks the perspectives of a wider pool of midwives, though the findings resonate with those from other studies conducted in Ghana.

5. Conclusion

This research provides insights into midwives' experiences with pre-eclampsia management in a LMIC. Midwives in this study have described their roles with a dedication to pre-eclampsia management, outlining essential qualities for safe midwifery care in the context of multidisciplinary collaboration. Emotional health and wellbeing are important for midwives to perform their crucial role effectively and provide optimal care for women. Further, midwives need to be supported with continuing midwifery education to build and sustain competence and adequate resources for managing pre-eclampsia. Supports for building professional resilience is equally important especially in LMICs where emotional wellbeing may be overlooked.

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Ethical statement

This study is also part of a doctoral research project ethical clearance for the broader project has been granted from Charles Darwin University Human Research Ethics Committee and Korle Bu Teaching Hospital Institutional Review Board and Scientific Committee.

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CRediT authorship contribution statement

Isabella Garti: Conceptualization, Methodology, Investigation, Software, Data Curation, Formal analysis, Visualization, Writing - original draft; **Michelle Gray:** Supervision, Validation, Writing - Reviewing and Editing; **Angela Bromley:** Supervision, Validation, Writing - Reviewing and Editing; **Jing-Yu (Benjamin) Tan:** Supervision, Writing - Reviewing and Editing.

Declaration of Competing Interest

None.

Appendix A. Supporting information

Supplementary data associated with this article can be found in the online version at doi:10.1016/j.wombi.2023.11.001.

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