

Perinatal mental health among sexual minority women in two-mother families: Healthcare experiences and co-design of an inclusive mHealth preventive intervention

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Abstract

Introduction. Perinatal mental health among sexual minority women (SMW) remains underexplored despite growing recognition of health care inequities affecting LGBTQIA+ populations. This study aimed to examine the perinatal mental health and care experiences of SMW and co-design a prototype of *[blinded for review]*, a mobile health (mHealth) intervention for the prevention of perinatal mental disorders (PMDs), informed by participants' lived experiences.

Methods. This study was conducted as part of the European-funded *[blinded for review]* project. A qualitative design was employed, involving two focus groups with SMW in the perinatal period and healthcare professionals (n = 17). Methodological quality and Patient and Public Involvement were appraised using COREQ and GRIPP2 standards.

Results. Participants described emotional challenges associated with assisted reproduction, alongside experiences of discrimination, invisibility and microaggressions within healthcare settings and the broader community. Heteronormative assumptions embedded in perinatal care affected recognition, communication, and access to support. Participants identified the need for more inclusive and tailored forms of support. The co-design process identified priorities for inclusive digital support, including affirming communication, representative imagery and profile customization.

Conclusions. This study contributes to understanding how structural inequities shape perinatal mental health among SMW and highlights the importance of participatory approaches in developing more equitable and inclusive perinatal care and support systems.

Introduction

The perinatal period—from pregnancy to the first year postpartum—represents a sensitive window for the onset of mental health disorders (Howard et al., 2014). Approximately 20% of women experience clinically significant symptoms of depression or anxiety during this period (Fawcett et al., 2019; Woody et al., 2017). Although growing evidence supports the effectiveness of early screening and preventive interventions (Howard & Khalifeh, 2020), such approaches have largely been developed within heteronormative frameworks that assume cisgender, heterosexual, two-parent family structures. As a result, these interventions often fail to reflect the diversity of contemporary families.

The minority stress theory (Meyer, 2003) posits that structural stigma and associated chronic social stressors contribute to mental health inequities among minority and marginalized populations. Accordingly, sexual minority women (SMW)—those who identify as lesbian, bisexual, queer, or other non-heterosexual identities—experience a higher risk of mental health difficulties across the lifespan compared to heterosexual individuals (Ross et al., 2018; Wittgens et al., 2022). These disparities extend into the perinatal period, where the intersection of minority stress and reproductive experiences can further exacerbate vulnerability to perinatal mental disorders (PMDs) among SMW (Marsland et al., 2022). Quantitative studies indicate that rates of clinically significant depressive symptoms among

perinatal SMW range from 30–35%, considerably higher than those observed in heterosexual women (Marsland et al., 2022; Soled et al., 2024). Although much of the existing evidence has been derived from relatively small samples, recent large-scale clinical data confirm the persistence of systemic inequities. In a U.S. cohort study of more than 18000 birthing patients, Lapping-Carr et al. (2023) found that SMW had significantly greater odds of screening positive for post-partum depression than heterosexual women (OR = 2.38). In line with the minority stress theory, it is well documented that SMW face multiple forms of stigma and discrimination during the perinatal period, which could potentially explain their heightened risk of developing PMDs (Everett & Bergman, 2025; Soled et al., 2023). SMW may internalize both patriarchal norms surrounding (biological) reproduction and heteronormative assumptions about socially sanctioned pathways to parenthood (Lacombe-Duncan et al., 2022). A review of 26 studies including 1199 LGBTQIA+ childbearing individuals identified substantial barriers in perinatal healthcare, including invisibility, exclusion, discrimination, and heteronormative assumptions that fail to address their specific needs (Kirubarajan et al., 2022).

Stigma frequently emerges during interactions with healthcare professionals (HPs), including assumptions about gender, sexuality, and family structure, disrespectful attitudes, parental education centered on heteronormative couples, and the exclusion or invalidation of non-birthing women in routine care (Mezzalira et al., 2025). SMW report experiences of microaggressions and limited acknowledgment of same-sex partners during perinatal care (Goldberg et al., 2018; Flanders et al., 2016). Howat et al. (2023) further revealed that non-birthing mothers in female same-sex couples frequently experience anxiety, identity uncertainty, and exclusion from perinatal services. However, research has also highlighted resilient strategies and adaptive trajectories developed by LGBTQIA+ individuals to navigate these challenges (Meyer, 2015). A systematic synthesis of 25 studies identified narratives of resilience in childbearing among sexual minority parents, including reclaiming agency and control, building supportive networks and communities, transforming adversity into purpose through activism or mentorships, and emphasizing positive perinatal experiences of fulfilment and joy (Soled et al., 2023).

Building on these challenges, there is a clear need to develop tailored interventions that effectively address the structural inequities faced by SMW during the perinatal period. Recent systematic reviews and meta-analyses indicate that digital health interventions may prevent perinatal depressive and anxiety symptoms (Barquero-Jiménez et al., 2025). Emerging evidence also suggests that digital interventions can benefit LGBTQIA+ populations more broadly (Fowler et al., 2023; Fowler et al., 2024). Interventions that explicitly incorporate LGBTQIA+ individuals' lived experiences, along with affirming language and inclusive imagery, demonstrate good feasibility and acceptability (Fowler et al., 2023). However, most digital mental health interventions have been designed for—and evaluated predominantly with—cisgender and heterosexual samples (Figueroa et al., 2021). Digital health interventions addressing pregnancy and parenting rarely account for sexual and gender diversity, and even studies that aim to be inclusive often rely on predominantly heterosexual samples (e.g., Lawrence et al., 2024).

To date, no digital health intervention has been specifically designed for or evaluated with SMW during the perinatal period, and no existing interventions explicitly focus on non-birthing mothers (de-Juan-

Iglesias et al., 2024). The exclusion of these perspectives constitutes not only a scientific limitation—undermining ecological validity—but also an ethical concern, as it may result in interventions that are ineffective for (or potentially harmful to) minoritized populations. Key components of inclusive perinatal interventions include addressing the specific needs of both birthing and non-birthing mothers, explicitly targeting minority-stress processes, and respecting users’ privacy when engaging with digital platforms (Fowler et al., 2023; Pezaro et al., 2023). Co-design and participatory methodologies offer a rigorous framework for centering community knowledge and priorities within intervention development. Engaging marginalized communities throughout the research process—from conceptualization to dissemination—helps ensure that the resulting tools are responsive, empowering, and aligned with users’ priorities (Beresford, 2013; Brown et al., 2024). In line with this perspective, recent work has explicitly recommended that perinatal interventions targeting sexual minority populations be developed by queer researchers and co-created with LGBTQIA+ participants (e.g., Permezel et al., 2023). Taken together, these findings underscore the need for mobile health (mHealth) solutions that are both effective and equitable, integrating inclusivity, sensitivity, and participatory design principles from the outset (Fowler et al., 2023).

The present study

The present study pursued two complementary aims. First, it sought to deepen understanding of the perinatal mental health experiences of SMW. Second, it aimed to co-design a personalized mHealth intervention for the universal prevention of PMDs within routine perinatal care, integrating the perspectives of both SMW and HPs. By systematically incorporating the voices of SMW and HPs into the intervention design process, this study advances an inclusive and participatory model of perinatal mental health prevention that positions family diversity as a core dimension of equitable healthcare delivery.

Method

Study setting and design

This qualitative study was conducted as part of the European-funded *[blinded for review]* Project (Grant Agreement ID: 101042139) ([blinded for review]). One of the core objectives of this initiative, supported by the European Research Council (ERC), is to co-create the *[blinded for review]* app, a personalized mHealth intervention designed for integration into routine maternal care in Spain. The app aims to prevent PMDs by providing psychological and lifestyle support throughout the entire perinatal period ([blinded for review]). The app prototype has been progressively refined through a co-design process involving multiple stakeholders. A detailed description of this process is provided elsewhere ([blinded for review]). The present study specifically reports on the co-design phase involving SMW and HPs working with this population. The project’s pilot trial is registered at ClinicalTrials.gov (Identifier: NCT06640907). Ethical approval for the study was granted by the corresponding Ethics Committee (Reference No. 1099-

N-23) on September 29, 2023. Stakeholder participation throughout the project was systematically incorporated using a *Patient and Public Involvement (PPI)* approach, in line with the established *involve* and *include* principles (INVOLVE, 2012). The integration and reporting of PPI activities followed the criteria outlined in the GRIPP2 short form (Staniszewska et al., 2017) (Appendix C).

Research Team and Positionality

Recognizing that researchers' social positions and lived experiences can shape all stages of the research process (Roberts et al., 2020), we provide a brief positionality statement to contextualize the perspectives informing this study. The research team comprised the following members: IC (SMW, White) is a psychologist and researcher with expertise in family diversity and child development. Her identity and lived experience as an SMW were central to the conceptualization, coordination, and conduct of this study. P-d-J-I (woman, White) is a psychologist and predoctoral researcher with experience in qualitative research methods and perinatal mental health. FJN-C (man, White) is a PhD psychologist and postdoctoral lecturer with expertise in the design and evaluation of preventive interventions for suicide-related behaviors and mental health disorders. LLC (SMW, White) is a PhD clinical psychologist with clinical and research expertise in LGBTQIA+ reproductive mental health and the development of interventions tailored to this population. AC (woman, White) is a PhD clinical psychologist and postdoctoral lecturer with expertise in perinatal mental health, from a gender-sensitive perspective. EM (woman, White), a PhD psychologist and principal investigator of the *[blinded for review]* project, is a tenured associate professor with expertise in perinatal mental health and in the design and implementation of preventive interventions within public healthcare systems.

Participants

Eligibility criteria specified in the recruitment materials included self-identification as a woman during the perinatal period and membership of the LGBTQIA+ community. No additional restrictions were imposed at the initial recruitment stage. Purposive sampling was used to focus on women, as they represent the majority of LGBTQIA+ individuals accessing public perinatal health care within the recruitment setting. For the purposes of the present study, the final sample was further restricted to women in two-mother families. This decision was made to enhance the homogeneity of participants' experiences and needs and to reduce confounding related to variability in gender identity and family structure, which was beyond the scope of this qualitative inquiry. The perinatal period was defined as extending from pregnancy until the child reached 18 months of age. A total of seven women completed an online recruitment survey developed specifically for this study. Following confirmation of eligibility and availability via telephone contact, five of the seven women participated in the focus group. Participants included birthing mothers ($n = 4$) and non-birthing mother ($n = 1$), all were members of same-sex parent families. Regarding the perinatal period, three participants were between 0–6 months postpartum and two were between 7–15 months postpartum. Four participants had one previous child, while one participant was a first-time parent. Three participants reported having public health insurance and two

reported having both public and private coverage. Educational attainment was high, with two participants holding bachelor’s or undergraduate degrees and three holding postgraduate qualifications (Master’s or doctoral degrees).

The healthcare professional (HP) sample comprised individuals from multiple disciplinary backgrounds with experience providing care to SMW during the perinatal period. Of the 15 HPs invited to participate, 12 took part in the study. Most worked in public hospitals ($n = 6$), followed by private health centers ($n = 2$), universities ($n = 2$), primary public healthcare center ($n = 1$) and employment across multiple settings ($n = 1$). The majority were midwives ($n = 8$), while the remaining participants included two psychologists, one pediatrician and one neonatal intensive care unit (NICU) nurse. Most professionals had 5–10 years of experience in perinatal care ($n = 7$), four had 10–15 years of experience, and one had more than 15 years of experience. Age, gender and sexual orientation of the participants are presented in Table 1. A detailed description of the eligibility criteria for participation in the study is provided in Appendix A.

Table 1
Sociodemographic data of participants (n = 17)

Mean age (SD)	SMW	HPs
	38.00 (2.35)	39.89 (4.81)
Gender identity	<i>n</i>	<i>n</i>
Cisgender woman	5	9
Cisgender man	0	3
Sexual orientation	<i>n</i>	<i>n</i>
Heterosexual	0	9
Gay/Lesbian	4	1
Bisexual	1	0
Prefer not to answer	0	2

[Insert Table 1]

Conceptual Framework and Interview Guide

A broad deductive conceptual framework was developed to guide data collection, drawing on existing literature on perinatal mental health and engagement with digital health interventions (see de-Juan-Iglesias, n.d.). The framework was organized around three predefined thematic domains (user profile, mHealth intervention program, and user experience). At the same time, it remained flexible and open to the identification of inductively emerging themes. To ensure that the specific experiences of SMW were

adequately captured, a fourth thematic domain—perinatal experiences of SMW—was incorporated to facilitate the inductive exploration of themes and subthemes grounded in participants' lived experiences.

Based on this flexible deductive framework, the research team developed a semi-structured qualitative interview guide (Appendix B) addressing: (1) SMW's experiences across the perinatal period; (2) mHealth intervention content; (3) app functionalities (e.g., community forums, support groups); (4) partner's involvement; and (5) app design features (e.g., visual appearance, imagery).

Data collection

SMWs were recruited online through social media platforms, personal and professional networks, snowball sampling strategies, and collaboration with LGBTQIA+ associations in Spain. Interested individuals provided their contact information via an online form and were subsequently contacted by telephone to confirm eligibility and availability to participate. HPs were recruited via email using an existing directory of professionals with potential interest or experience working with SMW.

Two online focus groups were conducted. One focus group with SMW took place on January 18, 2024, and was facilitated by IC, P-d-J-I, and EM. A second focus group with HPs was conducted on April 2, 2024, and facilitated by IC, P-d-J-I, and FJN-C. Each session lasted approximately 90 minutes. Sociodemographic information was collected prior to participation, and all participants provided written informed consent. At the beginning of each session, participants were briefed on the study objectives, the facilitators' roles, backgrounds, and interests related to the research topic. Group discussions explored participants' perspectives on perinatal experiences among SMW (Aim 1) and app's content, features, and design (Aim 2). Participants received a €28 voucher as compensation for their time. Field notes were taken during the focus groups by P-d-J-I (SMW group) and FJN-C (HP group). All sessions were audio-recorded, automatically transcribed, and manually verified for accuracy by FJN-C. Participants received follow-up feedback via email in the form of a summary dossier outlining the main findings derived from their contributions. All reported quotations were translated into English from the original Spanish. Data collection was conducted at Universidad Loyola Andalucía and the University of Seville (Spain).

Data analysis

Data were analyzed using thematic analysis, a method valued for its theoretical flexibility and structured according to the six-phase process outlined by Braun and Clarke (2006). This qualitative data analysis was supported by NVivo 15 software. To strengthen the trustworthiness of the findings and minimize potential bias, investigator triangulation was employed (Heale & Forbes, 2013). Two members of the research team (IC and P-d-J-I) independently coded the transcripts using the predefined deductive framework (de-Juan-Iglesias, n.d.), while remaining open to inductively identifying emerging themes and subthemes and refining existing codes as needed. Following independent coding, codebooks were systematically compared and discussed until consensus was reached across all identified themes. A third researcher (FJN-C) subsequently reviewed the analytic outputs to assess coherence and

consistency. Although the study included one focus group with SMW and one with HPs, thematic saturation was achieved for several central themes, which emerged consistently across both groups. Reporting of qualitative methods and findings adhered to the Consolidated Criteria for Reporting Qualitative Research (COREQ; Tong et al., 2007) (Appendix D).

Results

The analysis yielded 12 themes and 24 subthemes reflecting SMW's perinatal mental health experiences, as well as key considerations for the design of the *[blinded for review]* mHealth intervention. Themes and subthemes were organized into four overarching thematic domains: (1) perinatal experiences of SMW; (2) user profile; (3) mHealth intervention program; and (4) user experience. Some themes and subthemes were derived from the open deductive framework (de-Juan-Iglesias, n.d.), whereas others emerged inductively from the data. Inductively generated themes are indicated with an asterisk (*) in Tables 2–5.

Table 2
Perinatal Experiences of SMW: themes, subthemes and example quotes.

Theme	Subtheme	Example quote
*Experiences of assisted reproductive processes	*Emotional impact of fertility treatments, assisted reproduction procedures and pregnancy losses	<i>"When it comes to mental health, facing a pregnancy is already challenging; facing a pregnancy after previous gestational losses is even harder"</i> (W)
*Experiences in healthcare and the community as LGBTQIA+ families	*Training and sensitivity of healthcare professionals working with two-mother families.	<i>"Why keep placing the responsibility on individuals? We should actually be holding healthcare professionals accountable for having this sensitivity, right? For not normalizing the idea that it must be a heterosexual couple, or that there has to be a father or something like that. But it's true that this feeling is widely shared—you have to explain your situation every time you go to a consultation. So maybe this should be addressed somehow"</i> (HP)
	*Gender roles and the figure of non-birthing mother	<i>"In our community that she's not the father. So she felt she didn't really know what her role was. We spoke with a couple—a father and a mother—and the father said: 'Well, the father's role is to carry the coats, take care of the mother, and shoulder as much weight as possible...' And we were like: 'Well, what's the role of... in this case, my wife, [name]?' Because it is not..."</i> (W)
	*Social discrimination and microaggressions within extended family, community and healthcare settings	<i>"Or to ask, right? 'And the dad? Who's the dad and where is he?' Or 'Who's the real mother?' Things like that. Sometimes it's hard for people to grasp that in these non-so-normative families, there are two parents—regardless of how they identify. So, what we saw a lot in this survey was that: the bureaucracy around the family record book, birth registration, all of that..."</i> (HP)
Note. Asterisks indicate inductively generated themes or subthemes. W = Sexual minority woman, HP = Healthcare professional.		

Table 5
User Experience: themes, subthemes and example quotes

Theme	Subthemes	Quotes
Design format	*Inclusive and respectful language reflecting family diversity	<i>"The way these apps and software programs are designed, I'm not sure how to put it, but it's always 'father' and 'mother', and it seems like no other options exist, right?" (HP)</i>
Governance and privacy	*Private access and the safe disclosure of information	<i>"Even when you add your partner, it should give you the option to decide whether you want to share it with your partner or not. It shouldn't just be the partner who decides whether they receive it or not. When you enter a gynecological test or any date, it should ask: 'Do you want to share this with your partner?' [...] Perfect, then that person can decide whether to accept it or not, whether to add it to their calendar or not. But you should also have the option" (W)</i>
Visual design	Use of images that represent the diversity of women and family structures.	<i>"It's true that in these kinds of images and apps, at the end it's always very attractive people—a man or a woman, all very... cute-looking. So maybe include, well, two women, or someone—I'll say it plainly—someone who is mixed-race or black directly" (HP)</i>
Information architecture	*Personalized user profile based on gender identity and family structure	<i>"I understand that this creates profiles, which then determine the content shown in the app. So if, in that registration, as Persona2 mentioned, one part is about sexuality and another about identity, and it asks what gender you identify with—that alone already feels like: 'Okay, they're asking both the individual and the partner, if there is one.' And then, if there are profiles for pregnancy, postpartum, or loss, maybe there could also be profiles like 'woman with a female partner' or 'woman without a partner'" (HP)</i>
Note. Asterisks indicate inductively generated themes or subthemes. W = Sexual minority woman, HP = Healthcare professional		

Thematic Domain 1: Perinatal Experiences of SMW

This thematic domain captures the specific perinatal experiences of SMW, as described by both SMW and HPs. Within this domain, two themes and four subthemes were identified. Illustrative participant quotations are presented in Table 2.

[Table 2 here]

One prominent theme concerned *experiences of assisted reproductive processes*, which included the subtheme of the *emotional impact of fertility treatments, assisted reproduction procedures, and pregnancy losses*. SMW described assisted reproduction as psychologically demanding and challenging, highlighting the cumulative impact of repeated pregnancy attempts, prolonged treatment trajectories, and miscarriages. These experiences were frequently accompanied by feelings of grief that participants perceived as unacknowledged or socially minimized. Participants further described navigating heightened emotionality, fear, and uncertainty throughout the assisted reproduction process.

The second theme captured *experiences in healthcare and the community as LGBTQIA+ families* and was supported by three subthemes. The first subtheme, *training and sensitivity of healthcare professionals working with two-mother families*, highlighted experiences of discomfort, lack of natural communication, and the repeated need for SMW to “come out” during medical consultations. Both SMW and HPs described these situations as burdensome, emphasizing that they could be mitigated through more comprehensive training among healthcare providers. The second subtheme focused on *gender roles and the figure of the non-birthing mother*, addressing experiences of invisibility and the lack of societal models for the perinatal role of non-birthing women. Participants described a lack of cultural references, requiring them to construct their own models of parenthood without being subsumed under or equated with paternal roles. Narratives highlighted emotionally significant experiences, including involvement in preconception treatments, providing care and support to their partner during pregnancy, and actively defining their own relationship with their infant following birth. The final subtheme concerned experiences of *social discrimination and microaggressions within extended family, community, and healthcare settings*. SMW reported frequent encounters with microaggressions, stigmatization, and discrimination across social, familial, and healthcare contexts. These experiences included heteronormative assumptions (e.g., interpreting the non-birthing mother as a sister or friend), exclusionary language (e.g., asking questions about who the “real” mother was), and direct references to an assumed paternal figure (e.g., asking about the father’s identity). Both SMW and HPs also mentioned the structural invisibility of two-mother families within administrative and bureaucratic procedures, including birth registration processes and pregnancy-related documentation.

Thematic Domain 2: User Profile

This thematic domain focuses on SMW’s profiles as prospective users of perinatal care and digital health interventions, encompassing their experiences with the healthcare system and their social support networks. Within this domain, two themes and five subthemes were identified. Illustrative participant quotations are presented in Table 3.

Table 3
User Profile: themes, subthemes and example quotes.

Theme	Subtheme	Example quote
Previous experiences with the Health System and professional care	*Desire for shared decision-making, autonomy, support and humanized care.	<i>"When I asked the doctor, 'How many staples did you use?' he said, 'I didn't use any staples; you have an internal suture that won't cause any trouble and will resolve on its own. I wanted the best for you, and I treated you as if you were my daughter.' And it's true that really makes a difference. Because when you feel like a person—not just something that carries a baby—and you feel that you matter, then..." (W)</i>
	Unavailability of information and resources related to preconception, pregnancy, delivery and postpartum	<i>"And she [health professional] also told me: 'Here at the health center we don't even have a postpartum group, because otherwise you could go to the group and at least listen to other mothers and feel more at ease in that sense' But no, not even a postpartum group" (W)</i>
	*Support received from private health professionals	<i>"So when we saw the situation—he couldn't latch in any position, and my little one also had a tongue-tie—we immediately called a lactation consultant. I called her the same day [wife's name] gave birth, and she came the next day, solved it right away, and honestly, she saved our breastfeeding journey" (W)</i>
	*Variability in clinical guidelines and protocols in the Health System	<i>"Each hospital has its own criteria, because I remember in the childbirth preparation meetings it was like, 'Where are you giving birth? Me, at Hospital1... Oh, well at Hospital1 they do allow it. But at Hospital2, I don't think so.' So it was like, 'Come on, please, can we have some consistency?'" (W)</i>
Social support	*Informal peer and community support	<i>"honestly, thanks to the people who informed us, we're super happy because it made a huge difference. So having that knowledge and knowing there are people who understand the issue and can guide you really helps—because often you feel very lost and don't know where to turn" (W)</i>
Note. Asterisks indicate inductively generated themes or subthemes. W = Sexual minority woman, HP = Healthcare professional		

[Table 3 here]

The first theme, *previous experiences with the Health System and professional care*, was supported by four subthemes. The first subtheme, *desire for shared decision-making, autonomy, support, and humanized care*, reflected SMW's strong preference for receiving information delivered with empathy and for feeling heard and validated throughout the perinatal process. Participants described valuing interactions in which HPs acknowledged their emotions and respected their opinions and choices. The second subtheme, *unavailability of information and resources related to preconception, pregnancy, delivery, and postpartum*, captured SMW's concerns regarding the limited availability of accessible, tailored information and resources within healthcare systems. Participants described gaps in resources

addressing key stages and topics, including preconception procedures and eligibility for assisted reproduction, pregnancy-related health issues, childbirth, and postpartum care (e.g., breastfeeding). Another subtheme, *support received from private health professionals*, highlighted SMW's experiences seeking and receiving support from private healthcare providers, both for themselves (e.g., psychological support) and for their infants (e.g., breastfeeding support), describing generally satisfactory outcomes. The fourth subtheme, *variability in clinical guidelines and protocols in the Health System*, referred to clear inconsistencies between public and private services, as well as across hospitals within the same locality. SMW emphasized the need for standardized protocols and clearer, unified guidelines concerning processes such as partner access during childbirth.

The second theme within this domain, *social support*, was supported by the subtheme of *informal peer and community support*. SMW highlighted the value of informal support received from others within their community (e.g., through the sharing of practical information) and noted a general lack of sensitivity and empathy from the wider community during difficult moments in the perinatal process (e.g., after unsuccessful pregnancy attempts).

Thematic Domain 3: mHealth Intervention Program

This thematic domain captures the perspectives of SMW and HPs on the mHealth intervention. Within this domain, three themes and nine subthemes were identified. Illustrative participant quotations are presented in Table 4.

Table 4
mHealth Intervention Program: themes, subthemes and example quotes.

Themes	Subthemes	Quotes
Psychoeducational content of interest	*Promotion of maternal well-being	<i>"There's one thing I'm sure of, and it's something I've noticed in both of my pregnancies: women become objectified during pregnancy. We turn into something that carries a baby and stop mattering, you know? And no one tells you that... that it's important for you to be well—psychologically, mentally, physically" (W)</i>
	Prevention of mental health disorders	<i>"But I did miss all those topics no one tells you about —no one tells you that you'll go through a rough time when the baby is born, when you have to breastfeed and they latch on, no one tells you what complications you might face during pregnancy and how to deal with them or how to reach out to a specialist when you're in that situation. So I think this could be an opportunity to make the app stand out by addressing topics that others don't" (W)</i>
	*Medical and administrative information on preconception and the perinatal period	<i>"Having easy access to information like: insemination works this way, IVF works like this, ROPA method also exists, public healthcare covers this up to a certain age and you can only have one child, and now it turns out that... So, just a bit of general information about all that, right? (W)</i>
	*Involving, validating and empowering the non-birthing parent	<i>"I think there should be shared content, and then, if possible, some kind of content that I, as a gestational mother or as a non-gestational mother, can access. Something specific, right?" (HP)</i>
	*Couple communication and coparenting	<i>"And the issue of couples, well, it's like the dilemma I had at the beginning. I think this gets into gender topics, and I believe all couples should have content about how we're going to divide things, what roles we have, what tasks we'll take on, how we organize ourselves now, how we'll do it in the postpartum period, and how we communicate" (HP)</i>
	*Specific content for LGBTQIA+ women regarding coming out in healthcare settings.	<i>"Maybe one way to protect themselves is to normalize being able to share their situation openly. And maybe, well, some tips on how to communicate what kind of couple they are, what kind of mother they are, or how... Something that encourages them to normalize and face those situations, which will help them avoid a lot of discomfort once the information is already out there" (HP)</i>
Mood tracking	*Regular assessment of mood and well-being	<i>"Me, personally... I wasn't aware that I was unwell until I hit rock bottom. So maybe if someone had asked me along the way, or if a little voice had said, 'Hey, how are you feeling?' and asked me that question, maybe I would have realized it" (W)</i>
Note. Asterisks indicate inductively generated themes or subthemes. W = Sexual minority woman, HP = Healthcare professional		

Themes	Subthemes	Quotes
Social connectedness	*Finding nearby support groups or resources	<i>“That the resources be specific—that in addition to the general support resources, which are of course available, there could also be some tailored specifically for the [LGBT] community, if they exist” (HP)</i>
	Forums with other mothers	<i>“And another cool tool that comes to mind could be... well, just as an idea—people who’ve used the app and gone through childbirth could leave feedback in the app, and other moms could read it. For example, how they felt in a particular hospital in these terms—whether they experienced [...] homophobic language, whether they had to explain their situation, or whether they felt completely welcomed, right?. This could help identify places that are ‘LGBT-friendly centers’” (HP)</i>
Note. Asterisks indicate inductively generated themes or subthemes. W = Sexual minority woman, HP = Healthcare professional		

[Insert Table 4]

The first theme, *psychoeducational content of interest*, comprised six subthemes. The subtheme *promotion of maternal wellbeing* highlighted participants’ need for tailored support addressing childbirth preparation, mental health care, communication and boundary-setting with extended family members, and strategies for building and sustaining support networks. The subtheme *prevention of mental health disorders* underscored the perceived importance of content that supports realistic expectations of motherhood, early identification of mental health symptoms, help-seeking processes, managing feelings of guilt, and preparation for adverse outcomes such as gestational loss or neonatal death. A third subtheme, *medical and administrative information on preconception and the perinatal period*, captured participants’ demand for clear, accessible, and well-structured guidance on medical and administrative procedures related to preconception (e.g., assisted reproduction), pregnancy and postpartum period formalities. The fourth subtheme, *involving, validating and empowering the non-birthing parent*, reflected the importance of incorporating both shared and role-specific content for non-birthing mothers. Participants emphasized the need for explicit validation, role-specific guidance and resources that support their active involvement and legitimacy in parenting roles. The fifth subtheme, *couple communication and coparenting*, addressed the need for guidance on negotiating caregiving roles and responsibilities, as well as action plans to support effective coparenting. Finally, the subtheme of *specific content for LGBTQIA+ women regarding coming out in healthcare settings* underscored the relevance of providing tailored guidance to support two-mother families in navigating processes of “coming out” and family disclosure within medical contexts. Both SMW and HPs highlighted the importance of facilitating these conversations in ways that feel comfortable, natural, and affirming.

The second theme within this domain focused on *mood tracking* and was supported by the subtheme of *regular assessment of mood and wellbeing*. SMW valued tools for the routine self-monitoring of

emotional states, describing them as helpful for the early identification of psychological difficulties and for facilitating access to personalized resources and support.

The third theme concerned *social connectedness* and was defined by two subthemes. The first, *forums with other mothers*, highlighted the value of digital peer-based spaces as sources of emotional support and practical knowledge. These spaces were also valued for facilitating the identification of LGBTQIA+-affirming professionals and services through shared experiences. The second subtheme, *finding nearby support groups or resources*, emphasized the need for accessible pathways to private reference centers, workshops, and peer support groups. Both SMW and HPs also highlighted the value of tools that enable users to easily identify and locate resources tailored to the LGBTQIA+ community in their area.

Thematic Domain 4. User Experience

This thematic domain captures the perspectives of SMW and HPs on user experience, design, and preferences regarding the mHealth intervention. Five themes and six subthemes were identified. Illustrative participant quotations are presented in Table 5.

[Insert Table 5]

The first theme, *design format*, was supported by the subtheme *inclusive and respectful language reflecting family diversity*. Both SMW and HPs emphasized the importance of recognizing diverse family structures by using inclusive terminology. Participants highlighted the need to avoid heteronormative labels such as “father” and instead adopt more inclusive terms, such as “family”. They consistently valued the recognition and affirmation of their family configurations.

The second theme, *governance and privacy*, was supported by the subtheme of *private access and the safe disclosure of information*. Narratives from both SMW and HPs emphasized the importance of privacy and personal control over shared information. These features were perceived as fostering safety, trust, and a sense of agency.

The third theme, *visual design*, was defined by two subthemes: an *aesthetically pleasing interface* and the *use of images that represent the diversity of women and family structures*. Regarding the first subtheme, SMW positively evaluated the app’s visual simplicity, associated with feelings of calmness, comfort, and wellbeing. In the second subtheme, SMW and HPs stressed the importance of images that reflect the diversity of bodies, families, ethnicities, and lifestyles. Participants noted that visual representations focused exclusively on normative or idealized models of women and families led to a lack of identification, whereas the inclusion of realistic, diverse, and non-normative models fostered a more relatable and affirming user experience.

The theme of *usability* was supported by the subtheme of *sharing events with one’s partner via a shared calendar*. This subtheme captured participants’ proposals to enable calendar synchronization between partners. Both SMW and HPs viewed this functionality as facilitating partner involvement and supporting coparenting practices. The theme of *information architecture* was supported by the subtheme of

personalized user profile based on gender identity and family structure. Participants emphasized the importance of configurable profiles that accurately reflect users' identities, family configurations, and perinatal stages.

Discussion

This qualitative study examined the perinatal mental health experiences of SMW in two-mother families and identified key considerations for the co-design of an inclusive mHealth intervention for the prevention of PMDs within routine care. By integrating the perspectives of SMW and HPs within the *[blinded for review]* project, the study provides a comprehensive, participatory account of both lived experiences and design preferences relevant to equitable perinatal care. Participants' accounts underscored the cumulative impact of challenging assisted reproduction processes, exposure to minority stress within healthcare and social contexts, and ongoing uncertainty surrounding the role, visibility, and recognition of their families. Participants' accounts highlighted not only elevated emotional vulnerability but also specific psychological processes through which perinatal mental health risk may emerge. These processes included anticipatory vigilance in healthcare interactions, fear of invalidation, and ongoing identity management in heteronormative perinatal systems. At the same time, SMW demonstrated resilience, agency, and reflexivity in response to these stressors (Meyer, 2015), actively seeking information, peer and community support, and alternative care pathways. Importantly, both SMW and HPs articulated clear, actionable recommendations for developing inclusive preventive interventions that address their needs and support their integration into routine perinatal care.

Aim 1: Perinatal Experiences of SMW

The present findings are consistent with a growing body of evidence indicating that SMW experience an elevated risk of perinatal depression and anxiety. Previous quantitative studies have documented higher rates of clinically significant depressive symptoms during pregnancy and the postpartum period (Marsland et al., 2022), alongside increased exposure to reproductive stressors such as assisted reproduction and pregnancy loss (Everett et al., 2019). The contextual risk factors identified in the present study may help understand this higher prevalence of anxiety and depressive symptoms among SMW during the perinatal period (Lapping-Carr et al., 2023; Soled et al., 2024).

Research further shows that SMW often experience the perinatal period as emotionally challenging, characterized by heightened grief, profound sadness following pregnancy loss, and elevated stress levels (Kirubarajan et al., 2022; Lacombe-Duncan et al., 2022). The emotionally demanding assisted reproductive processes described by participants in this study align with these findings. The perinatal experiences of SMW within healthcare and social contexts were marked by considerable diversity but consistently shaped by exposure to microaggressions and discrimination. Both SMW and HPs described recurring experiences in family, healthcare, and community settings, including heteronormative questioning about the presence of a father or inquiries regarding who the "real" mother was—issues also documented among two-mother families in other European countries (Howat et al., 2023). These forms

of questioning reflect the persistence of heteronormative assumptions within perinatal care and broader societal challenges in recognizing family diversity and conceptualizing parenthood beyond genetic ties. In addition, participants highlighted the need to adapt administrative and bureaucratic procedures (e.g., medical intake forms and birth registration) to reduce structural heteronormativity and promote institutional recognition of diverse family configurations. Taken together, these findings underscore the ongoing presence of structural heteronormativity within perinatal care systems and the need to advance toward LGBTQIA+-affirming practices (Kirubarajan et al., 2022; Lacombe-Duncan et al., 2022; Lapping-Carr et al., 2023).

Another salient subtheme concerned the invisibility of the non-birthing mother throughout the perinatal care process and the absence of socially recognized reference models for this role. The lack of such models has been described as “parenting without a parental role template” (Howat et al., 2023). These challenges extended across the entire perinatal trajectory—from questioning the legitimacy of their own emotional distress during a partner’s pregnancy to establishing a bond with their infants following birth—patterns also reported in a study conducted by Howat et al. (2023) in the United Kingdom. Existing evidence suggests that practices such as referring to non-birthing mothers as “parents” rather than solely as “partners,” actively including them in routine perinatal care and shared decision-making, and addressing their specific concerns can foster empowerment, legitimacy, and emotional validation throughout the perinatal process (Griggs et al., 2021; Kerppola et al., 2020; Mezzalira et al., 2025; Permezel et al., 2023). Both SMW and HPs emphasized the need for improved healthcare training in the use of inclusive language and in fostering natural, open, and respectful interactions with diverse families. Participants noted that LGBTQIA+ service users often feel compelled to “educate” health professionals about their needs—a situation perceived as frustrating and potentially acting as a barrier to seeking care (Mezzalira et al., 2025). The lack of sensitivity among HPs and the need for families to repeatedly “come out” in healthcare settings point to significant gaps in HPs’ competencies in LGBTQIA+ inclusive practice (Lacombe-Duncan et al., 2022; Permezel et al., 2023).

Taken together, these findings support the relevance of minority stress theory (Meyer, 2003) for understanding the experiences of LGBTQIA+ individuals during the perinatal period (Lacombe-Duncan et al., 2022). The distress expressed by SMW in this study can be interpreted, at least in part, as resulting from the social conditions to which they are exposed during the perinatal period, such as perceived social discrimination and limited sensitivity among HPs.

Aim 2: Co-design of the Perinatal mHealth Intervention with SMW and HPs

The thematic analysis identified features closely aligned with SMW's perinatal care experiences, such as the importance of tailored information and resources, the value of social support for mental health, and the use of inclusive language and imagery that reflect the diversity of women and families. Both SMW and HPs emphasized shared decision-making and humanized care throughout the perinatal process, underscoring the importance of respectful and inclusive practices. Some women reported emotionally

safe experiences, with one participant recalling a physician stating: *“I wanted the best for you, and I treated you as if you were my daughter, the same.”* Previous studies have similarly documented positive, sensitive, and respectful perinatal care experiences among SMW in Spain and other European countries (Álvarez-Bernardo & Romero-López, 2017; Larsson et al., 2009; Rön Dahl et al., 2009). However, other women described feeling objectified, neglected, or disempowered by HPs during pregnancy care, experiences that may negatively impact mental health and discourage subsequent help-seeking (Permezel et al., 2023).

SMW and HPs reported a lack of available information and resources regarding preconception, pregnancy, and postpartum care, as well as significant variability in clinical protocols across healthcare centers, which generates insecurity, uncertainty, and dissatisfaction—issues also noted by LGBTQIA+ individuals in previous studies (Permezel et al., 2023). In response to these gaps, families often turn to private services to compensate for limitations in the public healthcare system, a trend observed in other countries where public funding for assisted reproduction is restricted (Gregory et al., 2022). This variability in perinatal care experiences and reliance on private services reflects the persistence of structural barriers to universal access to perinatal care for LGBTQIA+ individuals worldwide (Álvarez-Bernardo & Romero-López, 2017; Gregory et al., 2022; Nguyen et al., 2025).

Given these limitations in information and resources, SMW and HPs expressed clear preferences for interventions aimed at improving mental health. There was a strong emphasis on specific strategies to navigate “coming out” in healthcare settings, resources to empower the non-birthing mother, and tools to support couple communication and coparenting. The scarcity of services and resources tailored to LGBTQIA+ individuals during the perinatal period has been noted in previous research (Rondahl et al., 2009). Psychoeducation on minority stressors—such as coming out or managing discrimination—represents an essential and highly requested resource among members of the LGBTQIA+ community (Fowler et al., 2023) and could potentially mitigate their elevated risk of emotional symptomatology (Lapping-Carr et al., 2023).

Peer support emerged as a key resource for the perinatal mental health of SMW. The recognized role of social support in mental health appears to take on particular importance for LGBTQIA+ individuals during the perinatal period, as noted in previous studies (Howat et al., 2023; Mezzalana et al., 2024). Facilitating social support networks and systems for SMW may be effective in promoting resilience and preventing mental health difficulties (Marsland et al., 2022). Connected to the importance of informal social support, SMW valued online spaces for sharing information and connecting with other parents, as well as directories that provide resources specifically tailored to the LGBTQIA+ community. Recent research has highlighted the relevance of community-based strategies and, in particular, the role of peer groups within LGBTQIA+ communities in providing information and emotional support, and in fostering lasting connections—including through online platforms (Haugland et al., 2023; Kirubakaran et al., 2022).

Regarding user experience and intervention design, SMW and HPs recommended and valued inclusive language that reflects family diversity, representative imagery depicting diverse women and families, and

options for profile configuration based on users' identities and family structures. These preferences align with recent recommendations for inclusive mHealth intervention design to ensure gender equity (Figueroa et al., 2021) and safeguard LGBTQIA+ rights (Fowler et al., 2023).

Overall, the participatory approach adopted in this study is consistent with evidence showing that co-design enhances the acceptability and usability of digital health interventions, particularly among minority populations (Noorbergen et al., 2021). These co-design processes underscore the potential utility of the mHealth intervention in reducing access barriers and promoting perinatal mental health (Chen et al., 2023; Motrico et al., 2023). Rather than advocating segregated interventions, the findings support adapting universal preventive tools through inclusive, minority-stress–informed design.

Limitations and Future Research

The small sample size of SMW, predominantly composed of participants with medium to high educational and socioeconomic status, limits the transferability of the findings. Future research should aim to include more intersectionally diverse samples to explore how ethnicity, socioeconomic status, gender, and sexual orientation interact during the perinatal period. This study is situated within the legal and social context of Western societies, specifically Spain, a leading country in family rights (ILGA, 2024). Consequently, the findings may have limited transferability to other sociocultural and healthcare contexts, where conditions and resources are likely to be more constrained, and perinatal mental health challenges for SMW may be further exacerbated. Future research should evaluate whether inclusive adaptations of preventive mHealth interventions reduce perinatal depression and anxiety among SMW using quantitative and mixed-methods designs. Longitudinal implementation research is also needed to assess how inclusive digital health interventions are embedded within perinatal routine care and whether they contribute to reducing mental health inequities over time.

Social-Policy Implications

The findings have important implications for perinatal mental health care and for the design of mHealth interventions. First, this study highlights the need for affirming, inclusive perinatal practices, including professional training that addresses minority stress, inclusive language, and explicit recognition of non-birthing individuals as parents.

First, it is important to strengthen training on family diversity for HPs to reduce heteronormativity and foster natural, open communication with SMW—a need long recognized in the literature (Rondahl et al., 2009) and still evident in current narratives (Griggs et al., 2021). Second, it is urgent to recognize family diversity and avoid practices and protocols that perpetuate exclusion and discrimination against LGBTQIA+ families (Mezzalira et al., 2025; Nguyen et al., 2025). Clinical protocols must ensure representation and guarantee equal treatment throughout the perinatal process. Administrative procedures should be flexible and adaptable to the identities and orientations of family members. Third, inclusive interventions for perinatal mental health should incorporate both general and tailored content for LGBTQIA+ individuals, social support resources, forums for sharing experiences and building connections, affirming imagery, and personalized options regarding gender identity and sexual

orientation. Fourth, the results support the development of mHealth interventions that reduce reliance on repeated disclosure and provide validation outside potentially stigmatizing clinical encounters. The co-design insights directly inform adaptations of the *[blinded for review]* app, including personalized profiles, tailored content, and psychoeducation addressing disclosure and minority stressors in healthcare settings. The intervention also provides spaces for user interaction, including designated areas for LGBTQIA+ members.

Conclusion

This study provides novel qualitative evidence on the perinatal mental health experiences of SMW in two-mother families and offers theory-informed guidance for the co-design of an inclusive preventive mHealth intervention. Using a co-design approach informed by minority stress, intersectionality, and prevention science perspectives, the findings reveal how heteronormative systems shape perinatal vulnerability and identify actionable opportunities for early and equitable interventions. Inclusive adaptation of universal mHealth interventions such as *[blinded for review]* represents a promising pathway toward advancing perinatal mental health equity for sexual minority families.

Declarations

Author Contribution

IC: Conceptualization, Formal analysis, Investigation, Writing - Original Draft; Writing - Review & Editing; Pd-J-I: Methodology, Formal analysis, Investigation, Writing - Original Draft; Writing - Review & Editing; FJN-C: Validation, Investigation, Writing - Original Draft; Writing - Review & Editing; AC: Conceptualization, Writing - Original Draft, Writing - Review & Editing; LRL-C: Resources, Writing - Review & Editing; EM: Conceptualization, Resources, Investigation, Writing - Review & Editing; Funding acquisition.

Data Availability

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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