



Scaling up Mental Healthcare for Perinatal Populations: Is Telemedicine the Answer?

Daisy R. Singla^{1,2,3} · Katarina Savel² · Cindy-Lee Dennis^{3,5,6} · Jo Kim^{7,8} · Richard K. Silver^{7,8} · Simone Vigod^{3,4,9} · Ariel Dalfen^{2,3,4} · Samantha Meltzer-Brody¹⁰

Accepted: 26 October 2022 / Published online: 19 November 2022

© The Author(s), under exclusive licence to Springer Science+Business Media, LLC, part of Springer Nature 2022

Abstract

Purpose of Review Telemedicine has transformed our ability to access and offer mental healthcare. There remain key questions to facilitate scalable, patient-centered solutions for perinatal mental health. We critically evaluate the recent literature and propose potential future directions.

Recent Findings The current literature highlights the promise of telemedicine in the prevention and treatment of perinatal depression, including the preference for and the potential efficacy of telemedicine-delivered mental healthcare when compared to in-person treatments. There remains a need for large, adequately powered randomized controlled trials; integration of trauma into depression and anxiety trials, transdiagnostic treatment of perinatal women, and scaling up these effective treatments into existing health and payer systems.

Summary Pragmatic, evidence-based solutions exist to effectively scale-up treatments for perinatal mental health. While research is underway to address the growing treatment gap, questions remain regarding who will deliver and pay for these treatments and how we can leverage telemedicine to treat perinatal mental health transdiagnostically.

Keywords Perinatal depression · Perinatal trauma · Telemedicine · Psychotherapy · Transdiagnostic

Introduction

The COVID-19 pandemic has amplified our need to improve access to effective mental healthcare, shining a global spotlight on the mental health and well-being of patients,

healthcare workers and communities at large. While physical distancing has been required to limit the spread of COVID-19, it is well documented that social isolation is a substantive risk factor of mental illness and suicide [1].

The pandemic and its accompanying mental health burden have been particularly challenging for pregnant women and those up to 1-year postpartum. Perinatal populations are at

This article is part of the Topical Collection on *Reproductive Psychiatry and Women's Health*

✉ Daisy R. Singla
daisy.singla@utoronto.ca

¹ Campbell Family Mental Health Research Institute, Centre for Addiction and Mental Health, 60 White Squirrel Way, Rm 313, Toronto, ON M6J 1H4, Canada

² Department of Psychiatry, Lunenfeld Tanenbaum Research Institute and Sinai Health, Toronto, Canada

³ Department of Psychiatry, Temerty Faculty of Medicine, University of Toronto, Toronto, Canada

⁴ Women's College Hospital, Toronto, Canada

⁵ Lawrence S. Bloomberg Faculty of Nursing, University of Toronto, Toronto, Canada

⁶ Li Ka Shing Knowledge Institute, St. Michael's Hospital, Toronto, Canada

⁷ Department of Obstetrics & Gynecology, NorthShore University HealthSystem and University of Chicago, Chicago, USA

⁸ Department of Obstetrics & Gynecology, University of Chicago Pritzker School of Medicine, Chicago, USA

⁹ Women's College Research Institute, Toronto, Canada

¹⁰ Department of Psychiatry, University of North Carolina at Chapel Hill, Chapel Hill, USA

heightened risk of mental health disorders [2], with depression and anxiety being the leading cause of disability among mothers worldwide [3]. The treatment gap for depression, anxiety and trauma—the most common psychiatric diagnoses emerging among perinatal populations during and after COVID-19 [4, 5]—may be as high as 80% in high-income countries such as the USA and Canada [6, 7], and even worse for women of colour [8]. Even prior to the pandemic, common barriers to in-person treatment existed, including transportation, childcare, stigma, cost and a lack of sufficiently trained professionals [9]. Physical distancing due to the pandemic and the resultant impact of social isolation on perinatal women (e.g., birthing without supportive partners and isolation from key social networks after birth) has been undeniable. For example, compared to pre-pandemic conditions, perinatal women reported greater traumatic childbirth experiences and less successful postpartum adjustments during COVID-19 [10]. Additional challenges during the COVID-19 pandemic include economic stress, housing and food insecurity, intimate partner violence and reduced access to perinatal care — all of which were further intensified among women of colour [11–13].

Given the enormous stressors and exacerbation of mental health conditions, there is a great need for innovative approaches to address the population level mental health crisis.

Telemedicine—defined as a two-way, real-time communication between a patient and practitioner—offers one potential solution and has become a necessity to address the growing mental health burden during COVID-19 [14]. Telemedicine differs from terms such as mHealth or telehealth, which refer to any intervention using the smartphone's core function of voice and text messaging and are typically supplementary to the primary treatment [14]. In March 2020, the global shutdown from the pandemic necessitated an abrupt switch to telemedicine. Although many medical specialties have since resumed providing most care in person, telemedicine has continued to be a successful and prevalent delivery method in psychiatry and behavioral medicine. With widespread uptake in response to the COVID-19 pandemic and endorsement by most major medical professional organizations including the American College of Obstetricians and Gynecologists [15] and the American Psychiatric Association [16], telemedicine is likely to remain widely available after the pandemic ends. It is therefore important to understand the current scientific literature of telemedicine for perinatal populations and explore untapped opportunities. The current paper presents a critical evaluation of the recent literature on telemedicine for perinatal mental healthcare and the potential future directions. While this commentary focuses on mental healthcare and psychotherapy specifically, the lessons learned may be relevant for other branches of medicine.

The Current Literature

The COVID-19 crisis has highlighted the essential and revolutionized role of telemedicine to offer direct-to-patient care [17]. Telemedicine may offer a promising alternative for perinatal patients in terms of flexibility, efficiency, and cost, potentially improving access and reach of mental health treatments [18]. Among perinatal populations, remote psychotherapy can offer a particularly patient-centered solution to facilitate settings and schedules (e.g., at home and during weekends), while practical barriers (e.g., wait times, costs for parking or transportation and arranging child care) can be minimized [19]. In addition, preliminary evidence suggests that perinatal women prefer to access mental healthcare remotely [20]. Growing evidence also supports the efficacy of telemedicine in both the prevention and treatment of perinatal depression [21]. Importantly, there is also evidence that perinatal women have strong *digital literacy* and are able to use their device to connect to a telemedicine visit [22].

Despite the promise of telemedicine for perinatal mental healthcare, the hope may be disproportionate to the existing literature. First, most trials are small and inadequately powered [21]; therefore, it is not clear whether telemedicine-based treatments are as effective as in-person treatments, a useful adjunct, or are slightly inferior but effective enough that they should be used with individuals who would not otherwise access care (i.e., the next-best alternative). Second, it is unknown for whom telemedicine may be more acceptable and feasible. For example, some perinatal women may experience compromised care due to a lack of privacy, reduced physical and psychological safety and competing household demands [23]. This will inevitably increase the gap in access to treatment among the most vulnerable, socioeconomic groups. Third, few studies have examined important and growing mental health concerns such as comorbid trauma and substance use alongside depression and anxiety symptoms. Finally, with the growing shortage of mental health workers in even the world's richest countries, there is growing uncertainty about who will provide these services and who will pay for it.

Future Directions

To understand the true promise of telemedicine, evidence-based solutions are required to address the growing burden of poor perinatal mental health. To achieve this goal, there is a need for (1) more evidence, (2) transdiagnostic treatments for perinatal mental health (and beyond perinatal depressive and anxiety symptoms), and (3) scalable models of care.

Need for Robust Evidence

While research to date has demonstrated comparability of telemedicine-based mental healthcare to traditional in-person modalities, the evidence of its effectiveness among perinatal populations remains scant. The sample sizes are often small and there has been a lack of integration in real-world settings. Large randomized controlled trials are required to answer clinically important questions that impact treatment uptake and fidelity. These include (1) whether mental health interventions delivered via telemedicine are as effective as in-person interventions; (2) who may benefit more from one modality compared to another; and (3) which relevant barriers and facilitators influence integration and scalability of effective mental healthcare services.

Importantly, exciting developments are on the horizon. For example, the Scaling Up Maternal Mental healthcare by Increasing access to Treatment (SUMMIT) Trial is a large multicenter study that is currently being implemented in real-world healthcare settings in Toronto, Chapel Hill and Chicago [24•]. All eligible perinatal women receive up to eight sessions of a brief, behavioral activation treatment by a trained treatment provider. To date, SUMMIT boasts 90% retention rates and high patient satisfaction scores—including among culturally diverse populations [25]. Upon completion, it will be among the largest psychotherapy trials in the world ($N=1,226$). This large, adequately powered trial will lend itself to determine whether telemedicine-delivered psychotherapy (either by a specialist or non-specialist provider) is non-inferior to in-person treatment as usual for perinatal depressive, anxiety and trauma symptoms.

Asynchronous interventions (no direct real-time contact) may also help surmount barriers that make it challenging for mothers to connect in real time. In Japan, Nishi et al. [26•] are currently implementing a large trial ($N=5000$) to examine the effectiveness of a fully automated smartphone-based six-session cognitive behavioural intervention to address both antenatal and postpartum depression. Eligible pregnant women randomized to the intervention arm receive access to six weekly 5-minute modules designed to educate participants on various strategies in stress management (i.e., behavioural activation, self-compassion and problem solving) in addition to treatment-as-usual (TAU; in this case, receiving information about mental health during pregnancy). The results of this trial will provide evidence as to whether an internet-based CBT treatment is effective in preventing the onset of major-depressive disorder up to 3 months postpartum. If deemed effective, this highly scalable intervention may supplement or provide an accessible alternative to traditional models of provider-led psychotherapy for perinatal depression.

These trials lend evidence to answer the question: ‘what works for whom,’ in terms of which perinatal women may benefit more from one modality vs. the other. In addition, it will be important to examine both self-help models alongside those that are facilitated by a therapist (see Fig. 1). This answer is critical to integrating and scaling up effective mental healthcare for perinatal populations in real-world settings in an ethical and feasible way.

Integrating Trauma to Treat Perinatal Women Transdiagnostically

To date, the field of perinatal mental health has largely focused on perinatal depression and more recently, anxiety. However, in the wake of the COVID-19 pandemic, there is growing awareness and concern that these symptoms are often comorbid or predated by other common conditions such as post-traumatic stress disorder (PTSD). Approximately one in five trauma-exposed individuals worldwide suffer from clinically significant trauma symptoms during pregnancy [27]. The onset of these symptoms often predate pregnancy due to adverse childhood experiences, and may increase risk of postpartum psychiatric illness [28]. Trauma symptoms may also occur during pregnancy [29] as the result of distressing events such as neglect, interpersonal violence, or natural disaster, or after pregnancy and childbirth following a traumatic birth experience or loss. Similar to perinatal populations suffering from depression and anxiety symptoms, those with clinically significant trauma symptoms are at increased risk of adverse perinatal outcomes including preterm birth, low birth weight, obstetrical complications, worsened postpartum mood and anxiety disorders, poor maternal-child attachment, and poor child outcomes [30]. Importantly, impaired attachment may be more closely related to maternal exposure to early trauma rather than to specific diagnoses [31], underscoring the need to focus on trauma symptoms that predate the perinatal period.

Trauma-focused, exposure treatments have been demonstrated to be among the most effective treatments in mental healthcare [32]. In these treatments, patients repeatedly confront internal and/or external trauma reminders until they no longer experience clinically significant distress associated with these cues. In contrast to popular opinion and clinical practice, trauma symptoms are reduced through a process known as *inhibitory learning*—whereby an individual learns new responses to trauma cues that compete with and prevent old responses. Despite their effectiveness, exposure-based interventions remain inaccessible and largely untested among perinatal women [33]. Perinatal women are often excluded and severely underrepresented in clinical research for trauma, and therefore the evidence for trauma-focused

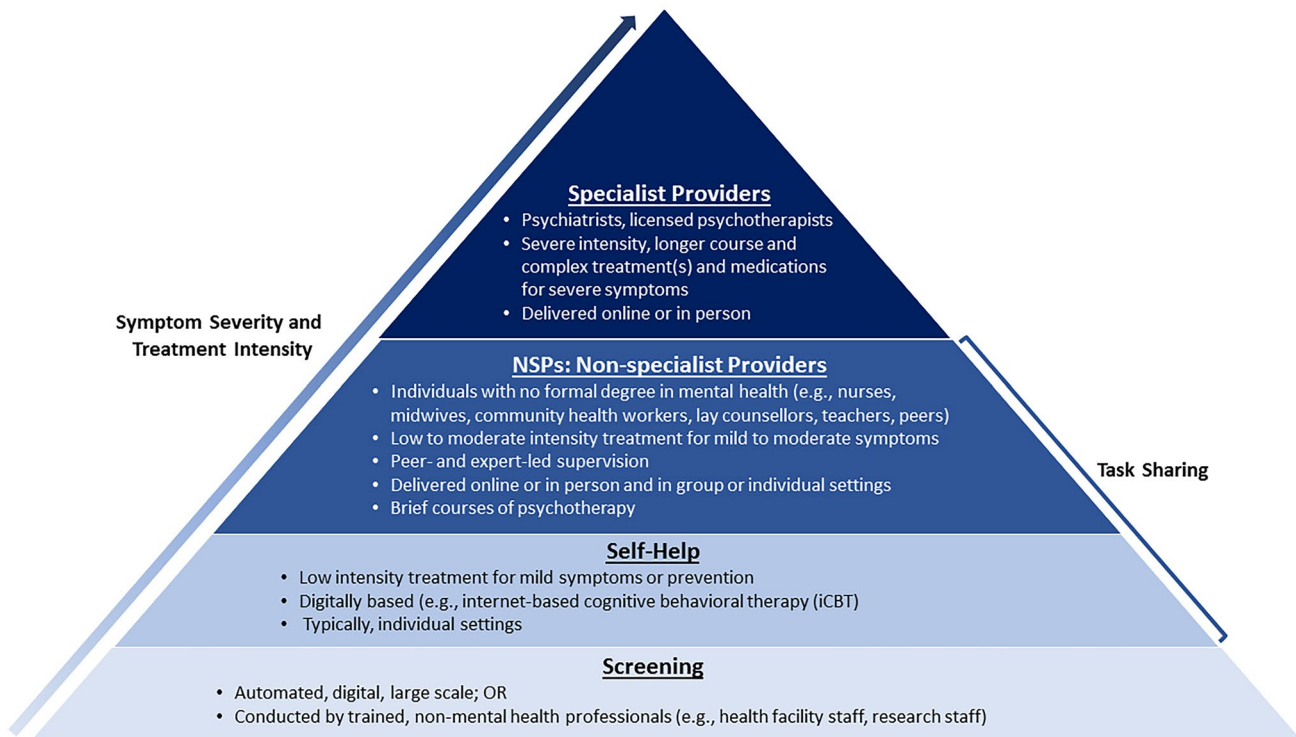


Fig. 1 Stepped care model for delivering psychotherapy

interventions among this population is limited. In a seminal review that identified over 78 treatments for depression, anxiety and trauma-related disorders during the perinatal period [34], the authors identified only one randomized controlled trial for trauma-related disorders and the treatment involved psychoeducation. While perinatal depression commonly co-occurs with trauma symptoms, clinical trials and treatment research for perinatal depression and anxiety rarely assess trauma symptoms. This “don’t ask, don’t tell” attitude is disadvantageous to both patients and providers because it may compromise a patient’s response to treatment, reducing their engagement with treatment and their alliance with the therapist [35, 36].

Evaluating effective “talk therapies,” such as psychological treatments, among perinatal populations offers a unique opportunity to improve maternal mental health *transdiagnostically*—i.e., treating multiple mental health conditions simultaneously—and interrupt a pattern of intergenerational transmission of trauma and psychiatric vulnerability. This will require effective exposure treatments to become more accessible and scalable, including through the use of telemedicine. There has been growing evidence to support telemedicine-delivered psychological treatments to reduce trauma symptoms with internet-delivered cognitive behavioural therapy [37, 38] and expressive writing [39], and more recently, brief prolonged exposure [40]. Few studies to date have targeted perinatal populations, although several appear

to be on the horizon [41]. In accordance with most trials for telemedicine-delivered treatments for perinatal depression and anxiety (see above), the majority involve small sample sizes—calling to question the generalisability of study results. Additional large-scale, pragmatic trials that leverage task-sharing models and transdiagnostic treatments are required to address the growing and concurrent burden of perinatal depression, anxiety and trauma.

Scalable Models of Care: Task Shifting and Addressing Inequities

There has always been a shortage of mental health professionals to address the treatment gap for mental health. Perinatal mental health is no exception. One innovation to improve access to care is *task sharing*—the rational redistribution of tasks [42] to train non(mental health)-specialist providers (NSPs) to deliver brief psychotherapies with appropriate levels of supervision. NSPs are individuals without a specialized degree in mental health and range from community health workers, peers, lay counsellors and teachers to midwives and nurses. Over the past three decades, task sharing has gained a growing popularity and evidence worldwide with applications for perinatal mental health specifically in low- and middle-income countries [43], as well as high-income countries, such as the USA and Canada [44].

Despite these advancements, important and unresolved issues remain. First, the COVID-19 pandemic has highlighted systematic failures in diverse healthcare systems and a growing health professional workforce shortage, particularly among nurses. Therefore, relying only on nurses may be unpragmatic and unfeasible to address the widening treatment gap for perinatal mental health. Other types of NSPs—including peers—have successfully implemented mental healthcare worldwide [44, 45] and are arguably preferred over health professionals and specialist providers because they offer a less hierarchical and more patient-centered approach [46, 47]. Peers may also be more preferred by Black, Indigenous, People of Colour (BIPOC) perinatal populations who are less likely to access and continue using mental health services [48, 49] due to racialized barriers that include experiences of discrimination and racial micro-aggression, mistrust of healthcare providers and reduced quality of services [49–51]. Despite their effectiveness, scalable models including peers or other cadres of NSPs have not been widely implemented to address the burden of perinatal mental health. This may be partly due to professional guilds that prevent a collaborative, stepped care model [52] in which peers and NSPs are embedded in existing healthcare structures. Similarly, compensation models vary by context [43, 46] and research in low- and middle-income countries on community healthcare workers (e.g., [53, 54]) show that it is expected, equitable and ethical to pay individuals for their work.

In addition, it remains unclear how these mental health treatments will be reimbursed and sustained, and how the workforce delivering these treatments will be identified. In both Canada and the USA, practitioners are required to be licensed within the state or province where the patient is receiving their care—thereby limiting patients from accessing telemedicine services from out of jurisdiction practitioners. These restrictions disproportionately affect perinatal patients who live in areas with few subspecialty practitioners or who have transportation and other practical barriers. In addition, it remains unclear who will pay for services [55]. Specifically, *payment parity*—equal reimbursement for remote and in-person visits—is particularly challenging in the USA for several reasons. First, coverage for behavioural health and psychiatry interventions is often “carved out” by insurers, meaning that coverage for these services are selectively removed from standard health insurance plans and paid for separately by patrons [56]. Second, co-payments on many insurance programs are very high and may be prohibitive to seeking care for many patients. Third, access to clinicians who are “in-network” by a specific payer, may be exceedingly poor. The answer remains unknown about how to overcome these professional guilds in order to successfully implement scalable and sustainable mental healthcare models in existing health systems. Additional trials are required to compare various cadres of treatment providers in real-world settings to ultimately

inform a stepped care model whereby the most effective and least resource-intensive treatment is delivered first, followed by “stepping up” to more resource-intensive treatments through a task-sharing model (see Fig. 1).

Conclusion

In sum, the need to access effective mental healthcare has been amplified for perinatal populations worldwide in the wake of COVID-19. The traumatic events of the past few years require us to tackle trauma as a priority area among the perinatal population. Telemedicine has transformed our ability to access and offer mental healthcare but there remain key questions to facilitate patient-centered, evidence-based solutions for perinatal mental health beyond the pandemic. Pragmatic solutions are on the horizon and large-scale studies are required to inform future directions.

Funding DRS is a womenmind™ Scientist who is partially supported by an Academic Scholars Award by the Department of Psychiatry at the University of Toronto. The SUMMIT Trial is funded by Patient Centered Outcome Research Institute (PCORI), PCS-2018C1-10621.

Declarations

Conflict of Interest The authors report no conflicts of interest. AD reports personal fees from BRIA Inc, outside the submitted work. SMB reports grants from Sage Therapeutics, personal fees from WebMD, grants from Janssen, personal fees from Ancora Bio, personal fees from Modern Health, outside the submitted work. SV reports royalties received for submitted work from UpToDate Inc, outside the submitted work.

References

Papers of particular interest, published recently, have been highlighted as:

- Of importance
1. Heinrich LM, Gullone E. The clinical significance of loneliness: a literature review. *Clin Psychol Rev.* 2006;26(6):695–718.
 2. Chen H, Selix N, Nosek M. Perinatal anxiety and depression during Covid-19. *The J Nurse Pract.* 2020.
 3. Ferrari AJ, Charlson FJ, Norman RE, Patten SB, Freedman G, Murray CJ, et al. Burden of depressive disorders by country, sex, age, and year: findings from the global burden of disease study 2010. *PLoS Med.* 2013;10(11):e1001547.
 4. Lai J, Ma S, Wang Y, Cai Z, Hu J, Wei N, et al. Factors associated with mental health outcomes among health care workers exposed to coronavirus disease 2019. *JAMA Network Open.* 2020;3(3):e203976-e.
 5. Ettman CK, Abdalla SM, Cohen GH, Sampson L, Vivier PM, Galea S. Prevalence of depression symptoms in US adults before and during the COVID-19 pandemic. *JAMA network open.* 2020;3(9):e2019686-e.

6. Byatt N, Xiao RS, Dinh KH, Waring ME. Mental health care use in relation to depressive symptoms among pregnant women in the USA. *Arch Womens Ment Health*. 2016;19(1):187–91.
7. Thornicroft G, Chatterji S, Evans-Lacko S, Gruber M, Sampson N, Aguilar-Gaxiola S, et al. Undertreatment of people with major depressive disorder in 21 countries. *Br J Psychiatry*. 2017;210(2):119–24.
8. Jankovic J, Parsons J, Jovanović N, Berrisford G, Copello A, Fazil Q, et al. Differences in access and utilisation of mental health services in the perinatal period for women from ethnic minorities—a population-based study. *BMC Med*. 2020;18(1):1–12.
9. Kazdin AE. Addressing the treatment gap: a key challenge for extending evidence-based psychosocial interventions. *Behav Res Ther*. 2017;88:7–18.
10. Mayopoulos GA, Ein-Dor T, Dishy GA, Nandru R, Chan SJ, Hanley LE, et al. COVID-19 is associated with traumatic childbirth and subsequent mother-infant bonding problems. *J Affect Disord*. 2021;282:122–5.
11. Morales DX, Morales SA, Beltran TF. Racial/ethnic disparities in household food insecurity during the covid-19 pandemic: a nationally representative study. *J Racial Ethn Health Disparities*. 2020:1–15.
12. Purtle J. COVID-19 and mental health equity in the United States. *Soc Psychiatry Psychiatr Epidemiol*. 2020;55(8):969–71.
13. Rieger A, Blackburn AM, Bystrynski JB, Garthe RC, Allen NE. The impact of the COVID-19 pandemic on gender-based violence in the United States: framework and policy recommendations. *Psychol Trauma Theory Res Pract Policy*. 2022;14(3):471.
14. Shaw J, Jamieson T, Agarwal P, Griffin B, Wong I, Bhatia RS. Virtual care policy recommendations for patient-centred primary care: findings of a consensus policy dialogue using a nominal group technique. *J Telemed Telecare*. 2018;24(9):608–15.
15. Implementing telehealth in practice. *Obstet Gynecol*. 2020;135(2):e73–9.
16. Association AP. Position statement on telemedicine in psychiatry: American Psychiatric Association; 2021 Available from: <https://psychiatry.org/psychiatrists/practice/telepsychiatry>.
17. Smith AC, Thomas A, Snoswell CL, Haydon H, Mehrotra A, Clemensen J, et al. Telehealth for global emergencies: implications for coronavirus disease 2019 (COVID-19). *J Telemed Telecare*. 2020;1357633X20916567.
18. Gude J, Subhedar RV, Zhang MH, Jain P, Bhela J, Bangash F, et al. Emerging needs and viability of telepsychiatry during and post COVID-19 era: a literature review. *Cureus*. 2021;13(8).
19. Saad A, Magwood O, Aubry T, Alkhateeb Q, Hashmi SS, Hakim J, et al. Mobile interventions targeting common mental disorders among pregnant and postpartum women: an equity-focused systematic review. *PLoS ONE*. 2021;16(10):e0259474.
20. Ackerman M, Greenwald E, Noulas P, Ahn C. Patient satisfaction with and use of telemental health services in the perinatal period: a survey study. *Psychiatr Q*. 2021;92(3):925–33.
21. Nair U, Armfield NR, Chatfield MD, Edirippulige S. The effectiveness of telemedicine interventions to address maternal depression: a systematic review and meta-analysis. *J Telemed Telecare*. 2018;24(10):639–50.
22. Khoong EC, Butler BA, Mesina O, Su G, DeFries TB, Nijagal M, et al. Patient interest in and barriers to telemedicine video visits in a multilingual urban safety-net system. *J Am Med Inform Assoc*. 2021;28(2):349–53.
23. Andrejek N, Hossain S, Schoueri-Mychasiw N, Saeed G, Zibaman M, Puerto Niño AK, et al. Barriers and facilitators to resuming in-person psychotherapy with perinatal patients amid the COVID-19 pandemic: a multistakeholder perspective. *Int J Environ Res Public Health*. 2021;18(22):12234.
- 24.● Singla DR, Meltzer-Brody SE, Silver RK, Vigod SN, Kim JJ, La Porte LM, et al. Scaling up maternal mental healthcare by Increasing access to Treatment (SUMMIT) through non-specialist providers and telemedicine: a study protocol for a non-inferiority randomized controlled trial. *Trials*. 2021;22(1):186. **The SUMMIT Trial is large, pragmatic, non-inferiority trial comparing the effectiveness of two innovative methods of psychotherapy innovations (non-specialist provider and telemedicine) are as effective as traditional methods (specialist providers and in-person psychotherapy) to treat perinatal depressive, anxiety and trauma symptoms. The study is currently being implemented in real-world healthcare settings by the study authors in Toronto, Chapel Hill and Chicago.**
25. Singla DR, Hossain S, Andrejek N, Cohen MJ, Dennis CL, Kim J, La Porte L, Meltzer-Brody SE, Puerto Nino A, Ravitz P, Schoueri-Mychasiw N, Silver R, Vigod SN, Zibaman M, Schiller CE (2022) Culturally sensitive psychotherapy for perinatal women: A mixed methods study. *J Consult Clin Psychol* 90(10):770–786. <https://doi.org/10.1037/ccp0000754>.
- 26.● Nishi D, Imamura K, Watanabe K, Obikane E, Sasaki N, Yasuma N, et al. Internet-based cognitive-behavioural therapy for prevention of depression during pregnancy and in the post partum (iPDP): a protocol for a large-scale randomised controlled trial. *BMJ open*. 2020;10(5):e036482. **The iPDP (Internet-based cognitive-behavioural therapy for prevention of depression during pregnancy and in the post partum) trial (N=5000) will examine the effectiveness of a fully automated smartphone-based six-session cognitive behavioural intervention to address both antenatal and postpartum depression. The results of this study—currently being implemented in Japan—will lend evidence to whether this highly scalable intervention is sufficiently efficacious to supplement or be an accessible alternative to traditional models of provider-led psychotherapy for perinatal depression.**
27. Yildiz PD, Ayers S, Phillips L. The prevalence of posttraumatic stress disorder in pregnancy and after birth: a systematic review and meta-analysis. *J Affect Disord*. 2017;208:634–45.
28. Meltzer-Brody S, Larsen J, Petersen L, Guintivano J, Florio AD, Miller W, et al. Adverse life events increase risk for postpartum psychiatric episodes: a population-based epidemiologic study. *Depress Anxiety*. 2018;35(2):160–7.
29. Howard LM, Molyneux E, Dennis C-L, Rochat T, Stein A, Milgrom J. Non-psychotic mental disorders in the perinatal period. *The Lancet*. 2014;384(9956):1775–88.
30. Erickson N, Julian M, Muzik M. Perinatal depression, PTSD, and trauma: impact on mother–infant attachment and interventions to mitigate the transmission of risk. *Int Rev Psychiatry*. 2019;31(3):245–63.
31. Howard LM, Khalifeh H. Perinatal mental health: a review of progress and challenges. *World Psychiatry*. 2020;19(3):313–27.
32. McLean CP, Levy HC, Miller ML, Tolin DF. Exposure therapy for PTSD: a meta-analysis. *Clin Psychol Rev*. 2022;91:102115.
33. Stevens NR, Miller ML, Puetz AK, Padin AC, Adams N, Meyer DJ. Psychological intervention and treatment for posttraumatic stress disorder during pregnancy: a systematic review and call to action. *J Trauma Stress*. 2021;34(3):575–85.
- 34.● Nillni YI, Mehralizade A, Mayer L, Milanovic S. Treatment of depression, anxiety, and trauma-related disorders during the perinatal period: a systematic review. *Clin Psychol Rev*. 2018;66:136–48. **This large-scale systematic review (N=78 trials) examined various methods and modes of treating perinatal mental health conditions. Notably, online and computer-assisted interventions were found to be effective in reducing depressive symptoms and risk of developing major depressive disorder among perinatal women across**

- seven trials. This review also identified a significant lack of research on treatment for perinatal anxiety and trauma, with the vast majority of trials (n=73/78) focusing on perinatal depression.**
35. Cuijpers P, Reijnders M, Huibers MJ. The role of common factors in psychotherapy outcomes. *Annu Rev Clin Psychol*. 2019;15(1):207–31.
 36. Hardy GE, Bishop-Edwards L, Chambers E, Connell J, Dent-Brown K, Kothari G, et al. Risk factors for negative experiences during psychotherapy. *Psychother Res*. 2019;29(3):403–14.
 37. Kuester A, Niemeyer H, Knaevelsrud C. Internet-based interventions for posttraumatic stress: a meta-analysis of randomized controlled trials. *Clin Psychol Rev*. 2016;43:1–16.
 38. Lewis C, Roberts N, Simon N, Bethell A, Bisson J. Internet-delivered cognitive behavioural therapy for post-traumatic stress disorder: systematic review and meta-analysis. *Acta Psychiatr Scand*. 2019;140(6):508–21.
 39. Sloan DM, Marx BP, Lee DJ, Resick PA. A brief exposure-based treatment vs cognitive processing therapy for posttraumatic stress disorder: a randomized noninferiority clinical trial. *JAMA Psychiat*. 2018;75(3):233–9.
 40. Bragesjö M, Arnberg FK, Lauri KO, Aspvall K, Särholm J, Andersson E. Condensed Internet-delivered prolonged exposure provided soon after trauma: a randomised trial. *Psychol Med*. 2021;1–10.
 41. Suchan V, Peynenburg V, Thiessen D, Nugent M, Dear B, Titov N, et al. Transdiagnostic Internet-delivered cognitive behavioral therapy for symptoms of postpartum anxiety and depression: feasibility randomized controlled trial. *JMIR Form Res*. 2022;6(9):e37216.
 42. Organization WH. Update of the Mental Health Gap Action Programme (mhGAP) guidelines for mental, neurological and substance use disorders, 2015: World Health Organization; 2015.
 43. Singla DR, Kohrt BA, Murray LK, Anand A, Chorpita BF, Patel V. Psychological treatments for the world: lessons from low-and middle-income countries. *Annu Rev Clin Psychol*. 2017;13:149–81.
 44. Singla DR, Lawson A, Kohrt BA, Jung JW, Meng Z, Ratjen C, et al. Implementation and effectiveness of nonspecialist-delivered interventions for perinatal mental health in high-income countries: a systematic review and meta-analysis. *JAMA Psychiat*. 2021;78(5):498–509.
 45. Fuhr DC, Salisbury TT, De Silva MJ, Atif N, van Ginneken N, Rahman A, et al. Effectiveness of peer-delivered interventions for severe mental illness and depression on clinical and psychosocial outcomes: a systematic review and meta-analysis. *Soc Psychiatry Psychiatr Epidemiol*. 2014;49(11):1691–702.
 46. Singla D, Lazarus A, Atif N, Sikander S, Bhatia U, Ahmad I, et al. “Someone like us”: delivering maternal mental health through peers in two South Asian contexts. *J Affect Disord*. 2014;168:452–8.
 47. Fallin-Bennett A, Elswick A, Ashford K. Peer support specialists and perinatal opioid use disorder: someone that’s been there, lived it, seen it. *Addict Behav*. 2020;102:106204.
 48. Salameh TN, Hall LA, Crawford TN, Staten RR, Hall MT. Racial/ethnic differences in mental health treatment among a national sample of pregnant women with mental health and/or substance use disorders in the United States. *J Psychosom Res*. 2019;121:74–80.
 49. Wang E, Glazer KB, Sofaer S, Balbierz A, Howell EA. Racial and ethnic disparities in severe maternal morbidity: a qualitative study of women’s experiences of peripartum care. *Womens Health Issues*. 2021;31(1):75–81.
 50. Watson H, Harrop D, Walton E, Young A, Soltani H. A systematic review of ethnic minority women’s experiences of perinatal mental health conditions and services in Europe. *PLoS ONE*. 2019;14(1):e0210587.
 51. Mukherjee S, Trepka MJ, Pierre-Victor D, Bahelah R, Avent T. Racial/ethnic disparities in antenatal depression in the United States: a systematic review. *Matern Child Health J*. 2016;20(9):1780–97.
 52. Tomfohr-Madsen LM, Roos LE, Madsen JW, Leason J, Singla DR, Charlebois J, et al. Peer-led psychotherapy: the time is now. *J Clin Psychiatry*. 2022;83(3):40703.
 53. Pallas SW, Minhas D, Pérez-Escamilla R, Taylor L, Curry L, Bradley EH. Community health workers in low-and middle-income countries: what do we know about scaling up and sustainability? *Am J Public Health*. 2013;103(7):e74–82.
 54. Jain M, Caplan Y, Ramesh BM, Kemp H, Hammer B, Isac S, et al. Improving community health worker compensation: a case study from India using quantitative projection modeling and incentive design principles. *Global Health: Science and Practice*. 2022;10(3).
 55. Masters GA, Asipenko E, Bergman AL, Person SD, Brenckle L, Simas TAM, et al. Impact of the COVID-19 pandemic on mental health, access to care, and health disparities in the perinatal period. *J Psychiatr Res*. 2021;137:126–30.
 56. Frank RG, McGuire TG, Bae JP, Rupp A. Solutions for adverse selection in behavioral health care. *Health Care Financ Rev*. 1997;18(3):109.
- Publisher’s Note** Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.
- Springer Nature or its licensor (e.g. a society or other partner) holds exclusive rights to this article under a publishing agreement with the author(s) or other rightsholder(s); author self-archiving of the accepted manuscript version of this article is solely governed by the terms of such publishing agreement and applicable law.