

Revolutionizing Maternal Mental Health: Virtual Support Interventions to Enhance Maternal Well-being

Confidence C. Francis-Edoziuno and Ruth Lucas, University of Connecticut, School of Nursing

Introduction

- Maternal stress, anxiety, and depression are major public health concerns that affect both maternal and child well-being.^{1,2}
- Many mothers face barriers to accessing mental health support in the first year postpartum.³
- Virtual interventions offer accessible and flexible solutions to address these challenges.³⁻⁵

Purpose

- This systematic review evaluates the effectiveness of virtual support interventions in reducing maternal stress, anxiety, and depression in mothers aged 18 years and older.

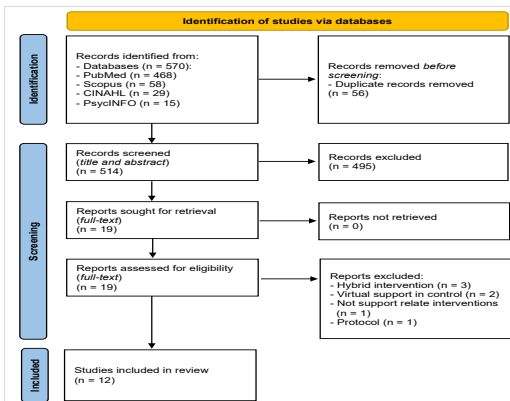


Figure 1. PRISMA 2020 Flow Chart Diagram of Study Selection Process

Method

- Study Design:** Systematic review following PRISMA guidelines and PICO framework
- Databases Searched:** PubMed, PsycINFO, Scopus, and CINAHL databases (searched in May 2024)
- Eligibility Criteria:** Randomized controlled trials (RCTs) evaluating virtual interventions for reducing maternal stress, anxiety, and/or depression in mothers aged 18 years and older.
- Data Screening, Selection, and Synthesis:** Conducted using Rayyan (2022) for screening and narrative synthesis of findings.
- Quality Assessment:** Revised Cochrane risk-of-bias tool and Jadad Scale

Table 1: Demographic Characteristics of Included Studies

1st Author and Year	Country	Sample Size (n)	Mean Age (Years)	Population	Maternal Phase	Outcomes
Coo (2024)	Chile	n=128	25 years	First-time mothers (Infant 4-10 weeks)	Postpartum	Anxiety and Depression
Danahey (2023)	United States	n=191	32 years	Women who are pregnant and <1 year postpartum	Prenatal and Postpartum	Stress, Anxiety, and Depression
Ehrensaff (2016)	United States	n=52	N/A	Young mothers pursuing post-secondary education (Preschool)	Parenting mothers	Stress
Hulsbosch (2023)	Netherlands	n=360	31.2	Pregnant women	Prenatal	Anxiety and Depression
Lennard (2021)	Australia and New Zealand	n=470	32.5	Mothers ≤ 2 years postpartum	Postpartum	Stress, Anxiety, and Depression
Liu (2022)	China	n=130	31.8	Puerperae/ Mothers who just gave birth	Postpartum	Depression
MacKinnon (2022)	Canada	n=65	33.8	Mothers of preschoolers aged 18-36 months	Parenting mothers (Preschool)	Stress, Anxiety, and Depression
Sawyer (2019)	South Australia	n=133	N/A	New mothers	Postpartum	Depression
Shorey (2019)	Singapore	n=138	32.1	Mothers	Postpartum	Anxiety and Depression
Van Lieshout (2021)	Canada	n=403	31.8	Women with infants >12 months	Postpartum	Anxiety and Depression
Vigod (2021)	Canada	n=98	33.4	Mothers with infants 0-12 months old	Postpartum	Depression
Wozney (2017)	Canada	n=62	29.03	Mothers	Postpartum	Depression

Results

Included Studies: 12 RCTs, total sample size = 2,092 mothers

Modes of Intervention Delivery: Mobile apps, web-based platforms, Zoom, WhatsApp

Outcomes:

- Mood-improving interventions (n = 191) significantly reduced maternal stress
- Virtual cognitive-behavioral therapy and mindfulness improved maternal anxiety (n = 468) and depressive symptoms (n = 862)
- Telehealth delivery modality was not significant, but engagement, flexibility, and accessibility influenced outcomes

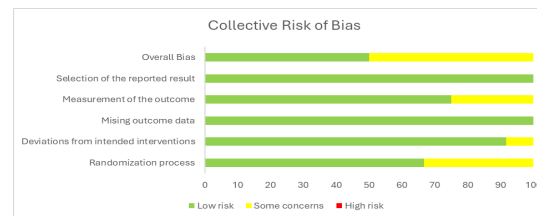


Figure 2. Assessment of Risk of Bias using the Revised Cochrane RoB 2 Tool

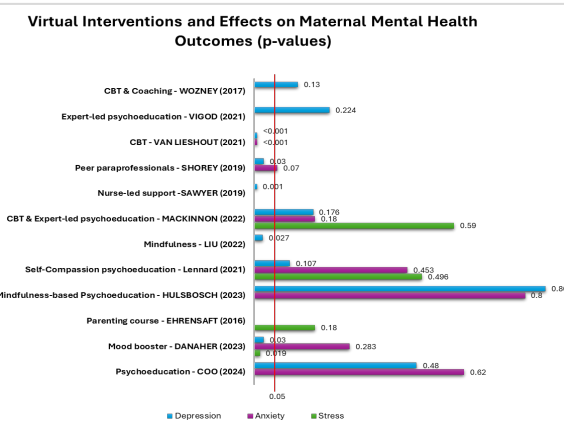


Figure 3: Virtual Intervention Effects on Maternal Stress, Anxiety, and Depression.

Conclusion & Implications

- Virtual support interventions demonstrated promise in reducing maternal stress, anxiety, and depression, albeit varying results.
- Incorporating these interventions may provide essential mental health services to mothers, especially those in underserved communities
- Future research should focus on optimizing virtual intervention design and implementation for enhanced effectiveness.

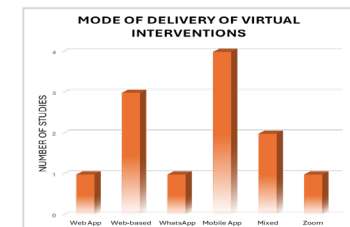


Figure 4. Mode of Delivery of Virtual Interventions

References

- Satyanarayana VA, Lukose A, Srinivasan K. Maternal mental health in pregnancy and child behavior. Indian J Psychiatry. 2011;53(4):351-361. doi:10.4103/0019-5545.91911
- American College of Obstetricians and Gynecologists. Summary of Perinatal Mental Health Conditions. 2024. Accessed July 23, 2024. <https://www.acog.org/programs/perinatal-mental-health/summary-of-perinatal-mental-health-conditions>
- MacKinnon AL, Simpson KM, Salisbury MR, et al. Building Emotional Awareness and Mental Health (BEAM): A Pilot Randomized Controlled Trial of an App-Based Program for Mothers of Toddlers. Front Psychiatry. 2022;13. doi:10.3389/fpsy.2022.880972
- Guille C, Heinrich N, Brinson AK, Jahrike HR. Improving the Management of Maternal Mental Health with Digital Health Care. Psych Res Clin Pract. 2024;6:23-32. doi:10.1176/appi
- Department of Health and Human Services USA. Telehealth for maternal mental health. April 21, 2024. Accessed February 11, 2025. <https://telehealth.hhs.gov/providers/best-practice-guides/telehealth-maternal-health-services/telehealth-maternal-mental>