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Original Article

Conceptualizing maternal mental health in rural Ghana: a realist qualitative analysis

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Abstract

In low- and middle-income countries, maternal mental health needs remain neglected, and common mental disorders during pregnancy and after birth are routinely associated with hormonal changes. The psycho-social and spiritual components of childbirth are often downplayed. A qualitative study was conducted as part of a wider realist evaluation on health systems responsiveness to examine the interrelationships between pregnant and postnatal women, their families, and their environment, and how these influence women's interactions with healthcare providers in Ghana. Data collection methods combined six qualitative interviews ($n = 6$) and 18 focus group discussions ($n = 121$) with pregnant and postnatal women, their relatives, and healthcare providers (midwives, community mental health nurses) at the primary healthcare level. Data analysis was based on the context–mechanism–outcome heuristic of realist evaluation methodology. A programme theory was developed and iteratively refined, drawing on Crowther's ecology of birth theory to unpack how context shapes women's interactions with public and alternative healthcare providers. We found that context interacts dynamically with embodiment, relationality, temporality, spatiality, and mystery of childbirth experiences, which in turn influence women's wellbeing in three primary areas. There is an intricate intersection of pregnancy with mental health impacting women's expectations of temporality, which does not always coincide with the timings provided by formal healthcare services. Societal deficiencies in social support structures for women facing economic challenges become particularly evident during the pregnancy and postnatal period, where women need heightened assistance. Socio-cultural beliefs associated with the mystery of childbirth, the supportive role of private providers and faith healing practices offered women a feeling of protection from uncertainty. Co-production of context-specific interventions, including the integration of maternal and mental health policies, with relevant stakeholders can help formal healthcare providers accommodate women's perspectives on spirituality and mental health, which can subsequently help to make health systems responsive to maternal mental health conditions.

Keywords: Ghana; maternal mental health; psycho-social; spirituality; health-system responsiveness; realist evaluation

Introduction

About 10–15% of pregnant and postnatal women in low- and middle-income countries (LMICs) suffer from some form of mental illness (Kugbey et al. 2021), with rates of depression in pregnancy and after birth being 11.3% and 18.3%, respectively (Sawyer et al. 2010). Common mental disorders (CMDs) such as depression, anxiety, and distress impact on multiple aspects of the health and wellbeing of pregnant and postnatal women and the new-borns (World Health Organization 2022). This includes their physical and mental health, social functionality, economic productivity, ability to make meaningful contributions to their family and society, and quality of life (Mcnab et al. 2022). The CMDs can affect women's capacity to cope with their normal activities and stresses of life, can lead to complications such as self-harm and harm to others (Patel et al. 2004, Agyekum et al. 2022), and can also contribute to preterm delivery, low birth weight etc. (Parsons et al. 2012, Stein et al. 2014, Bauer et al. 2015).

Key messages

- Pregnant and post-partum women in low- and middle-income countries, suffering from mild, moderate, or severe mental disorders like stress, anxiety, depression, bipolar disorders, and schizophrenia are a vulnerable sub-group. Their vulnerability is heightened by their pregnancy state and neglect of their mental health needs and expectations by the interplay of contextual factors.
- A qualitative realist analysis using the ecology of birth theoretical framework unravels the complex interplay of contextual factors influencing maternal mental conditions. These factors are intertwined in dynamic ways and influence maternal mental health and women's perceptions, expectations, and interactions with health systems
- Supporting women in the diverse beliefs and perspectives of maternal mental health, and strengthening the capacities of maternal healthcare providers on mental health, as well as these healthcare providers recognising, accommodating, and supporting women in their diverse beliefs and perspectives, can ensure a more inclusive, holistic approach to maternal mental healthcare, which besides biomedical treatment also includes psycho-social and spiritual support to promote mental well-being during this critical stage.

Despite the existence of effective prevention and treatment options, CMDs remain undiagnosed, under-recognised, undertreated, and neglected in most LMICs, including Ghana (Gelaye et al. 2016, Lasater et al. 2017). Pregnant women are particularly vulnerable to CMDs depending on their demographic and individual characteristics (Fisher et al. 2012, Nakku et al. 2016, Adjorlolo and Christmals 2023), physiological and hormonal changes (Lima et al. 2017), as well as socio-cultural and health-system factors that shape access to maternal mental services and health-seeking behaviours (Lasater et al. 2017). Evidence highlights the following five groups of factors that can affect CMDs in pregnancy and postnatally and influence help-seeking in many LMICs.

First, women's socio-demographic characteristics and economic factors such as being employed (Goyal et al. 2020, Dutta et al. 2022), educated, married, previous history of mental illness (Marcus et al. 2003, Verreault et al. 2014, Bayrampour et al. 2015), past obstetric history and unplanned and unwanted pregnancy (Weobong et al. 2014, Lima et al. 2017). Second, socio-cultural–religious norms and values, social support, and marital relationship (Gelaye et al. 2016, Shamu et al. 2016, Insan et al. 2022, Wedajo et al. 2023), such as preference for a particular gender of child (Goyal et al. 2020, Wedajo et al. 2023). In some LMICs like India, women often face familial pressures to go through repeated pregnancies until they give birth to a male, and experience mental trauma and depression (Mitra 2014). Religious beliefs and myths can constrain health seeking (Daniel et al. 2018, Insan et al. 2022), as shown in Tanzania where maternal mental health conditions were perceived to be caused by witches, evil spirits, demons, or being a will of God, consequently leading to care-seeking from alternative care providers (Daniel et al. 2018). Third, health-system factors such as limited infrastructure, lack of mental health screening tools (Lasater et al. 2017, Badu et al. 2018, Adjorlolo and Aziato 2020) or routine screening for CMDs as part of routine maternal healthcare (Brown and Sprague 2021), and providers' knowledge and capacity to diagnose CMDs (Dadi et al. 2021), medicines supply, limited services for marginalized groups, and integration of mental health services within maternal healthcare (Badu et al. 2018). Fourth, wider national factors such as the economic situation, political priority of mental health (Brown and Sprague 2021) translated into the infrastructure, resources, services, and programmes (Ofori-Atta et al. 2010, Badu et al. 2018). In South Africa, (Brown and Sprague 2021) limited financial budgetary allocations for mental health services contributed to highly reactive and fragmented maternal and mental care and competition for public health resources, thus leading to the neglect of maternal mental health needs. Despite an extensive literature on the prevalence and drivers of maternal mental health, literature on the understanding of how pregnant women perceive and understand mental health symptoms, and the extent to which local health systems are responsive to maternal mental health needs (Nsereko et al. 2011, Price and proctor 2009, Leis et al. 2011, Thompson et al. 2011, Reuter et al. 2016, Shah et al. 2017), particularly in a rural setting such as in Ghana, is limited. In this paper, we contribute to bridging this gap. Specifically, the objective of this paper is to examine the understanding and experiences of maternal mental health by key stakeholders (e.g. pregnant and post-partum women, their families, and healthcare providers) in Ghana, including mechanisms by which these understandings influence healthcare seeking behaviours and perceptions of health-system responsiveness to their needs and expectations.

The ecology of birth framework

We drew on Crowther and Hall 2017a ecology of childbirth conceptual framework to unpack how context shapes women's experiences and perceptions of maternal mental health in rural Ghana.

This framework was chosen because it deploys a relational perspective and posits that, 'relationships often exist between individuals to themselves, each other, and their environment' (Crowther and Hall 2017a). Six interrelated components—context, embodiment, relationality, temporality, spatiality, and mystery—influence the health and psychological well-being of pregnant women and the degree of their engagement with their health systems. 'Contextuality' comprises individual, community, and country characteristics (e.g. models of care, political, religious, and socio-cultural beliefs), which affect peoples' views, behaviours, and practices about health and well-being (Crowther et al. 2020). These reflect on how people construct and perceive the world, including mental illness (Adams and Salter 2007). Interconnected with the aspect of contextuality is 'spatiality', which refers to both the quality of physical places and felt space, of where (maternal mental) care is delivered. Physical place refers to a physical environment of care provision (such as healthcare facilities), whilst felt space reflects the human experience, permeating through receipt of care (friendliness of providers, ambience in the place) (Balabanoff and Fourer 2022). This shapes the degree of a person's emotional attachment to the place of care (Crowther et al. 2020). 'Embodiment' comprises the individual's physical and emotional well-being (Crowther and Hall 2017a), e.g. mood changes resulting from hormonal

changes in pregnancy (Mckillop 2009) and lifestyle factors such as smoking or sleep pattern. The resultant behaviours can consequently affect women's relationships with others and ability to adapt to hormonal changes during pregnancy or after birth (Crowther et al. 2020). 'Temporality' refers two distinct times: clock-time and felt-time. Clock-time connotes the specific period during the pregnancy when biomedical protocols and procedures should occur (Crowther et al. 2020). Felt-time, by contrast, is the time women feel it is the 'right' moment for particular care procedures to be conducted for them, and has been found to help improve patients' spiritual growth and psychological well-being. Felt-time and clock-time do not always coincide (Crowther et al. 2015, White 2016). 'Mystery' refers to an opportunity for a relationship with divinity during pregnancy (Crowther et al. 2020), reflecting the perceived association of pregnancy and childbirth as a time when one is exposed to physical, spiritual, and psychosocial vulnerability. Consequently, perinatal women often attempt to find hope, meaning, and purpose in life for themselves and others (Thoresen and Harris 2002). 'Relationality' refers to the social support postnatal women may receive from kin members and particularly husband/partner, that aids their self-care and feelings of being emotionally and spiritually safe (Crowther et al. 2020). Nevertheless, in the absence of familial support, the existence of a companion within the healthcare system (i.e. midwife) can serve as a safety net for pregnant and postnatal women and helps with ensuring a trusted relationship with providers and the healthcare system.

Methods

A qualitative realist evaluation study design was used. Realist evaluation (RE) is a theory-driven approach that focuses on exploring, understanding and explaining 'what works for whom, under what circumstance, how and why this occurs' to explain the interactions between contexts, mechanisms, and outcome (CMO) (Pawson et al. 2004, Wong et al. 2013). This paper reports findings from a qualitative study included in a broader RE of health-system responsiveness to maternal mental health needs in Vietnam and Ghana (Mirzoev et al. 2021b).

REs typically involve development, testing, and refining of middle-range theories which explain which contextual (C) influences trigger which mechanisms (M) to produce the outcomes (O) of interest (Wong et al. 2013) Development of an initial programme theory (PT)—a hypothesis of how programmes or interventions contribute to outcomes—often involves combining three sources of information: (i) the research team relying on their experiences and knowledge of the social-cultural context, (ii) insights from theoretical and empirical literature, and (iii) views of key actors from the data and relevant documentation. Subsequent testing and refining of theories are done iteratively throughout data collection and analysis and drawing upon the above three sources of information. Consequently, results reported in RE studies often reflect these three intertwined sources.

A critical aspect of the analysis process in realist studies is 'retroduction', the intentional approach to uncover connections within social systems and experiences (Bhaskar 1978). In practice, this involves the process of 'showing the workings out' (Pawson 2006), the reasoning process followed by researchers to identify the underlying mechanisms and contextual conditions that explain observed patterns (outcomes) by 'looking backwards for explanation of how and why things may be' (Mcewan et al. 2024). Reporting this task is challenging as some experts caution against over-explanation while others emphasize the importance of making the retroductive process transparent (Mcewan et al. 2024).

In our study, retroduction began with a theory gleaning phase where our initial PT was developed by the research team, who met regularly to discuss, peer-review, and revise the draft, drawing on the literature and engagements with key stakeholders through an initial small number of interviews. Our team insights were summarized in several 'if–then–because' statements per different key area. One of the advanced versions of the initial PT, shown in Box 1, guided the data collection and analysis and was subsequently refined based on the stakeholders' perspective from the data, empirical and theoretical literature, and researcher deliberations.

Box 1. Initial programme theory—notions of maternal mental health and influences on interaction with the formal healthcare system

In a socio-cultural context where mental health symptoms, specifically during pregnancy and the appropriate management of these symptoms, are understood by people as being in the domain of the spiritual; and where healthcare provision is pluralistic with providers from different paradigms (biomedical, faith, and alternative medicine) providing treatments based on different causal constructs of mental health; and where the current health system understands mental health as needing biomedical management approaches yet recognizes psychosocial causation such as drug abuse, emotional trauma; IF people's perspectives about mental illness and mental health and their appropriate management are better understood and recognised by the formal health system; and the services recognise and reasonably accommodate these beliefs and perspectives, THEN there will be a greater trust in and increased acceptance of maternal mental health services, translating into higher use of these services by pregnant women, ultimately contributing to improved responsiveness of the health system to the needs and expectations of pregnant women with mental health conditions.

This research was conducted in the Greater Accra region as part of the larger RESPONSE study (Mirzoev et al. 2021a). The Greater Accra Region, located in the coastal zone of the country, was purposively selected for several reasons. First, although the region is 90% urbanized and considered better resourced compared with other regions in the country, it was found to have one of the highest maternal mortality ratios of 336/100 000 live births, compared to the national average of 310/100 000 live births (Ghana Statistical Service, Ghana Health Service & ICF 2018, Mirzoev et al. 2021a). Also, it has a growing squatter urban slum and some of the most deprived rural communities in the country (Ghana Statistical Services 2021, Mensah et al. 2021, Mactavish et al. 2023).

Furthermore, ~8.3% of the region's districts have not been completely urbanized (Ghana Statistical Services 2021). Two of these rural districts—Shai-Osudoku and Ningo-Prampram—were purposively sampled. The 2021 population

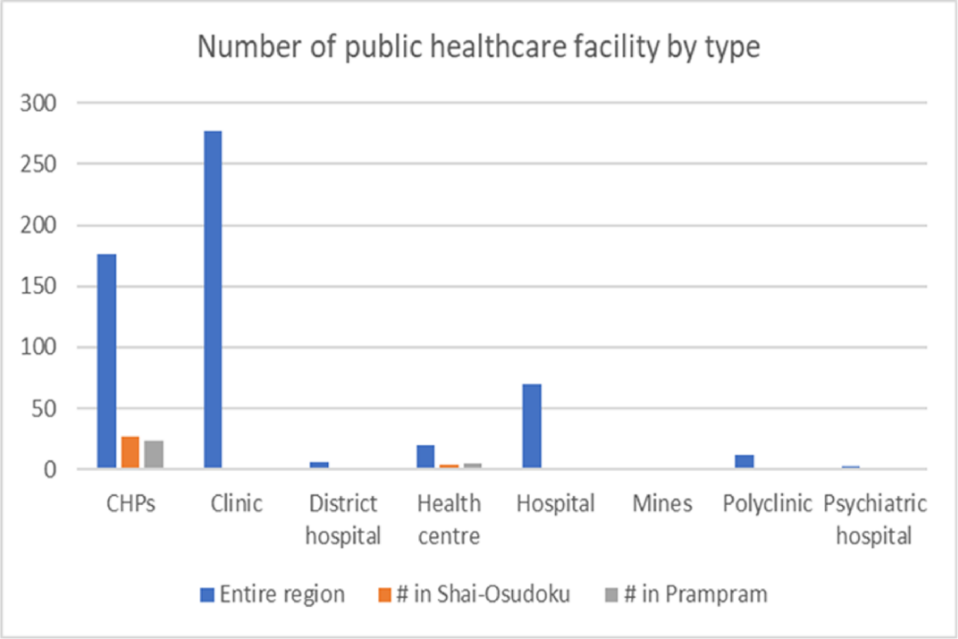

Figure 1. Public healthcare infrastructure in the region vs study sites.

and housing census revealed that out of a total 105 610 population in the Shai-Osudoku district, 60 050 (57%) lived in rural localities, with the rest residing in urban localities, while in the Ningo-Prampram district, out of a total of 204 673 people, 161 090 (79%) resided in urban localities and the rest lived in rural localities (Ghana Statistical Services 2021).

A poverty incidence study in Ghana in 2015 found that most households in the two districts were extremely poor compared to the regional average of 6.6%, with a poverty depth of 1.8%. In the Shai-Osudoku district the poverty incidence was as high as 55.1%, and that of the Ningo-Prampram district was 31.2%. They also had higher poverty depths of 23.2% for Shai-Osudoku district and 10.1% for the Ningo-Prampram district (Ghana Statistical Service 2015). Subsistence agriculture (farming, fishing, poultry, and cattle rearing) employ 85.6% of the working populations in these districts (Ghana Statistical Service 2014). Furthermore, the rural settlements in these two districts lag behind in equitable distribution of developmental gains within the Greater Accra Region, particularly in terms of road infrastructure, socio-economic development, and healthcare facilities. This disparity mirrors the conditions found in less endowed regions of Ghana, such as the Northeast, Savannah regions etc. (Ghana Statistical Services 2021, Mirzoev et al. 2021a). For instance, these two districts have the least healthcare infrastructure (including psychiatric hospitals) in the region (see Fig. 1) (Ghana Health Service 2016). Therefore, as in most parts of Ghana, traditional and faith healers play a large role in the informal primary healthcare of mentally ill patients, including pregnant women (Ae-Ngibise et al. 2010).

Ghana's primary healthcare organization

Primary healthcare in Ghana is delivered at three levels: district, sub-district, and community level (Fig. 2). At the apex of the primary healthcare structure are district hospitals or polyclinics (Armah and Kicha 2020). District hospitals provide comprehensive healthcare services (curative care, preventive care, and promotion of heath to the people) within a district with an average population of 100 000–200 000 people, in a clearly defined geographical area. These facilities usually have between 50–60 beds and serve as the first referral points for sub-district facilities in their district (Phillips et al. 2020).

At the second level are sub-district health centres or health posts. Health centres are expected to serve a population of ~20 000 (Armah and Kicha 2020). These health centres are often headed by a physician assistant and staffed with a range of healthcare professionals such as clinical nurses, midwives, laboratory technicians, public health nurses, environmental health and community psychiatric officers and nurses, and nutrition officers. Health centres provide basic curative and preventive medicine for adults and children, as well as reproductive and mental health services. In some cases, they can provide minor surgical services such as incision and drainage (Armah and Kicha 2020). They extend their service to cover outreach services and refer severe or complicated cases to higher-level facilities—usually the district hospital. Traditionally, health centres have been the first point of referral contact for lower-level healthcare facilities such as Community-Based Health Planning and Services (CHPs), private maternity homes, community pharmacies, traditional birth attendants, herbalists, prayer camps etc. Although maternal and mental health services operate at the health centre level, the two healthcare delivery systems operate independently, and these services are often treated as separate issues rather than interconnected aspects of overall health. The availability of trained staff who can address both maternal and mental health needs is limited.

At the third and final level of healthcare delivery are lower-level healthcare facilities such as CHPs and private maternity

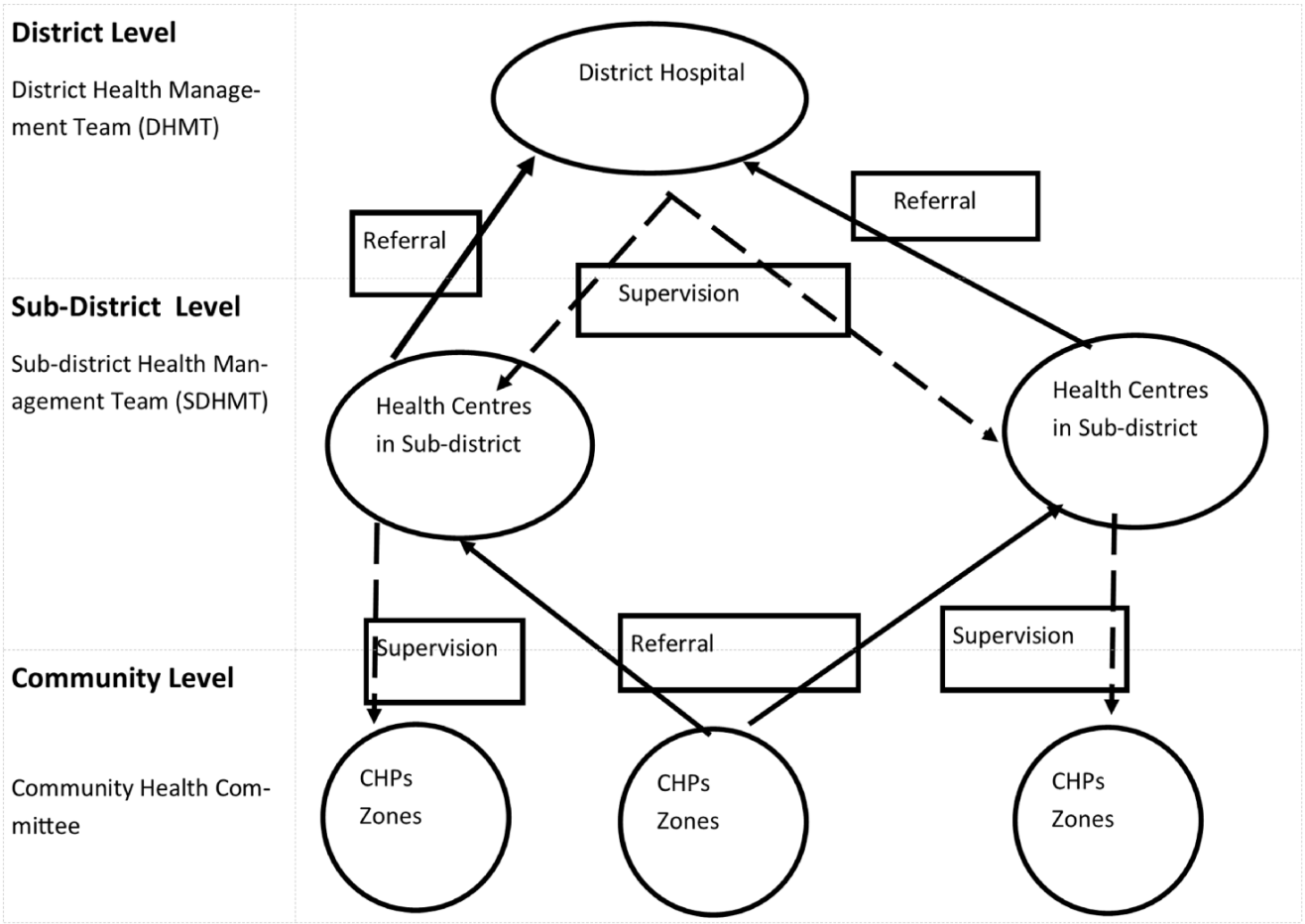

Figure 2. Ghana's primary healthcare organization.

homes, among others. CHPs entails a nurse or midwives living in a defined community and offering limited curative and preventive healthcare services in the community (Awoonor-Williams et al. 2016). Also, at this level are private healthcare facilities and informal sectors such as private maternity homes, community pharmacies, traditional birth attendants, herbalists, traditional, and faith-based healers etc. (Quinn 2007).

Traditional and faith-based healers are heterogeneous groups that have been observed to commonly vary in size and range, from small shack-like structures to entire village communities with large church halls, prayer camps etc. (Ae-Ngibise et al. 2010). Prayer camps, for instance, are often staffed by caretakers, pastors, and church elders. They may also be led by a prophet or prophetess, who acts as the chief healer, spiritual leader, and administrator of the camp (Arias et al. 2016). Usually, most prayer camps have been found to be under-resourced, lacking adequate shelters, bedding, mosquito nets, cleaning supplies, and sanitation facilities (Arias et al. 2016). However, due to the large biomedical treatment gaps in mental health, a substantial number of people with serious mental illnesses in Ghana (including pregnant and lactating mothers) have been found to rely on traditional and faith healing to meet their mental disorders treatment needs (Lambert et al. 2020).

Sampling

Facilities sampling

Nine primary healthcare facilities made up of CHP compounds, health centres, and a polyclinic that provide maternal health and/or community psychiatric services were purposively selected. The selection criteria aimed to include a mix of facilities based on their geographical accessibility, encompassing remote, accessible, and hard-to-reach communities. Six facilities (four CHP compounds and two health centres) were sampled in the Shai-Osudoku district and three facilities (a CHP compound, a polyclinic, and a health centre), were selected in the smaller Ningo-Prampram district (see Table 1, for a breakdown of the geographical accessibility of the sampled facilities).

In addition, one prayer camp located in the Doryumu community of the Shai-Osudoku district was purposively sampled because it was the only alternative mental care facility that accepted and consented to participate in the study.

Participants sampling

The data collection team (L.L.Y. and L.G.) compiled mobile-phone contacts of maternal health clients from the sampled facilities. This included maternal health clients with and without mental health conditions, as well as vulnerable groups—such as adolescent mothers and maternal clients living in

Table 1. Sampled facilities according to geographical accessibility

Ningo prampram district	Geographical accessibility	Shai osudoku district	Geographical accessibility
Prampram polyclinic	Easily accessible	Lower Dodowa Health centre	Easily accessible
New Ningo CHPs	Accessible	Ayikuma CHPs	Easily accessible
Old Ningo health centre	Remote	Osuwem CHPs	Remote
		Doryumu CHPs	Remote
		Natriku CHPs	Remote
		Duffour Health Centres	Hard-to-reach

marginalized communities (e.g. nomadic settlements). A total of 20 random maternal health clients from each of the facilities listed were contacted and invited to participate in focus group discussions (FGDs) or in-depth interview (IDIs). The women were also informed during the process that their round-trip transportation costs to the scheduled venues would be compensated by the research team.

In all, 76 maternal health clients did not agree to participate in the research for reasons such as travel, among others. Overall, 104 the maternal health clients agreed to participate in the study. Women who agreed to participate in the study were asked to select a preferred day and time to meet with the data collection team at the sampled facility in their community. On the scheduled day and time, the healthcare providers suggested different venues for the group discussions and interviews. These included newly constructed healthcare infrastructure yet to commence operations, and nearby religious premises, which were often used by healthcare providers for healthcare-related activities such infant growth monitoring and immunization services.

Prior to conducting FGDs and IDIs with maternal clients with mental health conditions, L.G. (a psychiatrist), clinically assessed the women's ability to consent and participate in the study. L.G. evaluated their understanding by asking them to repeat back to the interviewer in their own words what they understood from the information given about their participation and the study. Two clients who were unable to restate the information were excluded from the FGDs and IDIs. Instead, IDIs were conducted with the accompanying relatives, to ensure that relatives' perspectives and experiences were included in the study.

Separate FGDs were held with postnatal women with mental conditions/disorders and those without mental health disorders. A total of 10 FGDs were held with pregnant and postnatal women without mental health conditions (n = 75), 1 FGD was held with pregnant and postnatal women with mental disorders (n = 10), 3 FGDs were held with marginalized and vulnerable groups such as adolescent mothers (n = 19), and 4 FGDs were held with healthcare providers who provide maternal or mental health services at the primary healthcare level (n = 17). FGDs allowed for in-depth exploration among individuals who share experiences, opinions, and practices on mental disorders. The FGDs were held at private places situated within or close to the facilities premises, as earlier mentioned. The moderated discussions were audio-recorded and sometimeshandwritten notes were taken. Most FGDs with the women were conducted in Twi, and occasionally in Ga-Dangme or Ewe languages, and in English with the healthcare providers. Most discussions lasted 45 min to 1 h. The participants were compensated for their travel to the respective discussion venues (up to 100 Ghana cedis, or US$7 equivalent) and were also provided with lunch.

Semi-structured in-depth realist interviews (Pawson 1996, Manzano 2016) (IDI) (n = 6) were held with postnatal women with mental health conditions (n = 2), their relatives (n = 2), and healthcare providers (n = 2) who provide maternal mental health services at the primary healthcare level. The IDIs enabled in-depth exploration of experiences and views of the participants with regards to maternal mental health. The individualized approach is important given the sensitivity and stigma around mental health. However, during fieldwork, most of the women without mental health conditions preferred the group discussions to individual interviews. They often stated the uncertainty of what questions to expect as a key reason. Semi-structured question guides were used for the FGDs and IDIs.

All FGDs and IDIs were transcribed verbatim for analysis. For quality control, a second translator reviewed a subset of the transcripts (25 transcripts). Although respondent identities were removed and anonymized transcripts were analysed, background characteristics of respondents and fieldnotes observations were incorporated into the transcripts. Secondary data was gathered from district and facility reports (Ghana Statistical Services 2021, Ningo-Prampram District Assembly 2023) and peer review journals on wider national and community related features which (in)directly influence maternal and mental health perspectives, issues, and impact on health-system responsiveness. This approach facilitated the emergence of different 'nuggets of evidence' at various stages of the analysis (Mirzoev et al. 2020).

An initial thematic analysis (Clarke et al. 2015) was used to identify emerging themes with respect to CMO configurations. The same process was used in the analysis of secondary data. After initial analyses, emerging findings were shared and validated with all study participants and other relevant stakeholders (hospital leaders, department of social welfare, women, and men etc.). Subsequently, in this final stage, the retroductive approach to analysis continued by testing and further refining our initial PT with the support of substantial social science theory. Since different substantive middle-range theories could be investigated to enhance the transferability of any subsequent findings, to identify potential middle-range theories we conducted a literature scoping exercise, using key themes from our research as search terms. We searched Google Scholar and reviewed theories related to maternal mental health integration, stigma, cultural and spiritual beliefs in pregnancy, and other relevant areas. Ultimately, we selected the ecology of birth framework due to its explanatory potential (Shearn et al. 2017) in the context of LMICs. The process of retroduction involved moving (backward) from a surface phenomenon captured in the empirical data and conducting a deeper causal understanding of the situated insight through interpreting and re-contextualizing particular actions and perspectives, triangulating empirical data, and digging data from secondary data sources and the support of ecology of birth theoretical framework, which allowed for theory consolidation and the development of final PTs.

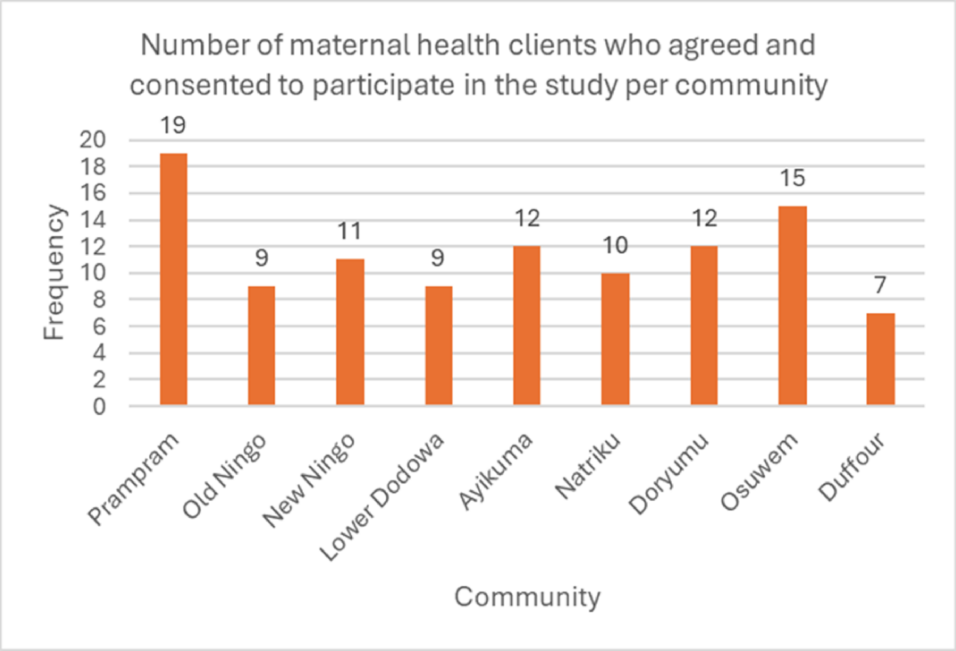

Figure 3. Number of maternal health clients who participated in the study per sampled community.

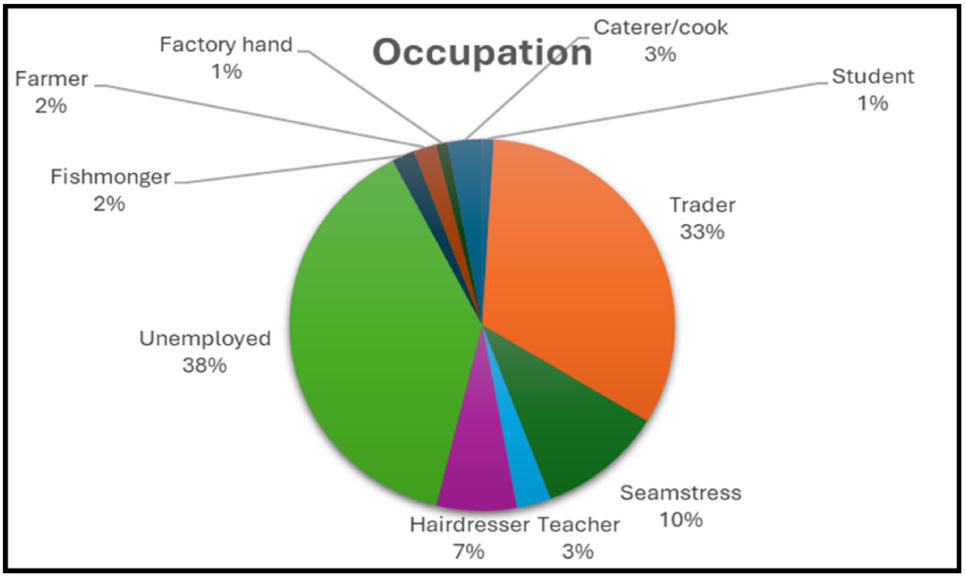

Figure 4. Educational level of maternal health clients (with)out mental health disorders.

Results

Background and demographic characteristics

A total of 104 pregnant and postpartum women with and without mental health conditions agreed to participate in the study. Most participants where from the Prampram and Osuwem communities, with the fewest coming from the Duffour community (Fig. 3). This distribution may be influenced by the geographical inaccessibility to public primary healthcare facilities in the community. In Prampram and Osuwem communities, (Adjei-Sowah 2020) the main public primary healthcare facilities are located within a 10 min walk. In contrast, most families in Duffour live in scattered and hard-to-reach areas, with primary healthcare facilities located much farther away. In most cases, families accessed their healthcare facility by personal bicycle or commercial motorbikes, popularly known as 'okada' (Adjei-Sowah 2020).

The mean age of the maternal health clients who participated in the study was 27.25 years. The youngest mother was 15 years old and the oldest mothers were 49 years old. Most of the mothers (95%)—including women with mental health disorders—had only attained basic levels of education (i.e. primary, junior, and senior high school education) (Fig. 4), and the remaining five percent (5%) had no formal education.

Table 2. Respondents profession, years of practice, and educational level by district

Professional training	Shai-osudoku	Ningo-prampram
Midwife	3	3
Community health nurse	4	4
Psychiatric nurse	2	2
Clinical nurse	0	1
Total	9	10
Years of experience	Shai-Osudoku	Ningo-Prampram
<1 year	1	2
1–10 years	8	7
≥11 years	0	1
Total	9	10
Highest level of education	Shai-Osudoku	Ningo-Prampram
Certificate	1	2
Diploma	8	6
Degree	0	2
Total	9	10

The low educational levels of the maternal health clients may explain why most of them were either unemployed or worked in the informal sector of the Ghanaian economy as petty traders or artisans (seamstress, caterer/cook, and hairdressers, etc.) (see Fig. 4). Only 3% of these maternal health clients were employed in the private formal sector, working as factory hands or untrained teachers, while 1% was an in-school adolescent mother.

Four FGDs (n = 17) were held with different healthcare professionals, and 2 IDIs were held with community psychiatric nurses (CPNs) in the two districts. The aim of the separate IDIs with the CPNs was to identify differences in their response when they were not in the presence of other healthcare professionals, who often stigmatize them due to their specialization and association with mental health clients. Many of the primary healthcare providers were female (n = 18) and one of them was a male CPN. Community health nurses formed the majority of the providers (n = 8), followed by midwives (n = 6), CPNs (n = 4) and one clinical nurse (see Table 2).

The primary healthcare providers' ages ranged from 24 to 52 years and they had practiced their profession over periods of <1 year to 34 years. Despite the differences in years of practice, the levels of participation and perspectives on maternal mental health and health-system responsiveness were not significantly impacted, reflecting a broad spectrum of experiences.

Temporality and embodiment: the intricate intersection of pregnancy with mental health

The group discussions with healthcare providers showed that modern healthcare providers care processes are not always able to accommodate women's expectations about access to care during pregnancy and postnatally as these are not aligned with their needs. This relates to primary recognition of a clock-time and unawareness or downplaying patients' felt-time. Such a disconnect between the two forms of time sometimes resulted in 'conflict' situations between providers and clients, e.g. women's perception that medicines must be given quickly in the care process as part of a prompt attention to their needs. This contradicted a biomedical expectation of waiting for results of investigations before dispensing medicines, a practice which contrasted with the approach of alternative care providers.

> *"…Some of the pregnant women come with hallucinations to access care and after assessment, if you ask them to conduct some labs [laboratory investigations], to rule out any infections, they will start fighting you because of the investigations. For this reason, they will leave and go to the traditional healers for herbal concoctions …"* (Community psychiatric nurse, FGD).

Prompt attention can be obtained, instead, from alternative healthcare providers. This temporality disconnection also informs their perceptions of health-system responsiveness to this expectation when receiving care when women either feel anxious, stressed, or depressed in pregnancy or after delivery. Perinatal women with mental disorders often have subjective time frames with regard to receiving treatment for their condition. When this expectation is often not met in the context of resource-constrained systems, such as the Ghanaian health service, this tends to impact on health-seeking behaviours and how clients experience a health-systems responsiveness to them.

Although mental illnesses tend to be considered chronic conditions, when they are interlinked with pregnancy they are often inherently and repeatedly embodied within the pregnancy and postnatal temporal processes. That is, CMDs seemed to be synchronized to the pregnancy or postnatal clock-time, as one participant explained when referring to a pattern of low mood in the postnatal stage during all her pregnancies:

> *"After the birth of all my children I become unkempt and weak, I can sit in the room doing nothing, although I might want to do something […] "The child will be crying but I did not care…"* (Postnatal woman with mental health condition, IDI).

The poor attention to women's felt-time around pregnancy and childbirth has been found to often leave postnatal women vulnerable to mood disorders and feelings of dissatisfaction with health systems. This is particularly important as mental health conditions operate in different temporalities, often related to cyclical relapse/recovery times which may be associated with pregnancy and postnatal hormonal imbalance (Von Peter 2010).

Relationality: the interconnection of contextuality, gender, socio-economic issues, health beliefs, and uncertainty in pregnancy

Our results showed that socio-cultural values, norms, and practices—such as the system of patriarchy and gender relations—affected women's psychological well-being during pregnancy and delivery, e.g. through constrained familial support, particularly financial support from spouses. Traditionally, parents in the two study settings prefer to educate their sons over their daughters, thus making women more economically dependent on men for their daily needs (Boateng 2009). Therefore, when the pregnancy occurs, women's vulnerability

Table 3. Background characteristics of other respondents

Type of respondent	Age	Relation to maternal health client	Occupation	Highest level of education	Years practice in the camp
Patient relative one (#1)	43	Aunt	Domestic help	Junior High School	Not applicable
Patient relative two (#2)	28	Cousin	Student	Senior High School	Not applicable
Prayer camp church elder	60	Not applicable	Lay pastor	Middle School level certificate (equivalent to Junior High School)	17 years

is exposed and increased. The women often attributed their emotional distress to poor familial or financial support:

The three other participants in the study, consisting of two relatives (an aunt and cousin) and an alternative healthcare provider, were aged 43, 28, and 60, respectively. Similar to the maternal health clients, all three had completed basic education, (Junior and senior high school levels). The aunt's relatively low educational level may explain her employment in the informal sector as a domestic helper. The alternative healthcare provider, the lay pastor, had been practicing in the camp for 17 years (see Table 3).

> *"When you are pregnant and you go to the hospital, they [health staff] will give you a list of things to buy, take a scan. But if you inform your man, he will tell you "I do not have money"… When this happens… you will worry and start thinking a lot… Your brain will become hot, and it will make a sound like this "Kwi". This is a signal that you are going off"* (Pregnant woman without mental disorder, FGD).

Our results reveal that traumatic events disproportionately impacted the mental health of women from poor socio-economic backgrounds because they could hardly turn to their spouses or family for support. Women were often left on their own by their partners during pregnancy or delivery. For women with a history of mental illness or a history of risk pregnancies, the vulnerability can be even worse. For instance, a relative of a woman with mental health conditions explained how despite already having two children together, her sexual partner did not accept her as a long-term partner due to the stigma associated with her mental health. The woman resided with extended family, but they asked her to leave just before labour as they knew of her requirement for a C-section based on previous deliveries:

> *"…when she was due for delivery, they [family members] sacked her with her belongings at midnight to come to my house… I also did not even have 1000 [Ghana] cedis. The [facility nurse] had already told us that when she is due for delivery, she should go to Battor (location of a secondary healthcare facility) for the operation… I took her to a nearby private facility. The doctor requested for a cash deposit. I did not have money, so I called family members for financial assistance before she was given care"* (relative of a postnatal woman with mental health condition, (IDI).

Even when women had to deal with grief, bereavements, and fear of uncertainty in addition to financial constraints, they often had to experience these on their own, as shared by one participant:

> *"I was pregnant with the second when my child passed on. The pain the child went through, contributed to my thinking a lot. And you see the home is not very good [meaning poverty] and that increased the pressure on me. From the moment my child fell ill my husband also started misbehaving by going after other women"* (postnatal woman with mental health condition, IDI).

Unsurprisingly, women related their mental health conditions to these traumatic events due to financial or medical burdens. To ensure the physical and psychological well-being of pregnant and postnatal women, the quality of relationality is crucial. Relationality refers to the social support that women receive within their social network, such as from kin members and particularly partners (Crowther and Hall 2017b, Crowther et al. 2020). Social support aids women's engagements in the appropriate self-care amidst being emotional and spiritually safe. Conversely, lack of familial support can negatively impact women's health and mental well-being through their feeling alone, disconnected, unsupported, powerless, and helpless.

Nevertheless, there is sometimes an anchoring companion from healthcare staff such as a caregiver or midwife, or community-based opinion leaders, who can support the woman through showing them kindness, attention, exhibiting a respectful attitude, and providing them with 'sensitive' care:

> *"During my pregnancy, my husband took to his heels and family members did not also support me. But luck shone on me, when one of the midwives informed me that the MP for the district was celebrating his birthday. She had explained my situation to him… The midwife's intervention made the MP help me financially… After that he said he will take care of me till I delivered the baby"* (postnatal woman without mental health condition, FGD).

Thus, the Ghanaian context of socio-economic status, socio-cultural values, and gender norms that privilege men, together with insufficient familial support, appears to cause abandonment and crisis-generating emotional, financial, and social distress for postnatal women. Systemic deficiencies in support structures for women, particularly the poor, become glaringly apparent during the delivery and postnatal period, when women require heightened care. While communities and public healthcare facilities do provide some form of safety net, these are often reliant on goodwill rather than institutionalized support, leaving women at the mercy of unpredictable care to address their complex needs.

Spatiality and mystery: socio-cultural beliefs, private providers, and the role of faith in offering protection

We found that socio-cultural beliefs around pregnancy, and causes associated with mental disorders, can impact health-seeking behaviours, combined with the uncertainty (mystery) associated with pregnancy and mental illness, as explained by one of our participants:

> *"Most times when people get pregnant, some people can look at them with evil eyes. That is why pregnant women are advised not to fight or talk back when anyone provokes them. As such people will deliberately provoke you, and when you react, they will tie your baby in your womb. That is why we go for prayers to protect ourselves from these evil people"* (pregnant woman without mental health condition, FGD).

The related perception that mothers can also bring the evil eye upon themselves, shows how women can blame themselves for negative outcomes in pregnancy and how the risk behaviours to be avoided are associated with normative patriarchal beliefs about being 'good women'. Childbirth has been found to be perceived by many cultures as more than a westernized biomedical experience. Childbirth is a time of spiritual vulnerability when malevolent spirits or others can influence mothers' spiritual well-being and the health of the foetus (Hanely and Brown 2014). Therefore, when childbirth is experienced as spiritually and socially unsafe, religious beliefs and values can offer safety:

> "*…if you get pregnant, you must go to prayers especially, God will dwell on that to deliver you safely. That is why if a woman gets pregnant your legs should be short at the church house [meaning frequent church visits]"*(postnatal woman with mental health condition, IDI).

This safety mechanism operates through spiritual and through practical support in formal or informal healthcare settings. Some women, especially those with limited family support, found prayer camps a safer place to spend their first trimester of pregnancy. This is because of the socio-cultural beliefs that women are not supposed to show off their pregnancy as the foetus can be affected by malignant spiritual influences.

> *"Community members have the perception that when a woman is pregnant until three or four months, they do not have to let anybody know that they are pregnant. So, during this period they go to places like prayer camps for protection till everybody can see that they are pregnant before they come here [polyclinic] for antenatal care"* (midwife, FGD).

Women with better social networks may still seek help from prayer camps, particularly when informed of pregnancy complications such as the possibility of a C-section. Women felt that communication about pregnancy risks can at times increase fear and anxiety, which in turn generates the need for protection that could be fulfilled by religious establishments.

In the context of abandonment and physical, social, spiritual, and psychological vulnerability, some Christian women find prayer camps a safer space, which offers residential shelter and spiritual protection while they are hiding their pregnancy. However, some women can spend substantial time in those camps in different capacities:

> *"…We go to the prayer camps to attend to pregnant women there… Most of the prayer camps keep the people with mental conditions for a long time and often giving the excuse that if God has not spoken to him/her to discharge them…* (community psychiatric nurse, FGD).

In contrast, Muslim women who also share the worries of evil intervention in their pregnancy and of the power of prayers, seem to find a safe space in their individual structured daily praying:

> *"We Muslims also pray silently about all our worries in pregnancy. The prayer is between you and God. For us, what you open your mouth to say to God is what matters. There is a verse in the Qur'an that you can also read every day for protection. The imam can also pray for you, but he will not tell you to light a candle here, buy this oil. No, we do not do that* (postnatal mother without mental disorder, FGD).

Their imam can also pray for their general wellbeing, but he will not offer a tailor-made treatment composed of specific religious artifacts and rituals such as lighting candles, using ointments or holy water. In contrast to this finding, Muslim women in other cultures use pungent smells from charcoal and spices mixed with oils to deter evil spirits during pregnancy (Hanely and Brown 2014).

Our data showed that the value women place on spiritual interventions was, however, often not embraced by formal care providers in the care delivery process. This affected women's perceptions of degree of health-system responsiveness to their psychosocial needs and well-being. Nevertheless, our data also highlights the importance of active collaboration between the community-based psychiatric care providers with faith and traditional healers. Women can dip in and out of different providers for available support. For example, they can have free food and residential care during the first trimester in a prayer camp, while accessing drugs from a CPN, who in turn can provide services and assessment in prayer camps.

Despite healthcare staff's concerns about how women are cared for in these camps, women often lack social support as well as privacy and confidentiality in the healthcare facilities, which impacts on their stigma and consequently trust in the health system:

> *"We do not have the space and privacy. The psychiatry unit is also the disease control office and an injection room. Whilst you are doing an assessment another person will enter the place to receive an injection. Because of stigma, people do not want others to know that they have a mental health condition* (community psychiatric nurse, FGD).

We found that fear of stigma from public knowledge of their condition can drive women away from easily accessible but crowded facilities, turning them to private healers who are often in more secluded locations but cater for a community with similar beliefs and worries. Mental health conditions in

the prayer camps do not seem to be discriminated against, as camps are inclusive and based on a premise that everybody has problems (and sins), and people work through them with God's help. Residents of prayer camps have private cubicles for bible reading and praying that offer the necessary privacy and the opportunity to hide the pregnancy. However, prayer camps often comprise limited amenities, often only a thin mat on the floor, which can lead to negative health consequences.

Our data showed that alternative healthcare providers can tailor services to the financial capabilities of women, e.g. allowing access with payments later in instalments. Such an arrangement is not permitted in the public health setting:

> *"At the prayer camps, the leader is often a community member. So, women who go there and their financial situation is not good, she credits them the services, then the women can pay her later… The hospital is based on cash and carry. You cannot work and not collect money from clients later. If I do that, it means I must pay for the service, with my money"* (midwife, FGD).

Women further mentioned that alternative healthcare providers are better equipped with spiritual knowledge and skills to deal with their mental health conditions. Besides, even lay care providers exhibit positive attitudes and relate to women's felt space better than health facility workers trained to treat patients with dignity and respect:

> *"…you cannot take a condition with spiritual causes to the hospital for cure but to the church… The church takes good care of the person by pampering her, and free food too. In the hospital, they only concentrate on treating the physical causes of health problems… some of the doctors are not patient at all, especially the nurses… With this kind of attitude will they be able to deal with a woman mental health problem?* (pregnant woman without mental health condition, FGD).

Finally, the shortages of community psychiatric care providers and vertical organization of maternal and mental health services, contribute to the lack of maternal mental healthcare in primary care facilities. This was a source of worry for relatives of pregnant and postnatal women with mental conditions. Thus, in socio-cultural contexts where mental health symptoms during pregnancy and the postnatal period are understood by people as being in the domain of the spiritual, the role of trust in mental and maternal health systems is fundamental to make women feel safe and protected in using available services.

Discussion

This study explored perceptions and practices related to common mental health conditions in pregnancy and postpartum in two rural settings in Ghana by women, their relatives, and different healthcare providers. Our initial realist programme theory focused on increasing the understanding of how interconnected socio-economic issues relate to individuals (pregnant and postnatal women), their relationships, and their environment, and how all these influenced provision and care-seeking for maternal mental healthcare and the health system's responsiveness to women's needs and expectations. This PT was revised based on the results (Box 2).

Box 2. Revised programme theory

In a socio-cultural context based on gender norms that subordinate women and where there are systemic deficiencies that cannot always provide safety nets for women's basic needs, because antenatal and postnatal mental health symptoms are dynamically interconnected; and when the management of these symptoms are understood as being holistic (psycho-social-physical and spiritual) by women, their families, and providers; and where pluralistic healthcare provision (biomedical, faith, and alternative medicine) coexist and are used in parallel by postnatal women; when women's uncertainties and beliefs about maternal mental health are respected by all providers; and the services offered consciously recognise and reasonably accommodate these beliefs, and formal public healthcare services are not just based on goodwill but are able to give women a certainty of perceived quality of care, then women are likely to experience increased feelings of protection and safety that in turn could increase their trust in public health providers of maternal mental health services, translating into higher utilization of available care, and ultimately to better health-systems responsiveness to the needs and expectations of pregnant and postnatal women with mental health conditions.

By incorporating literature scoping, refining and reviewing propositions, and considering substantive theories through middle-range theory, we strengthened the rigour of our PT development, leading to a more profound understanding. For example, our results demonstrate that pregnant and postnatal women often face common mental health symptoms such as stress, anxiety, worry, and depression, corroborating research from elsewhere (Baker et al. 2015, Edhborg et al. 2015). Although, evidently hormonal changes are associated with these common mental symptoms (Van De Loo et al. 2018), other issues further contribute to the CMDs, such as gender socio-economic imbalance, social relationships, socio-cultural beliefs, values, norms and practices, health-system inadequacies, and structural factors. These factors, however, do not function individually and in isolation, but rather function in intertwined and dynamic ways to impact on women's mental and psychological well-being and the health system's responsiveness to women's needs.

We found that Crowther's ecology of birth conceptual framework (spatiality, relationality, embodiment, temporality and mystery) on the whole enabled in-depth understanding of the complexity of pregnancy and the post-partum period. However, our results suggest that 'contextuality' does not operate as a separate component but shapes the five other components (see Fig. 5). We could see, for example, how poor familial support causes abandonment and crisis-generating emotional, financial, and social distress for some women. Furthermore, socio-cultural beliefs, myths, and uncertainty (mystery) around pregnancy and causes of mental conditions impact on health-seeking behaviours. Consequently, women's search for protection and safety often moves them between different healthcare providers concurrently to benefit from what each place of care can offer (spatiality). In the context of the social, physical, spiritual, and emotional vulnerability of pregnant women with mental health conditions in

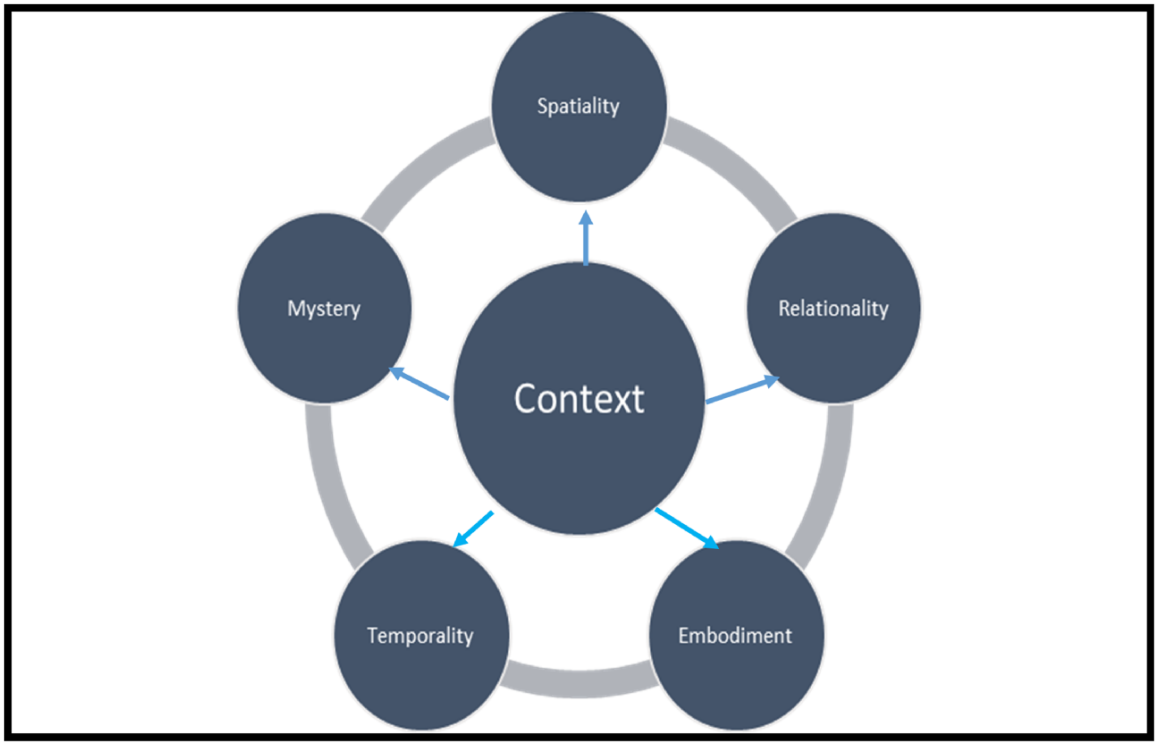

Figure 5. Revised ecology of birth framework [modified from Crowther, 2017 (Crowther and Hall 2017a)].

Ghana, faith institutions seem to offer more responsive services than public healthcare, as they align with women's felt-time through prompt attention, and deal with the uncertainty of childbirth with rules that reinforce those beliefs as risk-prevention strategies. For example, women especially those with limited family support or at risk of complications (embodiment), find prayer camps a safer place (spatiality) to spend their first trimester to manage the uncertainty (mystery) by searching for protection against malignant spirits and seeking spiritual growth and enjoy pampering (felt-space), while having an affordable place to reside, something the formal healthcare facility does not offer them, especially during pregnancy.

Public healthcare providers in Ghana work closely with alternative health providers, however, the social value the pregnant and postnatal women place on spiritual interventions in pregnancy is often not explicitly recognised in formal healthcare settings as part of the care-delivery process. This is because of the perceived biomedical causation of mental illness in the formal health sector, but also because health facilities do not have physical resources (quality of amenities) to honour women's felt-time (prompt-attention), ensure privacy, and maintain confidentiality, which are critical in the context of the pervasive stigma surrounding women's mental health in the Ghanaian culture. Instead, alternative healthcare providers offer an appealing choice to women. However, this choice is marked by a dependence on charity and goodwill rather than institutionalized and guaranteed support. Consequently, pregnant women find themselves vulnerable to unpredictable and potentially abusive assistance within prayer camps, that may not sufficiently address their multifaceted maternal mental health needs (Gyimah et al. 2023).

People's intersecting perspectives about mental illness and pregnancy need to be better understood by the public health system, so women can develop trust in systems and feel protected during uncertain times of pregnancy and childbirth. Responsive health systems should recognise and accommodate beliefs and perspectives while ensuring prompt attention, privacy, and dignity to this vulnerable and stigmatized group. This is of course challenging in many LMICs without substantial increases in amenities and quantity and expertise of the workforce. Co-producing context-specific interventions with multiple stakeholders (including women) can help formal healthcare providers to become more conscious about, and accommodate, pregnant and postnatal women's beliefs and perspectives about mental condition causation in their routine care. This can contribute to improved health-system responsiveness to maternal mental health needs and expectations. The study sample came from rural and peri-urban communities and all interviewed women visited public primary healthcare facilities. Therefore, the findings could not be generalized to urban populations and women who exclusively sought care from outside primary health care. Again, while we specifically focused on disadvantaged groups, future research could explore views of women of higher educational and socio-economic status.

Conclusion

The study highlights the vital role that context plays in provision and utilization of maternal mental healthcare in rural Ghana. Tailored interventions that engage and respond to relevant stakeholders, specifically women themselves and maternal mental health workers, arecrucial for enhancing

the health-systems responsiveness to maternal mental health needs. By recognizing, accommodating, and supporting the diverse beliefs and perspectives of pregnant and postnatal women, strengthening the capacities of maternal healthcare providers on mental health, can ensure a more inclusive, holistic approach to postnatal mental healthcare, which besides biomedical treatment also includes psycho-social and spiritual support to promote mental well-being during this critical stage.

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Authors contributions

All the authors conceptualized and designed the study. L.L.Y. and L.G. collected the primary data. All the authors conducted the initial analyses. L.L.Y. drafted the initial manuscript. A.M., T.M., I.A.A., S.K., E.A., and A.D.-A. critically reviewed the first manuscript draft. All authors read the subsequent draft, and read and approved the final manuscript.

Reflexivity statement

This paper presents research conducted by a diverse group of researchers, made up different gender identities and stages in their research careers (which is early- to mid-career and senior researchers). Three of the authors identify as men and five as women. It is also a multidisciplinary team, in a North–South collaboration. The team is made up clinicians, social scientists, biostatisticians, and public health experts. Four of the authors specialize in health policy and system evaluation, realist evaluation, and health-system responsiveness, and the other four specialize in biostatistics, systematic reviews, mental health, public health, and medical anthropology. All authors have experience with social science research and health policy and systems research in Ghana and in the West African sub-region.

Ethical approval

The study received ethics approval from the Ghana Health Service (ID: GHS-ERC:012/03/20), the London School of Hygiene and Tropical Medicine (ref: 22 981), and the University of Leeds School of Medicine Research Ethics Committee (ref: MREC19-051).

The research sites were given a copy of the ethical approval letters, and the district health directors and facility heads gave written consent for the research to be conducted. Written informed consent was obtained from participants who met the eligibility criteria. Again, consent for publication was obtained from all individuals whose data are included in this manuscript and they were also informed that their identity would be anonymized in any published article or written report.

Conflict of interest

None declared.

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Data availability

The datasets used for the current study can be made available by the authors based upon reasonable request.

Abbreviations

CHPs = Community-Based Health Planning and Services
CMD = Common mental disorders
CMO = Context, mechanisms, and outcomes
CPN = Community psychiatric nurse
FGD = Focus group discussion
IDI = In-depth interview
LMICs = Low- and middle-income countries
PT = Programme theory
RE = Realist evaluation

References

Adams G, Salter P. Health psychology in African settings: a cultural-psychological analysis. *J Health Psychol* 2007;**12**:539–51.

Adjei-Sowah M. 2020 A view from Accra City Hall: The "okada" phenomenon: to legalise or not to legalise? https://ama.gov.gh/documents/The_okada_phenomenon-to_legalize_or_to_maintain_the_ban_.pdf (30 August 2024, date last accessed).

Adjorlolo S, Aziato L. Barriers to addressing mental health issues in childbearing women in Ghana. *Nursing Open* 2020;**7**:1779–86.

Adjorlolo S, Christmals CD. Seeking and receiving help for mental health services among pregnant women in Ghana. *PLoS One* 2023;**18**:e0280496.

Ae-Ngibise K, Cooper S, Adiibokah E *et al.*, Mhapp Research Programme Consortium. 'Whether you like it or not people with mental problems are going to go to them': a qualitative exploration into the widespread use of traditional and faith healers in the provision of mental health care in Ghana. *Int Rev Psychiatry* 2010;**22**:558–67.

Agyekum B, Akotia C, Osafo J *et al.* Common perinatal mental disorders: a study of correlates, quality of life and birth outcomes among pregnant women in Accra, Ghana. 2022.

Arias D, Taylor L, Ofori-Atta A *et al.* Prayer camps and biomedicalcare in Ghana: Is collaborationin mental health care possible? *PLoS One* 2016;**11**:e0162305.

Armah P, Kicha D. Primary health care in Ghana: the structure and functions in relation to preventing neglected tropical diseases. *Archiv Euromed* 2020;**10**:12–17.

Awoonor-Williams JK, Tindana P, Dalinjong PA *et al.* Does the operations of the National Health Insurance Scheme (NHIS) in Ghana align with the goals of Primary Health Care? Perspectives of key stakeholders in northern Ghana. *BMC Int Health Hum Rights* 2016;**16**:1–11.

Badu E, O'brien A, Mitchell R. An integrative review of potential enablers and barriers to accessing mental health services in Ghana. *Health Res Policy Sys* 2018;**16**:1–19.

Baker R, Orton E, Kendrick D *et al*. Maternal depression in the 5 years after childbirth among women with and without perinatal depression: a population-based cohort study. *Lancet* 2015;**386**: S22.

Balabanoff D, and Fourer M. Disrupting the status quo to create the mindful space-spaces that 'sing'! 1st edn In: Davis L and S R (eds), *Mindfulness in the Birth Sphere: Practice for Pre-conception to the Critical 1000 Days and Beyond*. London: Routledge publications, 2022, 115–130.

Bauer A, Pawlby S, Plant D *et al*. Perinatal depression and child development: exploring the economic consequences from a South London cohort. *Psychological Med* 2015;**45**:51–61.

Bayrampour H, Mcdonald S, Tough S. Risk factors of transient and persistent anxiety during pregnancy. *Midwifery* 2015;**31**:582–89.

Bhaskar R. *A Realist Theory of Science*. Brighton, UK: Harvester, 1978.

Boateng S. *Factors militating against the academic growth of females in the Dangme-west district*. Masters University of Cape Coast, 2009.

Brown S, Sprague C. Health care providers' perceptions of barriers to perinatal mental healthcare in South Africa. *BMC Public Health* 2021;**21**:1–13.

Crowther S, Hall J. Childbirth as a sacred celebration. In: Crowther S, Hall J (eds), *Spirituality and Childbirth: Meaning and Care at the Start of Life*, Ist edn. London: Routledge Publications, 2017a.

Crowther S, Hall J. Spirituality and Childbirth: Meaning and Care at the Start of Life. Routledge. 2017b.

Crowther S, Smythe E, Spence D. Kairos time at the moment of birth. *Midwifery* 2015;**31**:451–57.

Crowther S, Stephen A, Hall J. Association of psychosocial–spiritual experiences around childbirth and subsequent perinatal mental health outcomes: an integrated review. *J Reprod Infant Psychol* 2020;**38**:60–85.

Dadi A, Miller E, Azale T *et al*. "We do not know how to screen and provide treatment": a qualitative study of barriers and enablers of implementing perinatal depression health services in Ethiopia. *Int J Ment Health Syst* 2021;**15**:41.

Daniel M, Njau B, Mtuya C *et al*. Perceptions of mental disorders and help-seeking behaviour for mental health care within the maasai community of northern tanzania: an exploratory qualitative study. *East Afr Health Res J* 2018;**2**:103–11.

Dutta G, Sarker B, Ahmed H *et al*. Mental health seeking behaviour during the perinatal period among rural in rural Bangladesh. *BMC Health Service Res* 2022;**22**:310.

Edhborg M, Nasreen H, Kabir Z. "I can't stop worrying about everything"-experiences of rural Bangladeshi women during the first postpartum months. *Int J Qual Stud Health Well-being* 2015;**10**:26226.

Fisher J, De Mello M, Patel V *et al*. Prevalence and determinants of common perinatal mental disorders in women in low-and lower-middle-income countries: a systematic review. *Bull World Health Organ* 2012;**90**:139–49.

Gelaye B, Rondon M, Araya R *et al*. Epidemiology of maternal depression, risk factors, and child outcomes in low-income and middle-income countries. *Lancet Psychiatry* 2016;**3**:973–82.

Ghana Health Service. *The health sector in Ghana: Facts and Figures facts in 2015*. Accra: Ghana Health Service. 2016. (15 November 2021, date last accessed).

Ghana Statistical Service. *2010 Population and Housing Census. District Analytical Report-Shai-Osudoku District*. Accra: Ghana Statistical Service. 2014. https://www2.statsghana.gov.gh/docfiles/2010_District_Report/Greater%20Accra/SHAI-OSUDOKU.pdf (9 October 2023, date last accessed).

Ghana Statistical Service. *Ghana Poverty Mapping Report*. Accra: Ghana Statistical Service. https://www2.statsghana.gov.gh/docfiles/publications/POVERTY%20MAP%20FOR%20GHANA-05102015.pdf 2015. (30 August 2024, date last accessed).

Ghana Statistical Service, Ghana Health Service & ICF. Ghana Maternal Health Survey 2017. Accra: Ghana Statistical Service. 2018.

Ghana Statistical Services. *Ghana 2021 population and housing census: General Report Volume 3A*. Accra: Ghana Statistical Service. 2021. https://statsghana.gov.gh/gssmain/fileUpload/pressrelease/2021%20PHC%20General%20Report%20Vol%203A_Population%20of%20Regions%20and%20Districts_181121.pdf (21 February 2023, date last accessed).

Goyal S, Gupta B, Sharma E *et al*. Psychiatric morbidity, cultural factors, and health-seeking behaviour in perinatal women: A cross-sectional study from a tertiary care centre of North India. *Indian J Psychol Med* 2020;**42**:52–60.

Gyimah L, Ofori-Atta A, Asafo S *et al*. Seeking healing for a mental illness: understanding the care experiences of service users at a prayer camp in Ghana. *J Relig Health* 2023;**62**:1853–71.

Hanely J, Brown A. Cultural variations in interpretation of postnatal illness: Jinn possession amongst Muslim communities. *Community Ment Health J* 2014;**50**:348–53.

Insan N, Weke A, Rankin J *et al*. Perceptions and attitudes around perinatal mental health in Bangladesh, India and Pakistan: a systematic review of qualitative data. *BMC Pregnancy Childbirth* 2022;**22**:293.

Kugbey N, Ayanore M, Doegah P *et al*. Prevalence and correlates of prenatal depression, anxiety and suicidal behaviors in the Volta region of Ghana. *Int J Environ Res Public Health* 2021;**18**:5857.

Lambert JE, Nantogmah F, Dokurugu AY *et al*. The treatment of mental illness in faith-based and traditional healing centres in Ghana: perspectives of service users and healers. *Global Ment Health* 2020;**7**:e28.

Lasater M, Beebe M, Gresh A *et al*. Addressing the unmet need for maternal mental health service in low and middle income countries. *Am College Nurse-Midwives* 2017;**62**:657–60.

Leis J, Mendelson T, Perry D *et al*. Perceptions of mental health services among low-income, perinatal African-American women. *Women's Health Issu* 2011;**21**:314–19.

Lima M, Tsunechiro M, Bonadio I *et al*. Depressive symptoms in pregnancy and associated factors: longitudinal study. *Acta Paul Enferm* 2017;**30**:39–46.

Mactavish R, Bixby H, Cavanaugh A *et al*. Identifying deprived "slum" neighbourhoods in the Greater Accra Metropolitan Area of Ghana using census and remote sensing data. *World Dev* 2023;**167**: 106253.

Manzano A. The craft of interviewing in realist evaluation. *Evaluation* 2016;**22**:342–60.

Marcus S, Flynn H, Blow F *et al*. Depressive symptoms among pregnant women screened in obstetrics settings. *J Women's Health* 2003;**12**:373–80.

Mcewan K, Girling M, Bate A *et al*. For Want of a Nail': developing a transparent approach to retroduction and early initial programme theory development in a realist evaluation of community end of life care services. *Int J Soc Res Methodol* 2024;**27**:417–30.

Mckillop E. *The lived experience and meaning of pregnancy in women with mild to moderate depression*. Master, University of Saskatchewan, 2009.

Mcnab S, Dryer S, Fritzgerald L *et al*. The silent burden: a landscape analysis of common perinatal mental disorders in low-and middle- income countries. *BMC Pregnancy Childbirth* 2022;**22**: 342.

Mensah J, Osae E, Asare K. Emergence of squatter settlements in the greater accra metropolitan area in Ghana: An issue of state failure or survival? *Int J Geogr Reg Plann* 2021;**7**:219–33.

Mirzoev T, Etiaba E, Ebenso B *et al*. Tracing theories in realist evaluations of large-scale health programmes in low-and middle-income countries: experience from Nigeria. *Health Policy Plann* 2020;**35**:1244–53.

Mirzoev T, Manzano A, Bui Thi Thu H *et al*. Realist evaluation to improve health systems responsiveness to neglected health needs of vulnerable groups in Ghana and Vietnam: study protocol. *PLoS One* 2021a;**16**:e0245755.

Mirzoev T, Manzano A, HA BTT *et al*. Realist evaluation to improve health systems responsiveness to neglected health needs of vulnerable groups in Ghana and Vietnam: Study protocol. *PLoS One* 2021b;**16**:e0245755.

Mitra A. Son preference in India: implications for gender development. *J Econ Issues* 2014;**48**:1021–37.

Nakku J, Okello E, Kizza D *et al*. Perinatal mental health care in a rural African district, Uganda: a qualitative study of barriers, facilitators and needs. *BMC Health Serv Res* 2016;**16**:1-2.

Ningo-Prampram District Assembly. *Health Department*. Prampram: Ningo-Prampram District Assembly, 2023.

Nsereko J, Kizza D, Kigozi F *et al*. Mhapp Research Programme Consortium. Stakeholder's perceptions of help-seeking behaviour among people with mental health problems in Uganda. *Int J Ment Health Syst* 2011;**5**:1–9.

Ofori-Atta A, Read UM, Lund C. A situation analysis of mental health services and legislation in Ghana: challenges for transformation. *Afr J Psychiatry* 2010;**13**:99–108.

Parsons C, Young K, Rochat T *et al*. Postnatal depression and its effects on child development: a review of evidence from low- and middle-income countries. *Br Med Bul* 2012;**101**:57.

Patel V, Rahman A, Jacob K *et al*. Effect of maternal mental health on infant growth in low income countries: new evidence from South Asia. *BMJ* 2004;**328**:820–23.

Pawson R. Theorizing the interview. *Br J Sociol* 1996;**47**:295–314.

Pawson R. *Evidence-based Policy: A Realist Perspective*. London: Sage, 2006.

Pawson R, Reenhalgh T, Harvey G *et al*. Realist synthesis-an introduction. *ESRC Res Methods Prog* 2004;**2**:55.

Phillips JF, Binka FN, and Koku J. Four decades of community-based primary health care development in Ghana. *Achiev Health for All* 2020;**15**:225.

Price S, proctor E. A rural perspective on perinatal depression: prevalence, correlates, and implications for help-seeking among low-income women. *J Rural Health* 2009;**25**:158–66.

Quinn N. Beliefs and community responses to mental illnes in Ghana: the experiences of family carers. *Int J Social Psychiatry* 2007;**53**:175–88.

Reuter P, Mcginnis S, and Reuter K. Public health professionals' perceptions of mental health services in Equatorial Guinea, Central-West Africa. *Pan Afr Med J* 2016;**25**.

Sawyer A, Ayers S, Smith H. Pre- and postnatal psychological wellbeing in Africa: a systematic review. *Affect Disord* 2010;**123**:17–29.

Shah A, Wheeler L, Sessions K *et al*. Community perceptions of mental illness in rural Uganda: an analysis of existing challenges facing the Bwindi Mental Health Programme. *Afr J Primary Health Care Fam Med* 2017;**9**:1–9.

Shamu S, Zarowsky C, Roelens K *et al*. High-frequency intimate partner violence during pregnancy, postnatal depression and suicidal tendencies in Harare, Zimbabwe. *Gen Hosp Psychiatry* 2016;**38**:109–14.

Shearn K, Allmark P, Piercy H *et al*. Building realist program theory for large complex and messy interventions. *Int J Qual Methods* 2017;**16**:1609406917741796.

Stein A, Pearson R, Goodman S *et al*. Effects of perinatal mental disorders on the fetus and child. *Lancet* 2014;**384**:1800–19.

Terry G, Hayfield H, Clarke V *et al*. Thematic analysis. 2nd edn In: Willig C, Stainton-Rogers W (eds.), *The Sage Hand book of Qualitative Research in Psychology*. London: Sage Publications, 2015, 17-37

Thompson R, Dancy B, Wiley T *et al*. The experience of mental health service use for African American mothers and youth. *Issues Ment Health Nurs* 2011;**32**:678–86.

Thoresen C, Harris A. Spirituality and health: what's the evidence and what's needed? *Ann Behav Med* 2002;**24**:3–13.

Van De Loo K, Vlenterie R, Nikkels S *et al*. Depression and anxiety during pregnancy: the influence of maternal characteristics. *Birth* 2018;**45**:478–89.

Verreault N, Da Costa D, Marchand A *et al*. Rates and risk factors associated with depressive symptoms during pregnancy and with postpartum onset. *J Psychosomatic Obstet Gynecol* 2014;**35**:84–91.

Von Peter S. The temporality of "chronic" mental illness. *Cult Med Psychiatry* 2010;**34**:13–28.

Wedajo L, Alemu S, Jarso M *et al*. Late postpartum depression and associated factors: community-based cross-sectional study. *BMC Women's Health* 2023;**23**:280.

Weobong B, Soremekun S, Ten Asbroek A *et al*. Prevalence and determinants of antenatal depression among pregnant women in a predominantly rural population in Ghana: the DON population-based study. *J Affect Disord* 2014;**165**:1–7.

White J. But isn't it the baby that decides when it will be born?': temporality and women's embodied experiences of giving birth. *Camb J Anthropol* 2016;**34**:72–86.

World Health Organization. *World Mental Health Report: Transforming Mental Health for All*. Geneva: World Health Organisation, 2022. https://books.google.com.gh/books?hl=en&lr=&id=lnkOEQAAQBAJ&oi=fnd&pg=PR10&dq=World+mental+health+report:+transforming+mental+health+for+all.+Geneva:+World+Health+Organisation.&ots=TTf_WNSt2n&sig=-TWxjkqpYYibP3eA0cdDZpKgqqY&redir_esc=y#v=onepage&q=World%20mental%20health%20report%3A%20transforming%20mental%20health%20for%20all.%20Geneva%3A%20World%20Health%20Organisation.&f=false (9 October 2023, date last accessed).

Wong G, Greenhalgh T, Westhorp G *et al*. RAMESES publication standards: realist syntheses. *BMC Med* 2013;**11**:1–14.