

QUALITATIVE FEEDBACK ON A PERSONALISED DIGITAL SELF-HELP CBT PROGRAMME FOR MOTHERS

Sharon Lu Huixian¹, Chan Shiao-Yng², Tan Hong Ming³, Su Hui Ho², Tan Siew Ee Ethel⁴, Elizabeth Yap Ning Xuan¹, Pandya Poorva Harshang³, Andrew Tay Bin Song³, Eunice Lum Jing Ting³, Geoffrey Chern-Yee Tan¹
¹*Institute of Mental Health*, ²*National University Hospital*, ³*National University of Singapore*, ⁴*Singapore University of Social Sciences*

Introduction

- Perinatal depression and anxiety affect many women in Singapore, yet the application of Internet-based Cognitive Behavioural Therapy (iCBT) programmes in Asian settings remains underexplored.
- This study examined qualitative feedback on an iCBT programme tailored for mothers in Singapore and its fit within existing services.

Objectives

- To **evaluate mothers’ and service providers’ perspectives** on the iCBT programme’s acceptability, feasibility, and potential integration into existing routine clinical care
- To identify areas for refinement, including engagement strategies, implementation support, data governance, and risk-escalation procedures

Methodology

- Nine web-based self-help iCBT modules** targeting vulnerability factors of perinatal depression and anxiety were developed.
- 30 mothers received **personalised module recommendations** based on their vulnerability profiles curated from questionnaire scores. Semi-structured interviews were conducted with **15 mums** to **evaluate the feasibility and acceptability** of the iCBT programme.
 - Only 5 of the interviewed mums have previously received any form of mental health support | Almost all interviewed mums completed the introductory Module 0 ($n = 14$) and completed at least 4 of the remaining 8 modules ($n = 13$).
- 10 perinatal service providers** were also interviewed to gain their perspectives on the feasibility, acceptability, and implementation of the iCBT programme.
 - Psychiatrists ($n = 5$), Clinical Psychologist ($n = 1$), Occupational Therapist ($n = 1$), Case Manager ($n = 1$), Resident Doctor ($n = 1$), and Prenatal/Postpartum Wellness Provider ($n = 1$)
- The **interviews were guided by the Consolidated Framework for Implementation Research (CFIR)**, and conducted by a female Principal Clinical Psychologist and male Consultant Psychiatrist, both of whom have expertise in mood disorders and domain knowledge on psychotherapy.
- Data analysis was informed by Braun and Clarke’s (2006) framework for thematic analysis, Elliott and Timulak’s (2021) descriptive-integrative qualitative method, and Qiao et al.’s (2025) approach to coding semi-structured interviews with large language models (LLMs).
 - Firstly, structured prompts were developed for LLMs to extract and code key points from the interviews. Next, the LLMs grouped and appraised codes into candidate domains and themes based on semantic similarity. Afterwards, human researchers independently reviewed, refined and adjudicated codes and themes and resolved any discrepancies by consensus.

Results: Feedback from Mums

Domain 1: Why Mothers Joined and What They Hoped to Get Out of It	Count
1.1 Personal distress and unmet support needs drove participation	9
1.2 Altruistic and research-oriented motivations also facilitated participation	6
1.3 Low-barrier access and social referral facilitated uptake	3
1.4 Curiosity and self-improvement motivated engagement among mothers without acute need	8

Domain 3: How the Programme was Delivered	Count
3.1 Repetitive pre- and post-module questionnaires were a persistent and widely shared barrier to engagement	6
3.2 Technical issues and poor platform usability created friction that undermined the experience	3
3.3 Mothers strongly preferred mobile app and audio formats over the current browser-based platform	12
3.4 Greater interactivity and personalised reflection features would make the programme feel more dynamic and tailored	7
3.5 Slow narration, non-appealing visuals, and monotonous presentation reduced motivation to continue	3
3.6 Appreciated the flexibility to self-pace and return to content	4

Domain 5: The Personalisation Experience	Count
5.1 The personalised report facilitated self-awareness and helped mothers improve their engagement with the programme	8
5.2 Report accuracy was undermined by generic content and mood variability at the time of assessment	6
5.3 The pre-assessment session added valued “human touch” and helped mothers make sense of their report	14
5.4 The pre-assessment session was experienced as too structured and results didn’t address mothers' current circumstances	4
5.5 Tailored module recommendations increased perceived personalisation and made the programme feel more manageable	5
5.6 The recommendation process had gaps that limited its accuracy, particularly where open-ended input was not captured	4

Domain 7: Mothers' Overall Feedback	Count
7.1 Overall satisfaction was positive, driven by content quality, knowledge gained, and the personalised approach	10
7.2 Satisfaction was tempered by platform usability issues and limited personal mental health impact for mothers without acute need	5
7.3 Mothers were broadly willing to recommend the programme, particularly to those experiencing postnatal distress, but often with caveats	14
7.4 Mothers felt the programme should be available to all postnatal mothers, not only those with clinical needs	2
7.5 Mothers' most consistent improvement priorities were making it more mobile-friendly and bite-sized, providing multimedia format options, reduced questionnaire burden, and stronger human support	6

Legend: • Strength , Area for Improvement
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Domain 2: First Encounters with the Programme	Count
2.1 Positive first impressions were driven by perceived relevance and ease of use	4
2.2 Negative first impressions were driven by repetitive questionnaires, robotic tone, and non-appealing visuals	3
2.3 Interactive components positively differentiated the programme from passive, presentation-style formats	1
2.4 Mothers with lower personal need felt the programme was less immediately relevant to them	2
2.5 Mothers felt that establishing peer or human connection before receiving content would improve initial receptivity	1

Domain 4: How Mothers Experienced the Programme Content	Count
4.1 Programme content was broadly valued for building self-awareness and normalising the emotional realities of motherhood	14
4.2 Mothers understood the content intellectually but struggled to apply skills in real-life and high-stress situations	11
4.3 Certain topics such as sleep advice, SMART goals and relationship skills need to be refined	14
4.4 Highly valued modules were those that helped mothers recognise their own thinking and behavioural patterns	14
4.5 Desire for more content on couples' dynamics, parenting challenges specific to child's developmental stage,intergenerational parenting conflicts and returning to work.	6
4.6 The programme was most impactful for mothers in a stable mental state and less accessible to those in acute distress	4
4.7 Mothers seeking knowledge and coping tools generally found their expectations fulfilled	7

Domain 6: The Role of Human Support	Count
6.1 Therapist check-ins were valued for sustaining motivation and providing mothers with a sense of being accompanied through the programme	12
6.2 The level of therapist support provided was insufficient for many mothers, particularly those who were more isolated or struggling	7
6.3 Preferences for check-in format varied, pointing to a need for flexible and individually tailored support options	10
6.4 Check-ins would be more valuable if they were intentionally linked to module content and guided skill application	4
6.5 Self-motivated mothers did not require therapist support to sustain engagement, suggesting that support needs vary by user	3
6.6 Peer and group-based support formats were proposed as a meaningful complement to individual therapist contact	6
6.7 Expectations of human interaction and guided support were not consistently met	13

Results: Feedback from Service Providers

Domain 1: Programme Content & Therapeutic Value	Count
1.1 Content is clinically relevant and normalises perinatal mental health experiences	9
1.2 Dense, lengthy, and emotionally heavy content risks losing engagement	9
1.3 Cultural and contextual adaptation of examples and metaphors would deepen content resonance for mothers	10

Domain 3: Participants' Suitability and Capacity	Count
3.1 iCBT fits motivated, reflective mothers with mild-to-moderate symptoms	9
3.2 Severely unwell, dysregulated, or overwhelmed mothers are unlikely to benefit	9

Domain 5: Models of Support & Delivery	Count
5.1 Fully self-guided use loses too many mothers to disengagement and unmet need	4
5.2 Pairing iCBT with human guidance keeps mothers accountable, contains distress, and provides safety in crisis	5
5.3 iCBT works best as a complement to therapy, not a replacement	7
5.4 Group and peer formats strengthen engagement and reduce isolation	4

Domain 7: System-Level Sustainability & Scalability	Count
7.1 Long-term funding is a precondition for scaling and sustaining iCBT	2
7.2 Framing iCBT as a low-threshold, non-stigmatising entry point boosts acceptability	3
7.3 Reach depends on marketing, partnerships, and embedding iCBT in community spaces	6

Domain 2: Platform Design & User Experience	Count
2.1 Mobile-friendly, multimedia formats would better fit mothers' fragmented attention and on-the-go use	9
2.2 Cumbersome navigation and dense interfaces overwhelm overstretched mothers	6
2.3 Inclusive, professional UI/UX investment would broaden the platform's reach	5

Domain 4: Contextual Constraints and Enablers	Count
4.1 The demands of perinatal life leave mothers with little capacity for iCBT	9
4.2 Programme access depends on resources not all mothers can rely on	7
4.3 Stigma, privacy fears, and mistrust deter mothers from engaging	4
4.4 Informal and social support frees mothers up to engage	5

Domain 6: Service-Level Implementation & Integration	Count
6.1 Mother uptake hinges on whether clinicians believe in and recommend iCBT	4
6.2 Anchoring iCBT in existing workflows and screening pathways enables practical integration	8
6.3 Stretched clinic capacity crowds out time for iCBT orientation and referral	3
6.4 Continuous feedback from users and clinicians is needed to refine iCBT over time	2

Conclusion and Future Directions

- Feedback obtained affirmed the **strong relevance and value of our adapted iCBT programme for the perinatal population**. They will be incorporated into future refinement and implementation planning.

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