


BMJ Open Experience and perceived impact of anxiety and depression on quality of life following emergency caesarean section among women in Ghana: a qualitative study

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To cite: Saansong AOA, Adoma PO, Nkrumah J, *et al.* Experience and perceived impact of anxiety and depression on quality of life following emergency caesarean section among women in Ghana: a qualitative study. *BMJ Open* 2024;**14**:e086069. doi:10.1136/bmjopen-2024-086069

► Prepublication history and additional supplemental material for this paper are available online. To view these files, please visit the journal online (<https://doi.org/10.1136/bmjopen-2024-086069>).

Received 04 March 2024
Accepted 18 October 2024



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ABSTRACT

Objective This study explored the experiences of women who have undergone emergency caesarean section (EmCS) and how they perceived anxiety and depression to impact their quality of life.

Design A qualitative study grounded in the biopsychosocial model was conducted among Ghanaian women diagnosed with anxiety and depression following EmCS. Semistructured interviews were used to collect data on the psychosocial impact of EmCS on women's lives. Thematic analysis was used to identify key themes from the interviews, using Nvivo V.14 Software.

Setting A hospital in Effutu Municipality, Central Region of Ghana. Data were collected from August 2022 to September 2023.

Participants The study included 25 Ghanaian women who had undergone an EmCS, had clinically diagnosed and treated anxiety and/or depression and had recovered within the last 6 months. Women with pre-existing mental health conditions were excluded.

Results The major themes identified from the thematic analysis of results included emotional distress, daily life challenges and disrupted social relationships.

Conclusions There is an urgent need for targeted mental health interventions and culturally sensitive postpartum support to address the psychological needs of women following EmCS in Ghana.

INTRODUCTION

Emergency caesarean section (EmCS) rates have been steadily rising globally, reaching an estimated 21% in recent years, exceeding the WHO's recommended range of 10%–15%.¹ While EmCS can be a life-saving procedure in certain situations, the increasing prevalence raises concerns about potential overuse and its impact on maternal well-being.¹ Thus, EmCS can have significant physical and psychological ramifications for women. EmCS, which may be a necessary intervention, can also be a traumatic experience for women, affecting them both physically and emotionally.

STRENGTHS AND LIMITATIONS OF THIS STUDY

- ⇒ The qualitative approach grounded in the biopsychosocial model allowed for a deep exploration of women's experiences following emergency caesarean section (EmCS).
- ⇒ With a sample size of 25 Ghanaian women, the study likely captured a diverse range of experiences, enhancing the generalisability of findings within similar contexts.
- ⇒ Conducting the study in a specific hospital in Ghana ensured that experiences were situated within the local cultural and healthcare context, providing valuable insights for developing culturally sensitive interventions.
- ⇒ The study's sample exclusively included women diagnosed with anxiety and depression following EmCS, potentially limiting the breadth of experiences captured.
- ⇒ Findings may have restricted generalisability to other settings or populations outside of Ghana due to the study's focus on a specific geographic region and cultural context.

Evidence exists that EmCS can lead to feelings of loss of control, guilt and disappointment, which may contribute to anxiety and depression.² It has been documented that women who have had EmCS are more likely to experience anxiety and depression than women who have had spontaneous vaginal deliveries and elective caesarean sections.^{3 4} These mental health outcomes, can, in turn, significantly impair a woman's perceived quality of life (QoL), making it difficult for her to take care of herself and her child. This study is particularly relevant in sub-Saharan Africa, including Ghana, where access to mental health services is often limited.⁵ Despite the increasing prevalence of EmCS, the experiences and perceived impact of anxiety and

depression on the QoL for women in Ghana following these procedures remain underexplored. This study focuses on the experiences of Ghanaian women who have undergone EmCS, shedding light on their perceptions of how anxiety and depression affect their QoL.

QoL is a complex concept that encompasses physical, emotional, social and spiritual well-being.⁶ It is a subjective measure that is influenced by a variety of factors, including health, relationships and finances. QoL is crucial for women during the postpartum period, as they adjust to motherhood and cope with physical and emotional changes. Maternal anxiety and depression can cast a significant shadow over the early stages of motherhood, potentially impairing a woman's ability to navigate the intricate demands of infant care.^{7,8} This impact manifests in multiple domains, disrupting the very foundation of nurturing and development. Consistent routines, crucial for a baby's development and sense of security, can become casualties of these mental health conditions.⁹ Feeding schedules may become erratic, sleep patterns fragment and essential tasks like bathing and diapering become difficult, creating a sense of chaos and instability for both mother and child.^{10,11} The physical and mental toll of anxiety and depression can significantly hinder a mother's ability to provide consistent care.¹² Beyond that, anxiety and depression can also negatively impact a mother's cognitive abilities. Decision-making, once instinctive, can become associated with significant anxiety, clouding judgement and hindering problem-solving skills.¹³ Prioritising tasks and responding appropriately to a baby's needs may become increasingly difficult, leading to feelings of inadequacy and helplessness.⁷ Perhaps most poignantly, the emotional warmth that forms the bedrock of the mother-child bond can be chilled by the grip of these conditions.⁷ Mothers battling anxiety and depression may struggle to connect with their babies on an emotional level, finding it difficult to respond to cries, engage in playful interactions or provide sensitive care.¹² This emotional disconnect can be equally devastating for both mother and child, creating a longing for connection amidst the internal struggles. Hence, it is crucial to recognise that these challenges are not insurmountable and address them.

The existing literature on the impact of childbirth experiences on women's well-being has provided valuable insights. Studies like Karlstrom *et al*¹⁴ in Sweden have examined the interplay between childbirth experiences, postpartum depression (PPD) and QoL among women receiving postnatal care. Similarly, qualitative research by Amegavluie *et al*¹⁵ in Ghana delved into the profound impact of severe obstetric complications on women's QoL and overall well-being following these experiences. Sadat *et al*¹⁶ explored QoL differences between mothers with and without PPD in Iran, while Mousavi and Shojaei's¹⁷ modelling efforts illuminated the relationship between PPD risk factors and QoL in Iranian women.

While both global and local literature highlights the significant impact of childbirth experiences on women's

well-being, including the link between PPD and QoL, there remains a critical gap in understanding how these issues manifest specifically in the Ghanaian context, particularly for women who undergo EmCS. Existing data on maternal mental health in Ghana often lack the granularity to fully capture the unique experiences and needs of this vulnerable population. Furthermore, research exploring the specific mental health outcomes linked to EmCS and their impact on the lives of Ghanaian women remains limited.

The overarching aim of this study is to contribute meaningfully to the existing body of knowledge surrounding the challenges faced by Ghanaian women who have experienced EmCS, thereby informing both intervention strategies and support systems tailored to their specific needs. By employing an in-depth and nuanced understanding of their perspectives, this research aspires to bridge the gap between existing academic discourse and the realities of Ghanaian women grappling with the psychological sequelae of EmCS.

METHODS

Theoretical framework

The study adopted the biopsychosocial model of health as a comprehensive framework for understanding how anxiety and depression affect the QoL of women who have undergone EmCS in Ghana. The model, which was first conceptualised by Engel,¹⁸ emphasised the interconnectedness of biological, psychological and social factors in influencing health outcomes. It is particularly valuable in contexts where a range of factors, including mental health and social determinants, play crucial roles.

Biologically, anxiety and depression disorders are associated with dysregulation of the hypothalamic-pituitary-adrenal axis, leading to chronic stress and elevated cortisol levels.¹⁹ This chronic stress can impair wound healing, increase inflammation, suppress the immune system and heighten pain perception, complicating post-operative recovery. Psychologically, the emotional distress and altered body image associated with anxiety and depression can further hinder recovery.²⁰ Feelings of fear, guilt and inadequacy can interfere with rest, relaxation and self-care.²¹ Concerns about body changes can lead to decreased self-esteem, social avoidance and exacerbated emotional well-being. Socially, limited access to mental healthcare, financial constraints and social stigmatisation surrounding mental illness can compound psychological distress in women after EmCS.²² These factors can lead to feelings of isolation, shame and difficulty navigating social interactions and accessing needed resources.

Biological factors can worsen psychological symptoms, and psychological distress can exacerbate physical symptoms and hinder social interactions. Similarly, social factors can amplify psychological distress, and psychological symptoms can make it more difficult to access social support and resources. This ultimately affects their perceived QoL.²³ This framework is particularly valuable

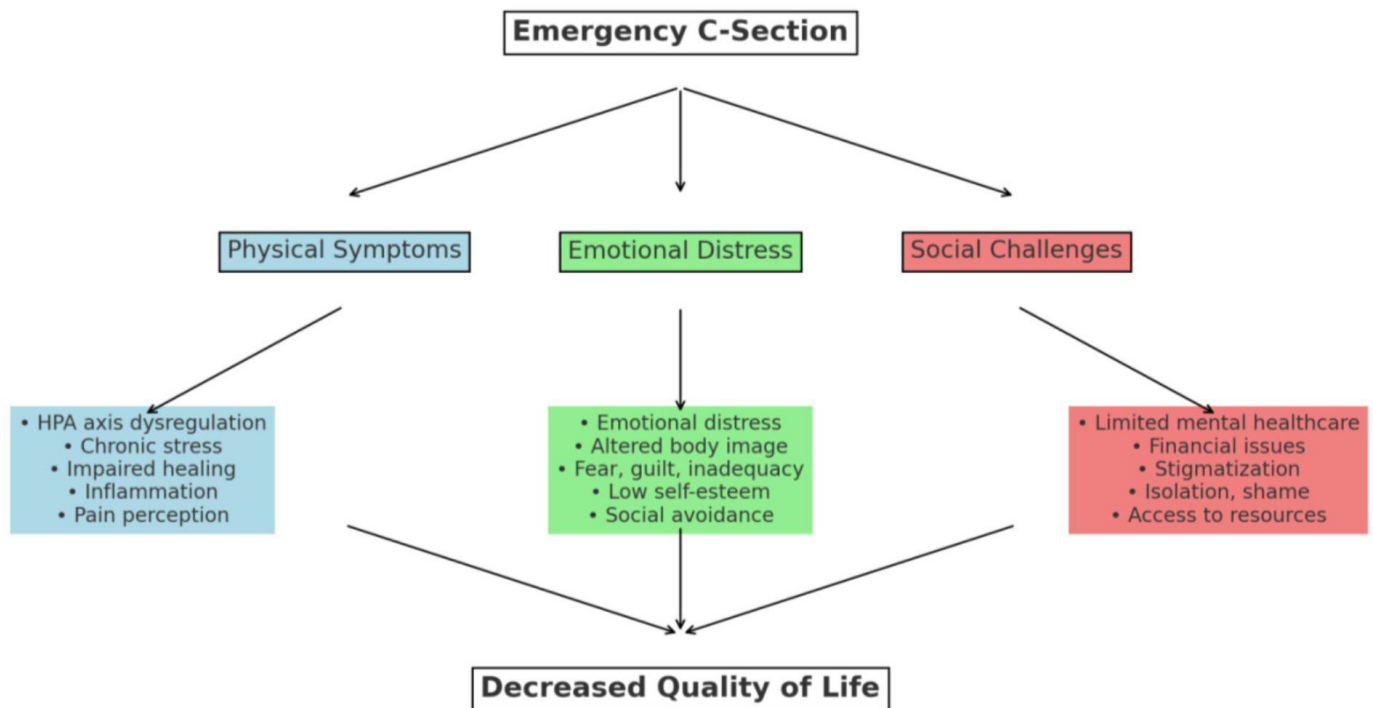


Figure 1 Anxiety, depression and quality of life among women after emergency caesarean section: a biopsychosocial perspective. HPA, hypothalamic-pituitary-adrenal.

in this context because it considers factors beyond just mental health. It acknowledges the role of biological changes, social support systems and cultural norms in shaping women's experiences and QoL after EmCS. This holistic approach will contribute to the development of culturally sensitive interventions that effectively address the diverse needs of these women and improve their overall well-being. Adopting this framework into the study can help us gain a deeper understanding of the interconnected influences that shape the experiences of this vulnerable population and how they impact the various aspects of their QoL. [Figure 1](#) provides a diagrammatic illustration of this.

Study setting

Transcending its initial design as a district facility, the hospital stands as a critical secondary referral centre for the Central Region.²⁴ It serves as the final medical destination for patients surpassing local capabilities, encompassing Effutu and surrounding districts, extending its reach to Ga South Municipality. It is equipped with dedicated facilities for prenatal, delivery and postpartum care, qualified obstetricians, gynaecologists and support staff handle routine and complex births, offering prenatal check-ups, ultrasounds, delivery management, postnatal care and family planning services.²⁵ This focus on maternal health complements the hospital's broader range of specialist resources in general surgery, internal medicine, paediatrics and emergency medicine, solidifying its vital role in the region's healthcare landscape.

Research design

This study employed a qualitative approach to delve into the authentic experiences of women in Ghana who have undergone EmCS. The main objective was to acquire an in-depth comprehension of their perspectives on the impact of anxiety and depression on their QoL following the surgical procedure. This method was chosen for its ability to thoroughly explore individual viewpoints and construct elaborate narratives grounded in personal experiences.^{26–28}

Study participants

This study focused on women, who had undergone an EmCS, clinically diagnosed and treated anxiety and/or depression, and had recovered within the last 6 months. The participants were 25–45 years old, with some basic education (at least junior high school), able to participate in a 60 min interview and resided in the study area. The study population was part of Women in Fertile Age which is a relevant homogenous sample for comparison. On the contrary, women with pre-existing mental health conditions or other significant life events that could significantly influence their experiences after EmCS were excluded to ensure the focus remained on the specific impact of the procedure itself.

Selection of participants

A convenience selection method was used to recruit women who had been clinically diagnosed with anxiety and/or depression following an EmCS, who sought care at the hospital, and who had fully recovered within 6

months. These individuals had previously engaged in periodic midwife-led counselling sessions within the first 6 weeks postpartum, aligning with the standard postnatal care schedule in Ghana, aimed at inspiring and guiding other mothers facing similar challenges toward recovery. After obtaining ethical clearance and approval for the study, the hospital was contacted to formally write to such participants to seek their consent to participate in our study. The participants who were willing to participate gave their express consent through verbal communication and their contact details were shared for our research team to contact them privately to schedule an interview appointment with them. Our research team visited them in their private homes and conducted the interviews. These participants were required to sign a written consent form before being interviewed. A total of 33 women identified and contacted by the hospital met the inclusion criteria. However, data saturation was reached after interviewing 25 participants, as evidenced by the lack of new themes emerging from the data.²⁹ While 33 women were initially considered eligible, the remaining eight were not interviewed as the data collected had already reached a point of saturation. This decision was made in consultation with the research team through saturation analysis and was consistent with the ethical considerations of minimising participant burden when no new information was anticipated.

Data collection tool

Our study used both in-person and virtual interviews with a semistructured interview guide (online supplemental material) to collect data from the participants. This approach allowed for in-depth exploration of individual experiences and perceptions.³⁰ The interview guide was carefully developed from literature and theory to align with the study's aim and research inquiries, ensuring its capability to elicit rich and in-depth information from the participants. To ensure the interview guide's content validity, it was developed based on the study's theoretical framework (Biopsychosocial framework) and a review of relevant literature.^{31–33} The guide included open-ended questions that encouraged comprehensive discussions between the interviewer and participants, enabling them to extensively explore their encounters with EmCS, anxiety, depression and QoL. Key questions explored: 'What were your initial thoughts and feelings when you learnt you needed an EmCS?', 'Since your EmCS, have you experienced any feelings of anxiety, worry, or fear?', 'Can you describe any challenges or difficulties you have faced in caring for yourself and your baby since the EmCS?', 'What kind of support have you received from family, friends or healthcare providers since your EmCS?'

Before data collection, the interview guide underwent a pre-testing phase with a small group of participants (5) with similar characteristics to the study participants. These participants were not included in the actual study. This allowed for refinement of the questions and ensured clarity and relevance.³⁰ No additional standardised tools

were used during the interviews. All interviews were conducted by experienced researchers with at least two qualitative research publications to ensure consistency and minimise bias.

Data collection procedures

Data were collected for this study from August 2022 to September 2023, after receiving ethical clearance from the Ethics Review Committee of Ghana Health Service, as well as approval from the hospital. Extensive semi-structured interviews were conducted with selected participants to gain a comprehensive understanding of their experiences and insights into the topic. To ensure inclusivity and gather diverse perspectives, the interview guide was translated into three local languages: Twi, Ga and Fante. This translation was handled by a professional service specialising in medical and research documents, followed by a thorough review by bilingual team members to guarantee accuracy and cultural sensitivity. By incorporating local languages, the study aimed to reach women who might not be fluent in English, ensuring a more representative sample and fostering a more comfortable and open environment for participants to share their experiences. The interviews were conducted in an open forum setting, either in-person or through virtual platforms like Zoom or WhatsApp video calls, based on participant preference. Open-ended questions were used to encourage participants to share their experiences, and probing questions were asked to clarify any responses. All interviews were electronically recorded with the participant's consent.

Data analysis

Data gathered were transcribed manually since most of them were conducted in local languages (Twi, Ga and Ewe) to gain a deeper understanding of the subject. Once all recordings were transcribed by a professional language translator at a local university, coding began by breaking them down into meaningful chunks. Braun and Clarke's³⁴ framework for thematic analysis was used to analyse the data using the qualitative software NVivo V.12.2. Data analysis was done concurrently with data collection to improve on the quality of the interview which would further serve as a basis for a subsequent interview. Following the step-by-step thematic analysis by Braun and Clarke,³⁴ the researchers familiarised themselves with the data gathered by reading and re-reading the transcripts after the audiorecorded interviews with participants were transcribed verbatim. The transcripts were sent to two people so they could determine whether the information gathered represented the mother's opinions. Following Braun and Clarke's guidelines for thematic analysis, data analysis began with familiarisation. The transcripts were read and reread multiple times to gain a thorough understanding of the participants' experiences. The transcripts' accuracy was verified by two of the research assistants through careful comparison with the audio recordings. The initial coding process was conducted by different

research assistants (two of them), and the emerging codes and themes were then discussed and refined collaboratively with entire team members to ensure consistency and rigour. This collaborative approach, combined with regular reflexive discussions among the research team, helped to enhance the trustworthiness and credibility of the findings.

Ensuring rigor

This qualitative study adhered to Lincoln and Guba's framework of credibility, transferability, dependability and confirmability to ensure rigour.³⁵ Credibility was established through prolonged engagement with participants, member checking and data triangulation. Transferability was supported by a detailed description of the study context. Dependability was ensured through meticulous documentation of the research process, including interview guides and data analysis procedures. Finally, reflexivity and a comprehensive audit trail enhanced the confirmability of the findings.

Patient and public involvement

None.

RESULTS

Participants demographics

The study's sample (n=20) comprised participants aged 25–40 with at least a junior high school education. Marital status varied, with the majority married alongside representation of single, widowed and divorced individuals. Parity also ranged, with most nulliparous (no prior childbirth), while others experienced uniparous (one prior birth) or triparous (two prior births) parity. Most participants were employed (see [table 1](#) for more details).

Thematic results

Thematic analysis revealed participants' multifaceted experiences. 'Impaired Daily Functioning' encompassed disrupted routines, fragmented sleep and cognitive difficulties, highlighting challenges in daily activities and mental clarity. 'Perceived Impact on Social Life' underscored heightened irritability, withdrawal and isolation, reflecting the emotional toll on social interactions. Finally, 'Coping Strategies' illuminated diverse approaches, including medical support, social networks and religious solace (see [table 2](#)).

EmCS, anxiety, depression and QoL: lived experiences

Impaired daily functioning

The emotional distress experienced by the participants had a palpable effect on their daily lives and physical well-being. The participants reported experiencing disrupted domesticity, disrupted sleep patterns, foggy cognition, and leading to impaired daytime functioning a few weeks after the surgery. Additionally, poor eating habits and neglect of self-care were commonly reported, reflecting the broader impact of emotional turmoil on their physical health.

Table 1 Details of study participants

	Age	Parity
Participant 1	Late 20s	First
Participant 2	Late 30s	First
Participant 3	Early 30s	First
Participant 4	Mid 20s	First
Participant 5	Mid 30s	Second
Participant 6	Mid 20s	First
Participant 7	Late 30s	First
Participant 8	Late 30s	Second
Participant 9	Mid 20s	Second
Participant 10	Early 30s	Second
Participant 11	Mid 20s	First
Participant 12	Mid 30s	Third
Participant 13	Late 20s	First
Participant 14	Early 30s	First
Participant 15	Late 30s	First
Participant 16	Early 30s	Second
Participant 17	Mid 30s	First
Participant 18	Mid 20s	First
Participant 19	Early 40s	Second
Participant 20	Early 40s	Third
Participant 21	Late 30s	Second
Participant 22	Late 30s	Second
Participant 23	Mid 30s	Third
Participant 24	Early 30s	First
Participant 25	Early 30s	First

Disrupted domesticity

From the participants' narratives, several key facets of disrupted domesticity emerged. Most of the participants shared how anxiety and depression linked to the EmCS disrupted their familiar routines and affected their sense of stability. They explained how their normal maternal/marital routines were shattered.

I used to wake up early, get my other kids ready for school, prepare breakfast, and even have time for a quick walk. After the surgery, just getting out of bed felt like climbing a mountain. I couldn't concentrate on anything, my mind was always racing, and even the simplest tasks like making soup felt overwhelming. I was like I was letting my family down, and the guilt just made it even worse. (Participant 3)

The participants' once-efficient mornings became a struggle, replaced by fatigue, overwhelm and self-doubt. This disruption goes beyond mere inconvenience; it impacts the very foundation of her role as a mother and caretaker, creating a cascade of negative emotions.

However, one participant was able to show resilience and carried out her domestic activities just fine.

Table 2 Main themes and subthemes of women's experiences and perceived impact on quality of life following emergency caesarean section

Main themes	Subthemes	Code frequency	Description and examples
Impaired daily functioning	Disrupted domesticity	22	Difficulties in managing household chores and caring for families due to physical and emotional exhaustion. Example: 'I couldn't cook or clean for weeks, and it was frustrating to rely on others.'—Participant 5
	Fragmented sleep patterns	19	Frequent interruptions in sleep due to anxiety and worry about their health and their baby's health. Example: 'I kept waking up at night, thinking about all the things that could go wrong.'—Participant 12
	Cognitive fog	11	Struggles with concentration and memory, making it hard to perform daily tasks or return to work. Example: 'I would forget simple things, like what I was about to do or say.'—Participant 8
Perceived impact on social life	Emotional distress	23	Increased irritability affects relationships with family and friends. Example: 'I would snap at my husband and children over small things, which I never used to do.'—Participant 7
	Withdrawal and isolation	17	Feelings of isolation and withdrawal from social activities due to depression and anxiety. Example: 'I stopped going out with my friends because I didn't feel like I could enjoy myself.'—Participant 10
Coping strategies	Social support	23	Participants employed diverse social support from partners and peers. Example: 'My husband and Akua (best friend) were my only close confidant whom I could share and discuss my problems with them'.—Participant 2
	Engaging in self-care practices		Engaging in self-care practices like relaxation techniques, and finding moments of resilience and meaning. Example: 'I started managing stress by reading the bible and watching movies. I also started being kind to myself'—Participant 11

I ran my home as a woman of any household should. Although a few weeks after the surgery making dinner was very difficult, the dishes piled up, laundry overflowed, and I pushed through it. I fought hard to focus, and not let the guilt eat away at me. (Participant 6)

Some women can show resilience in such moments. This could be due to many factors such as a history of these mental health outcomes, and a robust support system, among others.

Fragmented sleep patterns

The participants' accounts shed light on the significant impact of their fragmented sleep patterns on both their physical and emotional well-being.

It was very difficult to sleep well at all. I used to toss and turn and sweat all night. It was very perplexing. I was feeling even more exhausted and in pain. (Participant 25)

Meanwhile, Participant 20 revealed a poignant struggle with falling asleep, describing every night as a marathon characterised by racing worries and debilitating insomnia.

Before the surgery, I would easily drift off to sleep as soon as my head hit the pillow. After the surgery,

it's become a nightly struggle. My thoughts are consumed with concerns and I find myself constantly going over the details of the surgery in my mind. The smallest noise jolts me awake, leaving me wide-eyed and staring at the ceiling, counting down until morning arrives. (Participant 20)

For most new mothers, sleep is indeed a precious commodity, offering brief moments of respite amidst the chaos of motherhood. However, for women recovering from an EmCS while battling anxiety and depression, it becomes something else entirely—elusive yet essential; an agonising cycle that takes its toll both physically and emotionally.

Cognitive fog

The participants' narratives vividly recounted the debilitating cognitive fog they frequently endured, emphasising how it immensely hindered their ability to navigate motherhood and daily life. Many described struggling with foggy cognition, expressing a sense of bewilderment at once-simple tasks becoming inexplicably arduous after surgery. Their descriptions revealed an overwhelming mental disorientation that affected even mundane activities like meal planning and housekeeping.

Simple tasks that used to come easily became more challenging for me. Planning meals and keeping the house in order used to be second nature but after the surgery, I felt like my mind was clouded. Remembering what came next and making simple decisions, such as choosing what to wear, became increasingly difficult. Mentally, I constantly felt disoriented. (Participant 17)

This pervasive cognitive cloud not only led to forgotten tasks but also fuelled a deep-seated erosion of confidence and agency, engendering feelings of shame and inadequacy. The internal struggle strained family dynamics, casting shadows over maternal care and the cherished mother-child bond. Consequently, fearing judgement, many women withdrew socially into seclusion, intensifying their sense of loneliness in this arduous journey.

Perceived impact on social life

The emotional experiences of anxiety and depression following the caesarean section had a discernible impact on participants' social relationships. Almost all of the participants described a notable shift in their interactions with family, friends and their newborns with one feeling no changes to her social life. Feelings of withdrawal, irritability and a struggle to connect with others were recurrent themes.

Emotional distress

The emotional toll of the EmCS significantly impacted participants' relationships with their partners and families. Many struggled to reconcile their emotional state with their pre-surgery expectations, leading to feelings of guilt and inadequacy.

After the surgery, I felt like a different person. I struggled with social interactions and often felt upset, and it put a strain on my relationship with my partner and baby... Initially, I felt distant from my baby and experienced guilt over not being the mother I wanted to be for her. This worry consumed me as I feared it would impact her growth and future. (Participant 14)

This sense of emotional upheaval extended to interactions with partners and children. Another participant (25) confessed, 'I found myself getting easily infuriated with my husband and children, even over small things. I knew it wasn't their fault, but I couldn't help it.' These experiences highlight the profound impact of emotional distress on participants' personal lives and relationships.

Withdrawal and isolation

This impact on social life extended beyond the immediate family, as participants also reported changes in their relationships with friends. They experienced significant changes in their relationships with friends, struggling to maintain connections and feeling increasingly isolated from their social circle. One participant expressed the challenge,

I found it hard to keep up with my friends. I felt like I was in a different world, and it was exhausting to try and pretend like everything was normal when it wasn't.

Another participant reflected even deeper on her experience after surgery, describing how she withdrew from everyone and cocooned herself within her own space as a means of coping with overwhelming demands.

After the surgery, everything became so overwhelming. Dealing with the baby's cries, never-ending tasks piling up around me, and constant pressure just seemed too much to bear. I started withdrawing from everyone; spending most of my time in bed while barely communicating with family or friends. It felt like being trapped inside a dark cave with no way out except by shutting myself off from everything and everyone. (Participant 11)

This disconnection from friends heightened feelings of loneliness and alienation among participants dealing with anxiety and depression following EmCS. The challenges of motherhood caused them to retreat further into solitude, severing crucial support networks while grappling with these emotional burdens.

Coping with anxiety and depression after EmCS

Participants described a range of coping strategies they employed to manage feelings of anxiety and depression following their EmCS experiences. These coping strategies included coping with social support and engaging in self-care practices. These strategies varied in nature and intensity, reflecting the diverse ways women navigate emotional challenges postpartum.

Social support

Many women found solace and strength in social connections. They emphasised the importance of open communication with their partners, and friends drawing on their understanding and emotional support.

Talking to my partner and seeking support from other mothers who have been through similar experiences has been helpful. (Participant 6)

Connecting with others who had undergone similar experiences provided a sense of validation and reduced feelings of isolation.

Engaging in self-care practices

Participants also highlighted the significance of self-care practices in managing their emotional well-being as one of the means of coping with the stress associated with the condition.

I started managing stress by reading the bible and watching movies. I also started being kind to myself. (Participant 11)

However, it is important to note that not all participants reported specific coping strategies or experiences

of resilience. This variation highlights the individual nature of coping and underscores the need for personalised support systems and interventions tailored to each woman's unique needs and circumstances.

DISCUSSION

The purpose of our qualitative study was to explore the experiences of women who have undergone EmCS in Ghana and examine their views on how anxiety and depression affect their QoL. Specifically, the data collected from the study uncovered several significant themes concerning the post-EmCS experiences. The first main theme, 'Impaired daily functioning', encompasses subthemes such as 'Disrupted domesticity', 'Fragmented sleep patterns' and 'Cognitive fog', shedding light on the multifaceted challenges that individuals may encounter in their daily lives. The second main theme, 'Perceived Impact on Social Life', explores subthemes like 'emotional distress' and 'Withdrawal and Isolation', emphasising the potential effects on individuals' social interactions and emotional well-being as they navigate the complexities of infertility. Together, these themes and subthemes provide a comprehensive understanding of the various dimensions of the infertility experience, from disruptions in daily routines to the perceived impact on social connections.

The study findings indicated that anxiety and depression resulting from EmCS can significantly disrupt the lives of women, impacting their daily routines, maternal and marital roles, as well as their overall sense of stability. Previous research has highlighted the risk of PPD and anxiety following complicated birth experiences which can disturb established familial routines and roles.^{36 37} These challenges are universal for women after childbirth when they differ from what they expect. The recurrent theme in the literature on postpartum psychological distress is the disturbance of routines and roles, influencing many women's perception of their QoL. However, with EmCS introducing an element of emergency or unexpectedness, this emotional strain may be intensified beyond what existing literature captures fully. This underscores the need for a nuanced understanding regarding individual responses to anxiety and depression induced by EmCS experiences. Likewise, healthcare providers should not only focus on physical recovery but also consider potential psychological impacts after an EmCS procedure. Healthcare providers could offer targeted interventions seeking to help women manage these emotional challenges during the postpartum period. The focus should be given to comprehensive mental health programmes integrating psychological support alongside physical recovery—including counselling services peer support groups, and educational resources aimed at empowering families facing such emotional issues thereafter.

Moreover, based on participants' accounts, disrupted sleep patterns emerged as a predominant issue. The

significant impact of disrupted sleep on both physical and emotional well-being, particularly in women recovering from EmCS surgery, aligns with existing research on the consequences of disturbed sleep.³⁸ Numerous studies in sleep medicine consistently link interrupted sleep to various health issues, including heightened fatigue, increased pain and emotional distress.^{38 39} Healthcare providers must prioritise improving sleep quality in postoperative patients, especially women recovering from EmCS surgery, as it can influence their overall recovery and well-being.³⁸ For instance, research establishes a connection between poor sleep quality and elevated levels of anxiety and depression.^{39 40} Surgical procedures have been found to disrupt normal sleep patterns, leading to difficulties in falling asleep and staying asleep,⁴¹ ultimately impacting the perceived QoL for new mothers. Recognising the influence of fragmented sleep on physical well-being underscores the need for tailored approaches during early motherhood care stages and postsurgery recovery; neglecting these disturbances could prolong recovery timelines and contribute to long-term psychological disorders. Moreover, interventions to promote better sleep in surgical patients can have clinical benefits, including reduced pain levels and improved recovery outcomes.^{38 42}

Addressing sleep disruption in the postoperative period can also help mitigate the development of complications, such as delirium and cardiovascular events. In sum, research by Wright *et al*³⁸ and Wesselius *et al*³⁹ supports the idea that sleep disruption before and after surgery negatively impacts patients' experience of pain and overall recovery. To enhance sleeping outcomes, healthcare providers should consider implementing comprehensive educational programmes about proper sleep practices for patients undergoing operations. Integrating cognitive-behavioural therapy specifically designed for vulnerable maternal figures shows promising results in enhancing adaptation to better-quality rest, intercepting detrimental impacts on overall patient prognoses by addressing vulnerabilities during reflective periods.

Moreover, the prevalent occurrence of mental fogging among participants significantly affected their capacity to carry out everyday tasks, resulting in feelings of confusion, impaired decision-making, and a subsequent decline in confidence and control. The mental fog had extensive effects on maternal caregiving, family interactions and social involvement. Correspondences with existing literature can be observed in research on postsurgical cognitive dysfunction or postoperative cognitive dysfunction.^{43 44} These conditions are known to impact cognitive function following surgery, presenting symptoms like disorientation, memory issues and trouble focusing. The accounts in this study align with current literature concerning the cognitive repercussions of surgery, especially regarding challenges encountered in day-to-day functioning. With a focus on mothers' encounters with anxiety and depression, EmCS intensifies specific challenges faced by mothers such as difficulties with maternal care and bonding with their children,

ultimately impacting their perception of QoL. This is different from the general cognitive fogging previously discussed in literature. Recognising and addressing post-surgical mental fogging in mothers is instrumental for enhancing overall maternal well-being, family dynamics and the mother-child relationship. Healthcare providers should be vigilant about these cognitive challenges during postsurgery care, integrating methods to support cognitive recovery into their treatment plans. To address mental fogging among mothers after surgery, interventions could encompass tailored cognitive rehabilitation programmes and support networks. Cognitive rehabilitation, involving brain exercises and mental stimulation has shown promise in easing postoperative cognitive dysfunction. Additionally, offering emotional support and enlightening mothers on the potential effects of surgeries on cognition could help manage expectations and reduce sentiments of sorrow and inadequacy.

From the personal accounts of the participants, the emotional toll of having EmCS-induced anxiety and depression had an immense impact on the participants' social lives, which is a crucial component of one's overall QoL. Many reported changes in their relationships with family, friends and newborns, often feeling isolated, irritable, and finding it difficult to connect with others. Some also described struggling to identify and express their emotions and the strain this placed on their relationships. Research has also demonstrated how caesarean sections can contribute to PPD and anxiety, affecting bonding with the baby as well as straining relationships with partners and family members.^{45 46} However, each mother may have unique experiences and strategies for coping with these challenges. Furthermore, different cultural contexts and levels of support available can lead to varying experiences among individuals facing similar situations. This underscores the critical need for tailored interventions aimed at supporting mothers who have undergone EmCS. Addressing these issues through psychological support programmes or counselling can equip them to navigate the hurdles they encounter in social interactions as well as establish bonds with their newborns. Healthcare providers should offer personalised mental health resources such as counselling services that are essential for mothers going through similar journeys. Future research should explore the role fathers play in supporting women after EmCS in the Ghanaian context. Cultural expectations regarding parenting dynamics, particularly the division of childcare responsibilities, could significantly impact women's experiences and influence the effectiveness of interventions. Furthermore, these findings highlight the need for postpartum care that aligns with the WHO standards for improving maternal and newborn care⁴⁷ and considers the cultural context of care in Ghana.⁴⁸

The emergence of coping strategies as a significant theme in this study aligns with existing literature highlighting the importance of coping mechanisms in mitigating the impact of postpartum anxiety and depression.^{49 50} The diverse range of coping strategies employed

by Ghanaian women in our study, from seeking social support to engaging in self-care practices and finding moments of resilience, underscores the need for multifaceted support systems that cater to individual needs and preferences. These findings suggest that interventions aimed at enhancing coping skills, such as mindfulness-based stress reduction or peer support groups, could be valuable additions to postpartum care programmes, particularly for women who have experienced EmCS.

This study employed the biopsychosocial model of health, emphasising the interconnectedness of biological, psychological and social factors in influencing health outcomes. This model provides a framework for understanding how anxiety and depression following EmCS can impact a woman's overall well-being. For instance, chronic stress associated with anxiety and depression can negatively affect wound healing, increase inflammation, suppress immune function and heighten pain perception, complicating postoperative recovery. Disrupted sleep, also linked to anxiety and depression, further impacts recovery and daily functioning. Psychologically, emotional distress hinders recovery and a woman's ability to provide maternal care. Socially, limited access to mental healthcare exacerbates psychological distress and can strain relationships.

While this study offers valuable insights into the experiences of Ghanaian women following EmCS, it has limitations. The single hospital setting may limit generalisability, and future research should include a larger, more diverse sample. Reliance on self-reported data could introduce recall bias, suggesting the need for objective measures in future studies. Finally, the cross-sectional design limits causal inferences, highlighting the importance of longitudinal studies for examining long-term effects.

CONCLUSION

This research highlights the detrimental impact of anxiety and depression on the QoL for women in Ghana who have undergone EmCS. These mental health challenges not only affect the mothers' well-being but also have implications for their infants' development. Given the heightened risks posed by current social distancing measures, Ghana must prioritise comprehensive maternal healthcare that includes proactive mental health support, accessible resources and tailored interventions for new mothers, particularly those recovering from EmCS. By addressing these needs, Ghana can significantly improve maternal and infant outcomes.

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Contributors AOAS and POA conceived and designed the study. AOAS analysed the data. AOAS, POA, FYG and JN wrote the papers. AOAS, POA and JN reviewed the available literature and performed the analyses. AOAS, POA, FYG and JN contributed to the interpretation of results and write-up. AOAS is the guarantor and accepts full responsibility for the finished work and/or the conduct of the study, had access to the data and controlled the decision to publish.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None declared.

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

Patient consent for publication Consent obtained directly from patient(s).

Ethics approval The study involves human participants. Per the Declaration of Helsinki, and the sensitive nature of our study, ethical approval was obtained from the Ghana Health Service Ethics Review Committee with reference number GHS-ERC: 024/06/23. In addition, verbal and written consent were sought before engaging participants in the study. All participants in our study signed consent forms to take part in the study. Also, other ethical principles such as consent, confidentiality, privacy, autonomy, and safety were ensured and complied with. All methods were performed per the relevant guidelines and regulations.

Provenance and peer review Not commissioned; externally peer reviewed.

Data availability statement Data are available upon reasonable request.

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