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Exploring facilitator perspectives on four participatory music-based interventions for perinatal mental health: a qualitative study

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ABSTRACT

Background: Participatory music-based interventions can promote mental health and connectedness across diverse contexts, including in the perinatal period. However, research on participatory music-based perinatal interventions is limited and typically focused on postnatal depression. This study explores the various elements of four music-based interventions supporting different severities of perinatal mental health needs.
Methods: Five musician leads and two clinicians were interviewed from four music-based perinatal interventions. Interviews explored the key features, goals, impacts and challenges of each intervention.
Results: A reflexive thematic analysis identified four themes: (1) Incorporating varied musical activities; (2) Fostering a supportive community; (3) Affecting psycho-emotional change; and (4) Strategies for accessibility.
Conclusions: This study demonstrates the multiple mechanisms through which participatory music interventions can promote perinatal mental health, including emotional regulation, self-compassion and coping skills. These findings can be used to guide future interventions for a wider spectrum of severities and types of perinatal mental health.

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Perinatal; mental health; participatory music; qualitative; intervention facilitation

Background

One in five women in the United Kingdom (UK) will suffer from a mental health illness during the perinatal period (Maternal Mental Health Alliance, 2023), which spans pregnancy to a year post-birth. Research suggests that approximately 12% of women in the perinatal period will experience depression and 13% of women will experience anxiety (Tripathy, 2020). Mental health conditions during pregnancy can have detrimental impacts on the infant, including premature birth and a range of childhood developmental

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delays (Lautarescu et al., 2020; Rees et al., 2019; Rondó et al., 2003). In addition, untreated perinatal mental health conditions are associated with reduced quality of life, increased risk of bonding difficulties with their infant and maternal suicide (Howard & Khalifeh, 2020; O'Higgins et al., 2013; Slomian et al., 2019). The growing scale of perinatal mental health illness has a significant long-term aggregate cost to society of £8.1 billion for each one-year cohort of UK births (Bauer et al., 2014). Structural discrimination of marginalised groups, based on ethnicity, gender, socioeconomic background and other social variables, raises the likelihood of mental health conditions (Yearby, 2022). Therefore, to enable these groups to reach their holistic health potential, coordinated treatments are required. In regard to perinatal mental health, when resources are limited due to competing health concerns, it is important to preserve the optimal functioning of women and their infants (Atif et al., 2015).

Several factors limit engagement with pharmacological and psychological interventions for perinatal mental health, including a lack of support for mild to moderate conditions, insufficient cultural sensitivity, structural barriers and a preference among women for informal treatment (Khanlari et al., 2019; O'Mahen & Flynn, 2008). To address these barriers to perinatal mental healthcare, the World Health Organisation (2022) has highlighted the urgency of providing cost-effective, human rights-oriented and community-based support. The use of arts-based interventions in the management of mental health conditions may fulfil this call, aligning with the preferences of perinatal women for emotional and practical guidance through creative and social activities (Feeley et al., 2016; Rodwin et al., 2022). Participatory music-based interventions can be used in the perinatal period to facilitate access to informal musical experiences in community settings, fostering improved wellbeing, mood regulation and social bonding (Juslin & Västfjäll, 2008; MacDonald, 2013; Savage et al., 2021). For instance, a study by Fancourt and Perkins (2018) found that group singing interventions for women with moderate to severe postnatal depression (PND) significantly improved symptoms and supported their emotional needs (Perkins et al., 2018). Participatory music interventions can also equip women with musical skills to use with their infant at home and reduce feelings of loneliness by connecting them with other women in their community (Fancourt & Perkins, 2019a; Perkins et al., 2023). Additionally, these interventions have been shown to reduce depression, anxiety and stress symptoms (Bind et al., 2023), including in countries with limited healthcare resources such as The Gambia (Sanfilippo et al., 2020).

Most research has focused on women with PND, so there is limited understanding of how participatory music can support a wider range of perinatal mental health disorders (Sanfilippo et al., 2021). Developing universal interventions that are applicable across the spectrum of mental health conditions could diversify treatment of moderate to severe mental health conditions, prevent escalation of symptoms and sustain mental wellbeing by consolidating recovery (Patel et al., 2018; Stewart et al., 2022). Furthermore, participatory music interventions could facilitate the engagement of women from different ethnically diverse backgrounds and help address health inequalities, which are cited as one of the determining factors associated with maternal death and morbidity in the UK (Knight et al., 2022). For example, participatory music-making can provide culturally sensitive support by enhancing identity, social wellbeing, language skills and empowerment (Lenette et al., 2016), as well as being offered universally

in community settings to reduce barriers related to stigma and mistrust of healthcare services. Although some prior protocols highlight core components of perinatal music interventions (Fancourt & Perkins, 2019b; Yorke & Perkins, 2017), they offer limited detail about the content of sessions and how specific psychosocial needs are addressed.

The present study explores the various elements of four participatory music interventions for promoting perinatal mental health in UK settings. We offer a holistic insight into the support mechanisms that music engagement can provide for perinatal women with a wide range of psychosocial needs. This study includes both interventions aimed at supporting general perinatal wellbeing and interventions aimed at women recovering from moderate to severe mental health disorders within specialist perinatal services. Therefore, this study aims to incorporate a broader spectrum of perinatal mental health severities than previously explored. The four interventions were held in varied settings, including specialist outpatient perinatal mental health services and community spaces (in-person and online), with some involving referral of participants by health specialists and others for which participants self-referred. Two of the interventions were inclusive of all women, including some with mild to moderate perinatal mental health symptoms, but the other interventions were specifically for women recovering from moderate to severe conditions. All four interventions were group-based, aiming to foster community and support wellbeing through music. The musical activities typically encompassed singing, songwriting, improvisation and playing instruments. This study uses qualitative methodologies to acknowledge explicit connections between the components, logistics, goals and impacts of the sessions from facilitator perspectives to enable a richer understanding of how various intervention elements target specific needs.

Methodology

Design

This qualitative research design used reflexive thematic analysis of interviews with facilitators of four participatory music-based perinatal interventions: *Intervention A*, *Intervention B*, *Intervention C* and *Intervention D*. These interventions were selected to encompass a wide range of settings and participants, including self-referred women with none to mild symptoms and women with more severe symptoms receiving secondary care through specialist outpatient perinatal mental health services. Table 1 provides further details about each intervention, including facilitator observations of participants' backgrounds and presenting symptoms. Facilitators across *Intervention A* and *Intervention B* observed ethnic and socio-economic diversity in their groups, which included participants from specialist perinatal psychiatric services with moderate to severe anxiety, depression, psychotic disorders or trauma. *Intervention C* and *Intervention D* had an observed lack of diversity amongst participants, some of whom presented with stress, low mood or trauma symptoms. Our study follows the Consolidated Criteria for Reporting Qualitative Research (Tong et al., 2007).

Table 1. Details of the four music-based perinatal mental health interventions.

Intervention details	Intervention A	Intervention B	Intervention C	Intervention D
Type of intervention	Outpatient perinatal mental health music intervention	Outpatient perinatal mental health music intervention	Community singing groups in different areas	Online improvisatory sessions
Stage of the perinatal period	Perinatal	Perinatal	Perinatal	Perinatal
Demographics of participants	Observed ethnic and socio-economic diversity in the group (including different ethnic backgrounds and social classes)	Observed ethnic and age group diversity in the group, reflecting inner London borough	Varied level of ethnic diversity between groups and not always representative of diverse communities	Observed lack of diversity amongst participants
Presenting mental health conditions	Referred from a secondary care specialist perinatal psychiatric service. Participants are at different stages of recovery from a mental health condition, including moderate to severe anxiety, depression, trauma disorder or psychotic illness	Self-referred or signposted by the specialist perinatal mental health community team. Participants are at different stages of recovery from moderate to severe mental health difficulties, including depression, anxiety, bipolar disorder, trauma disorder or psychotic illness	Referred by health professionals or self-referred to intervention. Some participants have mild to moderate symptoms of mental health disorders (such as stress or low mood)	Self-referred to intervention. Some participants have symptoms of mental health disorders (such as trauma)
Main goal of intervention	Foster community and wellbeing through singing	Improve mood, enhance mother-infant bonding and reduce isolation, with a focus on creating new music	Provide singing as a support in life for mental health and wellbeing and to foster community	Practice of wellness to feel calm and connected to self
Structure and average participant numbers	Group-based, average of 5 participants	Closed group of 10 mother-baby pairs	Group-based, varied number of participants	Group-based, average of 5 participants
Duration	1 hour, continuous sessions	1.5 hours, 10–12 weeks	1 hour, continuous sessions or 10 week funded programmes	1 hour, 5–6 sessions
Location	Community setting with referrals from a secondary care specialist perinatal mental health service, Greater London, England	Specialist outpatient perinatal mental health service, Greater London, England	Hospitals, mother and baby units, family hubs, sure start centres, primary care centres, community halls and other community venues, nationally across the UK and internationally	Online, based in Oxfordshire, England
Musical content	Singing, songwriting, playing instruments, improvisation, song sharing	Singing, songwriting, improvisation, hearing instruments, song sharing	Singing and song sharing with tea and cake	Singing, improvisation, somatic exercises

Participants

Seven participants (five musician leads and two clinicians) currently involved in facilitating perinatal participatory music interventions were directly recruited through purposive sampling in March 2023. The fourth and six authors had existing

Table 2. Summary of the main intervention and background of each facilitator.

Facilitator	Main intervention	Background
Musician Lead 1	Intervention A	Music workshop leader
Musician Lead 2	Intervention A	Music workshop leader
Musician Lead 3	Intervention B	Singing and songwriting workshops
Musician Lead 4	Intervention C	Nurse
Musician Lead 5	Intervention D	Singer, songwriter and vocal improviser
Clinician 1	Intervention A	Consultant in perinatal psychiatry
Clinician 2	Intervention B	Occupational therapist (perinatal)

connections with each participant and contacted them via email. The inclusion criteria stipulated that participants had to be currently facilitating in the UK, speak English and aged over 18. Each facilitator was de-identified and assigned a number, provided in Table 2 alongside their associated intervention and professional background.

This study received ethical approval from the Goldsmiths Research Ethics Committee and the City St George's, University of London, School of Health and Psychological Science Research Ethics Committee. Participants provided written informed consent after reviewing a participant information sheet and were reimbursed for their time.

Materials

The interview guide was created in collaboration with the research team. Open-ended questions asked facilitators to elaborate on the following areas of their associated intervention: (1) key features, (2) how musical and psychosocial components supported the overarching goals, (3) how the sessions were received, and (4) any relevant challenges. The semi-structured nature of the interviews allowed questions to be used flexibly alongside follow-up questions probing participants' responses. See the appendix for the full interview guide.

Procedure

Each facilitator completed a semi-structured interview with one of the three primary researchers between April and May 2023, with an average duration of 33 minutes (range = 25–39 minutes). Interviews were conducted via Microsoft Teams and video recorded with automatic transcription following the consent of each participant. Participants were aware of the reasons behind the research, but did not have any existing connections with the interviewer. No interviewees refused to participate or wished to withdraw. A draft of the manuscript was sent to all participants, offering them a chance to review our interpretations of their intervention to ensure their narratives were meaningfully centred in the analysis. All participants approved the manuscript for submission and no changes were made.

Analysis

The data underwent a reflexive thematic analysis (Braun & Clarke, 2006), considering how knowledge is constructed through the salient features of participants' responses

and encouraging awareness of researcher positionality. The analysis was completed by the three primary researchers, who conducted the interviews and also completed the write-up of the study. Two had academic backgrounds in music psychology, informing their focus on how the musical and psychosocial elements facilitated intervention impacts, and one contributed from a background in public health. Each of the analysts kept a journal to understand the subjectivities brought to each analytical step, following the principles of reflexivity inherent in our analytic approach (Braun & Clarke, 2019). For example, we acknowledge how our backgrounds and lack of personal perinatal experience led to the development of themes focused more on the content, facilitation and organisational aspects of the sessions. We also explored how our philosophical underpinning of critical realism impacted the analysis process. Critical realism acknowledges that there exists a reality or independent truth, which can only be observed through each individual's subjective perspectives. We used this approach to guide our focus on the meaning within each participant's responses, whilst recognising the wider contexts through which these meanings are mediated, such as previous professional experience. The fourth, fifth and sixth authors supervised the analysis and provided academic contribution to the manuscript. Through several meetings, they provided guidance regarding the complexities of the reflexive thematic analysis approach, reviewed the developing themes and encouraged deeper engagement in the nuances of each theme. Additionally, they reviewed and edited versions of the draft manuscript for intellectual and interpretive content.

Each primary researcher edited the automatic transcripts from their interviews using the recording to check for accuracy and distributed the transcripts amongst the research team on a password-protected drive. Transcripts were read several times for familiarisation and notes were taken to document preliminary thoughts. The three primary researchers individually systematically coded each transcript using Dedoose (2023), which involved identifying meaningful features of each participant's narrative. Both semantic and latent coding were used to explore the explicit and implicit meanings within participants' responses. The coding process was inductive to acknowledge the exploratory nature of the analysis and uncover meaningful participant-focused narratives through interpretation of the data, so no preconceived coding framework was used (Braun & Clarke, 2021). Following the principles of reflexive thematic analysis, the process was also conducted iteratively and flexibly, moving back and forth between stages to revise the codes as additional interpretations were considered (Braun & Clarke, 2019). The three analysts then collaboratively developed a map of themes and subthemes by collating the codes into coherent meaning-united interpretations. The themes were developed through aggregation of codes with shared meanings and multiple iterative discussions between the analysts. Collaborating across multiple coders facilitated richer and more in-depth interpretations recognising the nuances and complexities of participant narratives. Finally, themes were reviewed in relation to the whole dataset and refined with a clear definition through further analysis of their underlying data items. The analysts took several steps to address research rigour, including in-depth and ongoing familiarisation with the transcripts to ensure thorough engagement with the dataset. Regular meetings between the three analysts and consultation with the remaining authors were used to enhance the credibility of the analysis. Decisions made regarding the developing codes and themes, both individually and during group discussions, were documented with

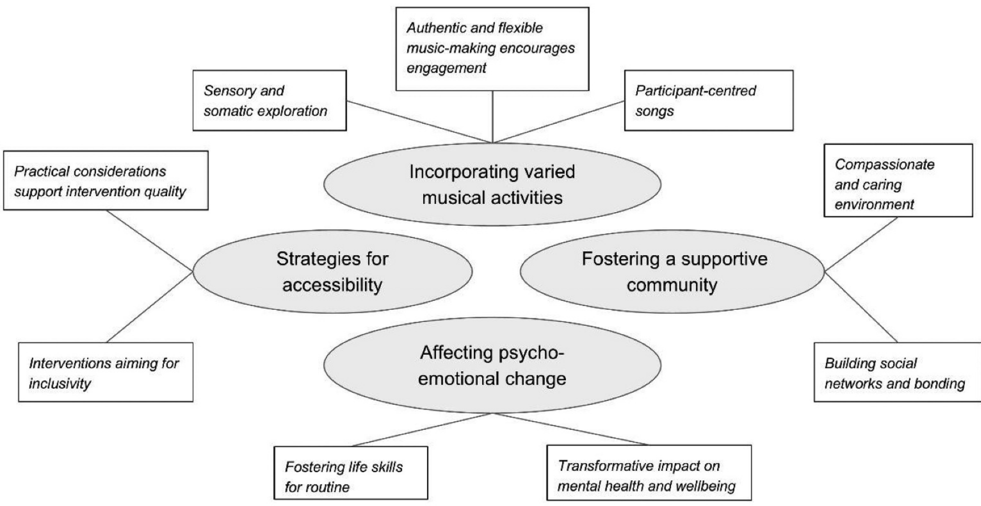

Figure 1. Themes and sub-themes from the reflexive thematic analysis.

justifications to ensure an in-depth and systematic audit trail of the analysis process. This was used alongside ongoing documentation of reflexivity to explicitly acknowledge how author subjectivities influenced the analysis approach and interpretations.

Results

Four themes incorporating nine sub-themes were identified, as mapped in Figure 1 and described below. The sub-themes explore the musical and social content, facilitator approaches, psycho-emotional goals and logistical considerations of the interventions and how these elements supported women with different perinatal mental health needs.

Incorporating varied musical activities

This theme highlights the range of musical activities provided across the four interventions, which facilitated feelings of discovery, familiarity, ownership and a sense of achievement for participants.

Sensory and somatic exploration

Sensory and somatic exploration refers to the musical activities which invited physicality to promote discovery, creativity and emotional grounding. For instance, two interventions incorporated different musical instruments, which enabled both the participants and their infants to have an accessible and multidimensional sensorial experience. The immediately noticeable changes in the infants' physical behaviour in response to the instruments was a poignant moment for participants.

> We deliberately have a really big drum which enables the babies to experience the sound with their full bodies, and . . . it's often a real revelatory moment for the mums (Musician Lead 2, *Intervention A*)

Other interventions focused on exploration through singing. *Intervention D* used improvisational vocal practices to invite somatic exploration grounded in the participant's own voice and body. Specifically, these exploratory practices provided safe spaces for participants to express feelings around motherhood and explore past trauma that may be difficult to confront.

> I would use [vocal improvisation] in a very meditative way and look at ... how we can invite resonance into different parts of our body. (Musician Lead 5, *Intervention D*)

The sensory nature of the instrumental and improvisatory musical activities enabled women to connect with themselves, both mentally and physically, as well as providing opportunities for shared exploration with their infant.

Participant-centred songs

Another musical activity used to connect with the women was "participant-centred" songs, which are here defined as songs that were chosen or composed with the participants to have significant meaning and support the group ethos. Participants were able to express their identities through the diverse song choices, which contributed to a shared sense of community taking ownership of the music.

> This woman started to sing [a childhood lullaby] and then another one said, "oh, I know this one!" and they started to sing together. So, there is that moment also of shared experience from countries which are very far away from London. I think that's something very cohesive. (Clinician 1, *Intervention A*)

Facilitators also guided the participants to express their experiences through songwriting. The co-creative dynamic of songwriting within the group encouraged participants to build confidence in actively influencing the sessions.

> The mums absolutely loved [personalised songwriting] – they all said they were going home and singing them to their babies. (Clinician 2, *Intervention B*)

By giving the women power to choose or write music to suit their needs, facilitators were able to create an inclusive and collaborative environment.

Authentic and flexible music-making encourages engagement

Facilitators also considered how their own voice might influence the group and perhaps stifle engagement from participants. Authentic music-making refers to the natural vulnerability of the human voice and how facilitators modelled this during the sessions by accepting natural vocal inflections and using a non-professional singing tone. By adopting an authentic approach, facilitators empowered women to have confidence in their musicality and further engage in the intervention.

> Real emphasis is on the vulnerability of our imperfect voices, perfectly imperfect voices ... I don't ever try and put on a kind of voice that is inauthentic (Musician Lead 2, *Intervention A*)

Facilitators also ensured the structure of the sessions was not formalised to encourage greater participation. The flow of music-making would occur flexibly "depending on what ... is resonating at the time" (Musician Lead 5, *Intervention D*) and facilitators

continually adapted their practice in response to participants' levels of reservation, mood and anxiety.

> Sometimes people have bad days, and you can see there was a very heavy atmosphere with negative emotions. And so, I could see that the musicians stepped back a little bit and adopted a much gentler pace. (Clinician 1, *Intervention A*)

This fostered a safe and non-judgemental space that resonated with participants and supported all types of engagement, enabling participants to bring their whole selves to the intervention and acknowledge their mental health difficulties.

The various kinds of musical activities discussed in this theme, coupled with the facilitator's ability to lead in a relaxed and responsive way, were essential aspects of the four interventions.

Fostering a supportive community

This theme emphasises the social elements of the interventions, including the general environment created and the collaboration that took place within sessions. Both aspects fostered wider social networks for the women during a time of potential isolation.

Compassionate and caring environment

The facilitators aimed to create a welcoming environment through their warmth, empathy and consideration of the physical space, which enabled a supportive and expectation-free community to develop.

> It's about the environment and setting up a sense of care and respect . . . And that goes down to things like lighting . . . I know a lot of the mums and babies get quite sensitive to the lighting (Musician Lead 2, *Intervention A*)

Within this environment, the focus on acceptance and care was emphasised, which enhanced accessibility for mothers with more severe mental health conditions.

> The aim really for us as a leader is to get that woman through the door . . . peacefully, restfully, gently (Musician Lead 4, *Intervention C*)

Therefore, creating a calm and welcoming social environment around the delivery of musical content was key to encouraging engagement from participants. Nevertheless, as explored in the following sub-theme, much of the social environment resulted from participants' own initiative to connect with others.

Building social networks and bonding

The inherent shared experiences of motherhood between group members supported a community feeling, which was enhanced by the collaborative musical elements. Many of the participants who were referred to the interventions had experienced social isolation alongside their mental health illness, so fostering these networks was an important aspect of the sessions.

> People look out for each other and they notice when people are struggling - they can relate very much (Musician Lead 4, *Intervention C*)

Becoming part of this social network fostered a feeling of self-worth for the participants.

> Just those tiny little chit chats that don't go into any depth I think actually are more powerful than we realised (Musician Lead 2, *Intervention A*)

The structure of the sessions provided opportunities for the group members to chat and develop a feeling of "sisterhood" (Musician Lead 1, *Intervention A*). Intervention participants also valued the chance for their infants to interact with others.

In summary, the supportive community established within each intervention relied upon both a caring facilitator who is sensitive to the group dynamic and the varied connections that participants made during and around the activity.

Affecting psycho-emotional change

This theme describes the mechanisms of emotional and wellbeing support that participants experienced, including the changes in mood observed by facilitators within each session and the longer-term impact for women who continued to use music outside of the sessions.

Transformative impact on mental health and wellbeing

The sessions were described as uplifting and something to look forward to, so had a significant positive impact on participants. Facilitators discussed the benefits of music for improving mood, which may also aid in alleviating certain aspects of poor mental health, such as depressive symptoms and stress.

> People would come in ... feeling pulled and untethered or stressed or whatever, and would leave the sessions feeling the opposite, feeling connected, feeling rested, feeling relaxed (Musician Lead 5, *Intervention D*)

Facilitators reported that participants had a strong sense of presence in the space, especially when engaged in a singing activity. The sessions offered participants time to focus on themselves and enjoy quality musical experiences. Attending the intervention also enabled women to feel confident in doing something positive for their infant and seeing the immediate benefits, such as increased alertness and other positive reactions to music. In doing so, the music interventions provided a space where participants could separate from other stressful and complex life struggles, such as domestic violence.

Fostering life skills for routine

Facilitators highlighted the importance of the sessions for supporting daily life and strengthening weekly routines, especially when participants took time to socialise with each other after sessions. Facilitators hoped that providing the foundation for incorporating singing into daily routine would provide a wellness tool that participants could use during difficult times to prevent relapse. Some participants told facilitators that they were using songs in the sessions as parenting tools, such as lullabies to soothe their infant and assist with the bedtime routine. These tools may also encourage mother-infant bonding and support participants to become further attuned to their infant's communication, which could be particularly

beneficial for those who have experienced struggles engaging with their infant due to poor mental health.

> To give women the practice of singing, so they've got singing as a support in their lives ... and it becomes a real support to them, their mental health and their relationship with their families (Musician Lead 4, *Intervention C*)

Strategies for accessibility

Several practical considerations contributed to the quality and accessibility of the sessions, suggesting various challenges for future interventions to overcome to maximise the impact of the musical and psychosocial mechanisms.

Practical considerations support intervention quality

Managing participant numbers was a key practical consideration. Clinician 2 (*Intervention B*) highlighted that "not enough people turning up was a challenge, but also if everyone did turn up ... the room can feel quite tight". Equally, a facilitator from *Intervention A* emphasised the importance of having enough participants to support musical quality.

> You need at least seven or eight women. Otherwise, it's just too vulnerable ... you want to feel like you're a cog in a beautiful machine. (Musician Lead 1, *Intervention A*)

Recruitment often relied upon clinical staff with a "personal interest in finding women who would really benefit" (Musician Lead 1, *Intervention A*), whereas other interventions were spread through local marketing and word-of-mouth. Furthermore, facilitators discussed various other practical strategies to encourage attendance, including session reminders and support with transport.

Interventions aiming for inclusivity

Facilitators were interested in making their respective intervention more accessible and inclusive, but participant diversity varied across intervention groups (see Table 1). Musician Lead 4 from *Intervention C* observed a lack of diverse representation of ethnicities amongst participants and discussed current strategies to improve inclusivity. This included training session leaders from different backgrounds who are knowledgeable about their local community.

Furthermore, the music-based intervention itself may be "accessible" to those from diverse linguistic backgrounds and "quite a good way to learn English" (Clinician 2, *Intervention B*), due to its memorable and repetitive characteristics. Clinician 1 from *Intervention A* additionally explained the importance of researching musical materials from different cultures to avoid cultural appropriation.

To summarise, although the suggestions for practical set-up of sessions varied widely between facilitators, consideration of space, size of group, supporting vulnerable participants and inclusive practice were all important suggestions for future interventions.

Discussion

This study examined four music-based interventions for promoting perinatal mental health through the lens of intervention facilitators. Reflexive thematic analysis of facilitator interviews revealed four key themes: (1) Incorporating varied musical activities; (2) Fostering a supportive community; (3) Affecting psycho-emotional change; and (4) Strategies for accessibility. Our findings demonstrate the key components of four UK perinatal music interventions for varying participant needs. Below, we further discuss these components in relation to existing literature and consider implications for future interventions.

Varied modes of musical engagement

The musical components of the sessions supported women in numerous ways, highlighting the importance of balancing familiar or safe activities with new activities to encourage engagement within the programme format. Across the interventions, facilitators indicated the importance of starting with familiar songs to cultivate a sense of security and trust. In *Intervention B*, personalised songwriting and singing lullabies encouraged direct interaction between the participants and their infants, which could help to mitigate the impact of poor perinatal mental health on the mother-infant bond (O'Higgins et al., 2013). This demonstrates how the musical and social parts of the sessions relate, which has similarly been identified in prior research exploring how songwriting interventions reduce loneliness and increase social connectedness (Perkins et al., 2023). The creative songwriting process has also been found to enhance wellbeing during pregnancy by increasing feelings of connectedness with the infant and fostering feelings of ownership, identity and empowerment through crafted songs (O'Reilly et al., 2023). These findings reinforce the notion that integrating personalised musical activities can serve as a targeted therapeutic tool in perinatal mental health interventions.

The use of sound generation and grounding in bodily experience in *Intervention D* further illustrates the therapeutic potential of musical improvisation. Improvisation's expressive, creative and somatic qualities have also been linked to improvements in emotional regulation and overall wellbeing in music therapy settings (MacDonald & Wilson, 2014). These mechanisms may contribute to the observed intervention outcomes of stress reduction and relaxation, paralleling evidence on the role of meditative relaxation techniques for reducing depressive symptoms (Hall et al., 2016; Li et al., 2020). Furthermore, these elements align with research on the psychological and physiological mechanisms underlying the benefits of music-based interventions in general, particularly around stress reduction through regulation of cortisol levels (Fancourt et al., 2014). Finally, approaching music in a natural and authentic way may support participant engagement for those with no previous musical experience and increase feelings of accessibility, as previously highlighted by Perkins et al. (2018). Facilitators would use non-professional singing voices to ensure the sessions provided a non-judgemental space and encourage self-compassion, as feelings of inadequacy are common during the perinatal period and particularly for women with depressive symptoms (Pereira et al., 2014). In doing so,

facilitators removed any sense of hierarchy in the sessions and provided an equal space for all women, regardless of their background or mental health diagnosis.

Facilitators create a caring environment

Facilitators fostered a welcoming and compassionate environment, flexibly adapting the group dynamic and activities to make the sessions feel comfortable for participants. Some facilitators discussed the importance of sessions being informed by the participants and responding to individuals' needs. This aligns with the concept of "person-centred care" (PCC) in health research, where communities, healthcare providers and individual patients are empowered to inform and co-develop their healthcare (Santana et al., 2018). The four music-based interventions outlined in this study follow the principles of PCC, but future work could consider co-designing interventions for different local community contexts to better align with PCC recommendations.

Beyond social and emotional support, the physical environment also emerged as an important factor in intervention efficacy. For example, in *Intervention A*, the physical and sensory elements (e.g. lighting, textiles, objects) were carefully selected to influence participants' experience of the space. Prior research has similarly highlighted four key elements of the environment that can contribute to beneficial mental health care: sensory elements, quality of engagement, social aspects and a personal experience of the space (Sui et al., 2023). To address challenges regarding accessibility and engagement, particularly for individuals with severe mental health diagnoses, facilitators might consider the interplay of physical space with social environment as one of several strategies to encourage sustained participation in future interventions.

Overall, this research highlights the potential of music interventions for facilitating numerous psycho-emotional and social support strategies for perinatal mental health across varying delivery contexts. The findings reinforce that music interventions can be an effective and adaptable approach to perinatal mental health care, aligning with previous research demonstrating how creative therapies can encourage engagement in services (Golden et al., 2021). Given that music can be adapted to fit a range of contexts, it can be an inclusive tool for expanding mental health care access across diverse groups. However, our findings also underscore the need for future interventions to actively address cultural and linguistic diversity, as variations in participant engagement suggest that representation of facilitators and musical content can influence accessibility (Gardner et al., 2024). Practitioners designing perinatal interventions should consider purposeful outreach strategies, such as community partnerships, multilingual resources and targeted advertisement within diverse networks to foster equitable access to music-based care.

Additionally, this study suggests that music interventions can support perinatal mental health across a spectrum of needs, from general wellbeing promotion to recovery from severe mental health conditions. Some interventions targeted self-referred participants with none to mild symptoms and others engaged those in specialist outpatient perinatal mental health services. Despite these differences, all interventions shared similar foundational elements, including fostering social connections, encouraging authentic musical engagement and creating a safe and non-judgemental space. Additionally, each intervention incorporated a range of familiar, new and personalised musical components to lift mood and provide parenting tools. Therefore, to further support perinatal mental health

in future, public health initiatives could include music-based interventions in both community centres and healthcare pathways (Atif et al., 2015). From a public health perspective, incorporating music interventions into perinatal mental health support systems could enhance maternal coping skills and support preventative maternal mental health strategies in future.

Limitations

Our study was limited to four UK interventions known to the researchers and this small sample of interventions may not reflect the characteristics of other similar interventions across other parts of the UK. Additionally, most facilitators were from *Intervention A*, so our findings may incorporate a deeper reflection of the content and experiences of *Intervention A* compared to the other interventions. The scope of our study did not include interventions designed for women with severe perinatal mental health illness on inpatient wards, meaning our conclusions are limited to community-based or outpatient settings. Furthermore, potential biases in this study should be acknowledged. Facilitators provided valuable insights into both the successes and challenges of the interventions, but their perspectives inherently shaped the interpretation of findings. As key implementers, they may have emphasised the benefits of their programs while unintentionally overlooking participant challenges or limitations. Future work could mitigate this by including the perspectives of intervention participants alongside facilitators. Additionally, selection bias may be present, as the interventions were chosen based on researcher familiarity rather than a systematic selection process. This limits the transferability of our findings to different cultural or socioeconomic contexts, which could be explored in future research.

Conclusion

This study highlights the core components of four music-based perinatal interventions, including utilising diverse musical engagement, fostering social bonding, supporting emotional regulation and encouraging co-production. Our findings suggest that these components may be relevant across a wider spectrum of perinatal mental health conditions and varying levels of clinical severity than previously explored. Future research is warranted to examine how our findings could be utilised in the co-development of perinatal music interventions across different perinatal populations, care settings and geographic locations.

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Appendix

Semi-structured interview questions for facilitators.

(1) To begin, could you tell me a bit about your musical/clinical background and how you became involved in music for the perinatal period?

(2) What does a session of your music intervention for perinatal mothers typically look like?

- *Prompts*
  - Who participates in the sessions and what are their typical demographics?
  - Who helps to facilitate the sessions and what are their main roles?
  - How long is a session and how many weeks does the intervention last for?
  - Is there a particular structure to each session and how might it look?
  - To what extent, and how, do the sessions vary over time?

(3) What are the sessions trying to achieve?

- *Prompts*
  - What are the overarching goals of the intervention?
  - What do you think the women get out of the sessions?
  - What have participants told you about their experiences in the sessions?

(4) To what extent, and how, do you adapt your practice during the sessions?

(5) What are some of the significant musical and non-musical components of the sessions and how do they contribute to the main goals of the intervention?

- Prompts
  - Are there any [musical/social/psycho-educational] components that you believe to be particularly effective?

(6) What are the main challenges of developing/running your intervention effectively?

- How did you overcome these challenges?
- How could your intervention be improved to manage these challenges?

(7) Is there anything else you would like to add to what we have discussed today?