Online Public Health Nurse–Delivered Group Cognitive Behavioral Therapy for Postpartum Depression:

A Randomized Controlled Trial During the COVID-19 Pandemic

Kathryn Huh, BHSc; Haley Layton, MPH; Calan D. Savoy, MSc; Mark A. Ferro, PhD; Peter J. Bieling, PhD; Amanda Hicks, RN, MPH; and Ryan J. Van Lieshout, MD, PhD

Abstract

Objective: Rates of postpartum depression (PPD) increased during the COVID-19 pandemic, further highlighting the need for effective, accessible treatments for PPD. While public health nurses (PHNs) can be trained to help treat PPD, it is not known if they can effectively deliver evidence-based psychotherapies online to those with PPD.

Methods: Mothers (n=159) living in Ontario, Canada, with an Edinburgh Postnatal Depression Scale (EPDS) score ≥10 and an infant<12 months of age were randomized to receive a 9-week group cognitive behavioral therapy (CBT) intervention delivered by PHNs over Zoom, between October 2020 and November 2021. Experimental group participants received CBT plus treatment as usual (TAU), and control participants received TAU alone. Participants were assessed at baseline (T1), 9 weeks later (T2), and 6 months after T2 (T3). Primary outcomes were changes in EPDS score and current major depressive disorder (MDD) as measured by the Mini International Neuropsychiatric Interview. Secondary outcomes included worry, social support, the mother-infant relationship, and infant temperament.

Results: At T2, experimental group participants showed clinically and statistically significant reductions on the EPDS (d=0.65) and decreases in postpartum worry (d=0.38) and rejection and pathological anger toward their infant (d=0.44). They were also less likely to meet diagnostic criteria for current MDD compared to control participants (OR=5.09; 95% CI, 1.18–21.98; number needed to treat [NNT: 3.7]). These improvements remained stable 6 months later (T3).

Conclusions: PHNs can be trained to deliver effective online group CBT for PPD to reduce depression and worry and improve aspects of the mother-infant relationship, and they represent an important way to increase access to effective treatment for PPD.

Trial Registration: ClinicalTrials.gov identifier: NCT04928742

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Author affiliations are listed at the end of this article.

Postpartum depression (PPD) affects up to 1 in 5 mothers and birthing parents,[1] but as few as 1 in 10 of these individuals can access evidence-based care,[2] a situation that worsened during the COVID-19 pandemic.[3] Structured psychotherapies including cognitive behavioral therapy (CBT) and interpersonal psychotherapy (IPT) are first-line treatments for PPD[4,5] and are generally preferred over antidepressant medication.[6,7] Structured psychotherapies are often delivered in group format, which can provide social provision of support, symptom normalization, and the opportunity to learn via modeling.[8–10] Groups are also more cost-effective[8] and can reduce wait times, freeing up specialized services to help more ill individuals.

While online psychotherapy delivery was used sparingly before the COVID-19 pandemic,[11–13] its use has become more common.[14,15] It is proposed to have some advantages over face-to-face treatment including a reduced need for travel and an ability to reach those living in more remote areas.[16,17] However, some have raised concerns about online delivery, including that the therapeutic relationship may be negatively affected[18] and that participants may experience burnout and/or screen fatigue.[19]

During the pandemic, most studies of online CBT interventions focused on self-guided treatments. Though these may have promise for treating depressive and anxiety symptoms in general population[20–23] and postpartum samples,[16,24] facilitated treatments (ie, those that involve

Editor's Note

Editor's Note: We encourage authors to submit papers for consideration as a part of our Focus on Women's Mental Health section. Please contact Marlene P. Freeman, MD, at mfreeman@psychiatrist.com.

Clinical Points

- Rates of postpartum depression (PPD) increased during the COVID-19 pandemic, highlighting a need for effective, accessible interventions for PPD.
- Synchronous, online group cognitive behavioral therapy for PPD can be effectively delivered by public health nurses to increase treatment access.

another person) are generally preferred by those with PPD[4] and may be more effective.[25] Given the potential for online psychotherapy delivery to increase access, it is important to understand the effectiveness of group CBT (gCBT) delivered online for those with PPD.

Public health nurses (PHNs) have played a key role in PPD screening and in supporting mothers and infants in obstetrical, pediatric, and community settings, though very few had extensive training in the provision of evidence-based treatments for PPD. While a recent review suggested that psychotherapeutic interventions for PPD delivered by nonspecialists could reduce symptoms of PPD,[26] many were conducted face-to-face and delivered to individuals. However, our group recently showed that PHNs with no prior psychiatric training could deliver effective gCBT for PPD in person to decrease PPD and worry and improve the mother-infant relationship, findings that were stable up to 6 months.[27]

Since the onset of COVID-19, there have been substantial changes in the way that those with PPD wish to access treatment. However, no data speak to whether effective gCBT for PPD can be delivered online. Given the ability of online group interventions for PPD delivered by nonspecialists to increase access to care, it is important to determine if online PHN-delivered gCBT for PPD added to treatment as usual (TAU) can improve PPD, worry, the mother-infant relationship, social support, and infant temperament more than TAU alone.

METHODS

Trial Design and Procedures

Mothers and birthing parents living in the Niagara Region of Ontario, Canada, were recruited into this parallel-group randomized controlled trial (RCT) between October 5, 2020, and November 12, 2021. Participants were allocated in a 1:1 ratio to the experimental or control group. The experimental group received a synchronous 9-week PHN-delivered gCBT for PPD intervention delivered online (via Zoom) in addition to TAU. Control group participants received TAU alone. In Ontario, health care is universally available, so TAU could include any treatments including care from a physician, medications, and/or psychotherapy from a clinician at a provincially funded program or from a private therapist.

Randomization using blocks of 4, 6, and 8 was implemented by the study coordinator using REDCap (Research Electronic Data Capture).[28] Target enrollment per intervention group was 8 participants, consistent with the ideal therapeutic group size of 6–12.[29] Participants, PHNs, and the study coordinator could not be blinded to treatment condition, but research assistants completing data collection and data analysts were unaware of participant status. Questionnaires were completed online using REDCap at enrollment (T1), 9 weeks later (T2), and 6 months after T2 (T3). This study was approved by the Hamilton Integrated Research Ethics Board (HiREB, project #1339) and was registered (NCT04928742). All procedures contributing to this work comply with the ethical standards of the relevant national and institutional committees on human experimentation and with the Helsinki Declaration of 1975, as revised in 2008.

Participants

Participants self-referred to the study after seeing advertisements on social media (eg, Facebook) or were referred by a health care provider (eg, midwife, PHN, physician). Those who were ≥ 18 years old, had an infant < 12 months of age, had an Edinburgh Postnatal Depression Scale (EPDS) score ≥ 10, and were living in the Niagara Region were eligible to participate. An EPDS score ≥ 10 is typically used in primary care settings to detect PPD[30] and maximize eligibility and public health relevance of findings since up to 30% of postpartum individuals have these symptom levels.[31] Participants were then screened using the Mini International Neuropsychiatric Interview (MINI),[32] and those who met criteria for bipolar, psychotic, substance use, and/or borderline personality disorders were excluded. Participants who scored > 0 on question 10 of the EPDS were screened for suicidal ideation. Such results were reviewed with a perinatal psychiatrist, and participants deemed to be at increased risk had a letter sent to their primary health care provider and/or were referred to outpatient psychiatric care or emergency services as needed. Participants signed a consent form detailing the methods and their involvement in the study prior to being enrolled and randomized.

Intervention

The 9-week gCBT program was based on a previously validated treatment, guided by the manual developed in the context of this work, and used successfully in our previous PHN-delivered in-person gCBT trial.[27,33] Prior to the present trial, 6 PHNs received 2 days of in-classroom training, observed the 9-week intervention delivered by experts, and then delivered 1 group under expert supervision. The intervention consisted of 9 weekly 2-hour sessions delivered via Zoom by 2 PHNs. In this trial, no formal psychotherapy supervision was provided, though the 6 nurses met monthly in a community of practice session to discuss and troubleshoot any issues

that arose. The first half of each CBT session consisted of core CBT content (eg, cognitive restructuring), while the second included psychoeducation and a discussion topic (eg, sleep, utilizing supports). Each participant received a copy of the gCBT manual. Upon reaching the target sample size, the final group did not have high enough enrollment to run successfully, so we randomized until enough participants were present.

Outcome Measures

Participants' self-reported sociodemographic characteristics were collected at baseline, including age, infant age, country of birth, number of children, marital status, years of education, household income, and use of antidepressant medications or health care services in the previous 9 weeks. Participants provided data on primary and secondary clinical outcomes at all timepoints.

Our primary outcome was assessed using the EPDS, a 10-item ($\alpha = .78$) measure of maternal depression that assesses symptoms over the previous 7 days.[34] Items are scored on a 4-point scale (0–3), with scores ≥ 10 indicating possible PPD. Based on the reliable change index[35] and consistent with the other work,[36,37] we defined an EPDS change of ≥ 4 points as indicative of clinically significant change in PPD. The MINI was administered by telephone to assess changes in current major depressive disorder (MDD).

The Penn State Worry Questionnaire (PSWQ)[38] is a 16-item scale ($\alpha = .86$) that measures worry. Each item is scored on a 5-point scale (higher scores indicate greater severity). It has good reliability and validity.

The Social Provisions Scale (SPS),[39] a 24-item ($\alpha = .91$) self-report questionnaire, assessed the degree to which current social relationships provide support. Items are scored on a 4-point scale (1–4). Total scale score was used.

The Postpartum Bonding Questionnaire (PBQ)[40] is a 25-item measure assessing the mother-infant relationship on 4 subscales: impaired bonding (IB) ($\alpha = .86$), rejection and pathological anger toward the infant (RPA) ($\alpha = .82$), infant focused anxiety (IFA) ($\alpha = .81$), and incipient abuse. The incipient abuse scale was not used owing to past performance.[41]

Infant temperament was assessed using the Infant Behavior Questionnaire-Revised Very Short Form (IBQ-R),[42] a 37-item parent-report measure. Items are scored on a 7-point scale and address 3 factors: positive affectivity/surgency, negative emotionality, and orienting/regulatory capacity.

The Dyadic Adjustment Scale[43] is a 32-item scale assessing relationship quality of married and/or cohabiting couples. Total scale score was used (0–151, with higher scores indicating more positive adjustment).

Statistical Analyses

T tests (continuous variables) and χ^2 tests (dichotomous) compared characteristics and the attrition of experimental and control group participants. An a priori sample size calculation estimated that a minimum sample size of at least 73 per group was required to detect a treatment effect of $d = 0.55$ (approximating an effect size of medium magnitude), with power specified at 0.8, $\alpha = .05$, equal group size, and employing a first-order autoregressive (AR1) covariance structure. We estimated attrition rates of 20% between T1–T2 and 20% between T2–T3.[44] All sample size/power calculations were conducted using RMASS.[45]

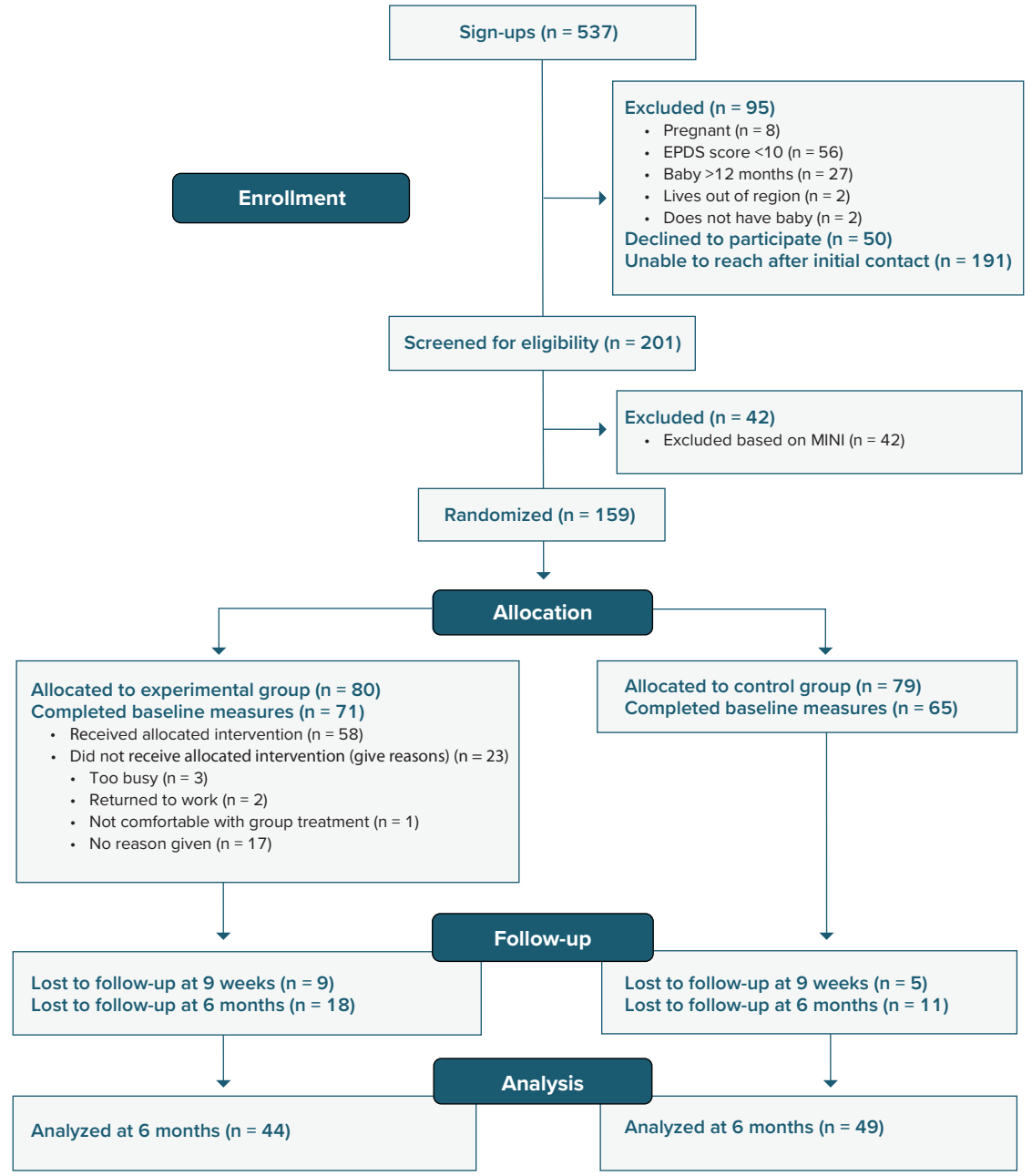
We utilized an intent-to-treat (ITT) approach in which all available participant data were analyzed regardless of protocol deviation, withdrawal/attrition, or noncompliance. This produces a more conservative estimate of treatment effect that is more representative of effectiveness in real-world practice.[46]

Continuous outcomes were analyzed using linear mixed models with restricted maximum likelihood estimation. This model employed a 2-level hierarchy whereby study outcomes at each timepoint were nested within participant (split by group), allowing us to assess intervention effect over time between groups. A random-effects intercept was included in the model controlling for unobserved heterogeneity at the individual participant level. Significant group-by-time interactions led to stratification by group to identify the magnitude of change in outcome score following intervention completion by the experimental group. Cohen's *d* defined effect size change in scale score from T1 to T2.

Dichotomous outcomes were analyzed using generalized estimating equations (GEEs) with a binomial logit-link binomial distribution and an AR1 covariance structure. These models estimated odds ratios between group at each timepoint analogously to logistic regression but directly model change in odds of diagnosis in a repeated-measures design, rather than cross-sectionally. GEEs also utilize all available participant data, consistent with ITT analyses. For ease of interpretation, raw prevalence of current MDD diagnosis and 4-point EPDS change between groups and over time are reported alongside these models. All analyses were conducted in SPSS Statistics 28 (IBM Corporation).

Immediately prior to the onset of the COVID-19 pandemic, we were conducting a trial of in-person PHN-delivered gCBT for PPD.[27] When the pandemic resulted in a stay-at-home order in the province of Ontario (Canada) on March 18, 2020, we shifted the intervention online (no in-person data were included in this study's analyses). At the time, we believed that we would be able to resume the in-person trial after moving online for a brief time. After realizing the shutdown would last longer, we sought ethics approval for an online trial. Unfortunately, there were delays in this process, which led to late registration at ClinicalTrials.gov. As a result, 60% (96/159) of participants were enrolled by its registration (June 16, 2021; ClinicalTrials.gov ID: NCT04928742).

Figure 1.
Flow of Participants Through the Trial



Abbreviations: EPDS = Edinburgh Postnatal Depression Scale, MINI = Mini International Neuropsychiatric Interview.

However, these individuals did not differ from those enrolled after that point, no changes to trial outcomes were made after the trial commenced, and no statistical analyses were completed until after the trial completion.

RESULTS

Of the 159 participants randomized (experimental n = 80, control n = 79), 136 (experimental n = 71, control n = 65) completed baseline (T1) measures (Figure 1). There were no statistically significant differences between groups in attrition rate from group assignment to T1 ($\chi^2 = 1.35$, $P = .25$). An average of 9 participants were enrolled per CBT group. The mean number of sessions attended by participants was 5 out of 9 (SD = 4). The characteristics of participants at baseline are summarized in Table 1.

Fourteen participants (experimental n = 9, control n = 5; $\chi^2 = 0.91$, $P = .33$) left the study between T1 and

Table 1.

Summary of Participant Characteristics

Characteristic	Experimental group (n = 71)	Control group (n = 65)
Maternal age, mean (SD), y	31.6 (4.8)	31.3 (4.9)
Household income, CAD$, mean (SD)	91,691 (42,244)	93,750 (44,472)
Marital status, n (%)		
Single	6 (9)	6 (8)
Married/common-law	57 (91)	57 (92)
Infant age, mean (SD), mo	6.1 (3.4)	6.3 (3.2)
Non-White, n (%)	13 (18)	15 (23)
Total no. of children, mean (SD)	1.6 (0.9)	1.5 (1.0)
One child, n (%)	38 (56)	42 (67)
More than 1 child, n (%)	30 (44)	21 (33)
Education, mean (SD), y	14.9 (1.7)	14.8 (1.8)
EPDS score, mean (SD)	14.60 (0.56)	14.92 (0.58)
PSWQ score, mean (SD)	63.82 (1.35)	62.51 (1.42)

Abbreviations: CAD = Canadian dollars, EPDS = Edinburgh Postnatal Depression Scale, PSWQ = Penn State Worry Questionnaire.

Table 2.

Group-by-Time Interaction for Primary and Secondary Outcomes From T1 to T2

Outcome measure	B	SE	*P* value
EPDS	−1.74	0.83	.04*
PSWQ	−3.89	1.54	.01*
SPS total	1.40	1.30	.28
PBQ-IB	−0.69	1.01	.49
PBQ-RPA	−1.43	0.59	.02*
PBQ-IFA	−0.26	0.42	.54
IBQR-Sur	0.05	0.19	.78
IBQR-Neg	0.03	0.20	.90
IBQR-Reg	0.15	0.13	.24
DAS total	0.38	2.26	.87

*Statistically significant difference between experimental and control groups ($P < .05$).

Abbreviations: DAS = Dyadic Adjustment Scale, EPDS = Edinburgh Postnatal Depression Scale, IB = Impaired Bonding, IBQR = Infant Behavior Questionnaire-Revised Very Short Form, IFA = Infant-Focused Anxiety, Neg = Negative Emotionality, PBQ = Postpartum Bonding Questionnaire, PSWQ = Penn State Worry Questionnaire, Reg = Orienting/Regulatory Capacity, RPA = Rejection and Pathological Anger, SE = standard error, SPS = Social Provisions Scale (total score), Sur = Positive Affectivity/Surgency.

T2. Participants lost to attrition had lower household income (CAD $62,708 vs $95,441; $t = 2.55$, $P = .01$) and fewer years of education (13.1 vs 15.0; $t = 3.52$, $P = .03$). Between T2 and T3, 29 participants (experimental n = 18, control n = 11; $\chi^2 = 1.44$, $P = .23$) were lost to follow-up. These participants reported lower household income (CAD $75,648 vs $96,802; $t = 2.30$, $P = .03$) and less education (13.6 vs 15.1 years; $t = 3.99$, $P < .01$).

A statistically significant group-by-time interaction between T1 and T2 predicted change in EPDS (B = −1.74 [SE = 0.83]; $P = .04$), PSWQ (B = −3.89 [1.54]; $P = .01$), and PBQ-RPA (B = −1.43 [0.59]; $P = .02$) scores (Table 2). Experimental group participants reported a change in EPDS score from 14.60 (T1) to 10.80 (T2; $P < .01$, $d = 0.65$), a decrease in PSWQ from 63.82 to 58.53 ($P < .01$, $d = 0.38$), and a decrease in PBQ-RPA from 5.99 to 3.59 ($P < .01$, $d = 0.44$) (Table 3).

At T2, 36 (58%) of the participants in the experimental group reported a ≥ 4-point decrease in EPDS, compared to 18 (30%) of the control group (OR = 3.23; 95% CI, 1.53–6.83; number needed to treat [NNT]: 3.6). Additionally, there was a statistically significantly greater decrease in experimental group participants who met criteria for current MDD (MINI) (from 58% to 16%) compared to controls at T2 (57% to 43%) (OR = 5.09; 95% CI, 1.18–21.98; NNT: 3.7).

Between T1 and T2, there was no statistically significant difference in the proportion of experimental and control group participants accessing additional psychotherapy services (39% vs 34%) or using antidepressants (37% vs 27%). This was also true between T2 and T3 for psychotherapy (24% vs 25%) and antidepressant use (25% vs 20%).

Observed changes in EPDS, PSWQ, and PBQ-RPA scores at T2 persisted up to 6 months posttreatment, suggesting that the improvements were stable (Table 4). After stratifying by experimental group, IBQ-Surgency (B = −0.59 [0.15], $P < .01$) scores improved more in the experimental group from T2 to T3, but these were not different between groups at T3.

DISCUSSION

Online PHN-delivered gCBT for PPD led to statistically and clinically significant improvements in PPD, as well as reductions in worry and rejection and pathological anger toward infants, findings that were stable up to 6 months posttreatment. Given that this intervention respects the contemporary treatment preferences of those with PPD and is scalable, it has promise for efficiently increasing access to treatment for those with PPD.

The medium effect size improvements in EPDS scores in the experimental group were similar to those reported in a large systematic review of CBT treatment effectiveness across providers[47] and those delivered by nonspecialists.[26] Individuals receiving treatment in this study were 3 times more likely to have had a clinically significant improvement in EPDS scores. These findings are consistent with previous structured nurse-delivered psychotherapies for PPD[48] and our previous in-person, PHN-delivered gCBT for PPD study.[27] Moreover, at T2, experimental group participants were 5 times more likely to no longer meet diagnostic criteria for current MDD, similar to our study conducted prior to COVID-19[27] and comparable to individual IPT delivered by PHNs face-to-face.[49]

The experimental group manifested a statistically significant decrease in worry, consistent with our previous in-person RCT. This may not be surprising given how effective CBT is at treating symptoms of worry and anxiety in general population samples.[50] Given high rates of

Table 3.

Outcome Scale Scores Across Study Timepoints

	Experimental group (N = 71)						Control group (N = 65)					
	Time 1		Time 2		Time 3		Time 1		Time 2		Time 3	
	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE
EPDS	14.60	0.56	10.80	0.58	10.40	0.62	14.92	0.58	12.86	0.60	11.13	0.62
PSWQ	63.82	1.35	58.53	1.39	58.75	1.44	62.51	1.42	61.07	1.45	60.72	1.48
SPS total	80.32	1.24	82.50	1.28	81.41	1.31	77.86	1.29	78.66	1.33	77.25	1.36
PBQ-IB	10.55	0.76	7.60	0.79	7.45	0.82	11.51	0.79	9.28	0.81	8.19	0.84
PBQ-RPA	5.99	0.52	3.59	0.53	3.37	0.53	6.05	0.52	5.08	0.53	4.68	0.55
PBQ-IFA	4.39	0.30	3.47	0.31	2.96	0.33	4.75	0.32	4.13	0.32	3.30	0.33
IBQR-Sur	4.03	0.12	4.85	0.13	5.41	0.13	4.18	0.13	4.95	0.13	5.33	0.14
IBQR-Neg	3.44	0.13	3.79	0.13	4.08	0.14	3.79	0.13	4.12	0.14	4.25	0.14
IBQR-Reg	4.96	0.09	5.27	0.10	5.40	0.10	4.89	0.10	5.06	0.10	5.33	0.10
DAS total	112.44	2.23	112.05	2.28	113.03	2.33	108.58	2.35	108.58	2.35	106.48	2.44

Abbreviations: DAS = Dyadic Adjustment Scale, EPDS = Edinburgh Postnatal Depression Scale, IB = Impaired Bonding, IBQR_VSF = Infant Behavior Questionnaire-Revised Very Short Form, IFA = Infant-Focused Anxiety, Neg = Negative Emotionality, PBQ = Postpartum Bonding Questionnaire, PSWQ = Penn State Worry Questionnaire, Reg = Orienting/Regulatory Capacity, RPA = Rejection and Pathological Anger, SE = standard error, SPS = Social Provisions Scale (total score), Sur = Positive Affectivity/Surgency.

Table 4.

Treatment Stability: Change in Scale Score From T2 to T3 (Experimental Group Only)

Outcome Measure	B	SE	*P* value
EPDS	0.37	0.62	.55
PSWQ	−0.22	1.26	.86
SPS total	1.28	0.86	.15
PBQ-IB	0.01	0.53	.98
PBQ-RPA	0.13	0.34	.70
PBQ-IFA	0.52	0.26	.05
IBQR-Sur	−0.59	0.15	< .001*
IBQR-Neg	−0.33	0.15	.03*
IBQR-Reg	−0.15	0.09	.12
DAS total	−0.24	1.47	.87

*Statistically significant difference between experimental and control groups ($P < .05$).

Abbreviations: DAS = Dyadic Adjustment Scale, EPDS = Edinburgh Postnatal Depression Scale, IB = Impaired Bonding, IBQR-VSF = Infant Behavior Questionnaire-Revised Very Short Form, IFA = Infant-Focused Anxiety, Neg = Negative Emotionality, PBQ = Postpartum Bonding Questionnaire, PSWQ = Penn State Worry Questionnaire, Reg = Orienting/Regulatory Capacity, RPA = Rejection and Pathological Anger, SE = standard error, SPS = Social Provisions Scale (total score), Sur = Positive Affectivity/Surgency.

anxiety in those with PPD, these findings suggest that PHN-delivered gCBT may be an effective intervention for those with comorbid depression and worry.

We observed a decrease in maternal RPA consistent with previous work.[27] It is possible that participants are applying CBT strategies to anger in addition to depression and anxiety. However, PHNs do have experience working with mother-infant dyads, and this may have contributed as well.

The results of this study suggest that improvements in PPD and worry after 9 weeks of gCBT for PPD are stable for up to 6 months postintervention. This level of stability is encouraging, particularly given the short-term nature of this intervention. These findings are consistent with previous work[51] reporting that nurse-delivered modified CBT for PPD led to a high rate of recovery immediately postintervention and up to 6 months afterward. Research by Pessagno and Hunker[52] also found that an 8-week nurse-delivered group psychotherapy intervention led to significant decreases in EPDS scores up to 6 months later.

These findings support the effectiveness of online psychotherapeutic interventions in general population samples.[11,53] To the best of our knowledge, this study is the only RCT to date that has examined online delivery of a synchronous psychotherapy for PPD during the COVID-19 pandemic. These data are important because online delivery can increase accessibility while maintaining effectiveness, findings that will be particularly important since mothers and birthing parents may continue to prefer it.

Despite these findings, the limitations of this study should be acknowledged. All study participants lived in the same region and had universal access to health care. Most were White, were married, and had attended or graduated high school, and so our findings may not be generalizable to all mothers and birthing parents. While relevant to primary and public health practice, our EPDS cutoff of ≥ 10 identifies those with elevated levels of symptoms of PPD, but not necessarily current MDD. However, given the high prevalence of individuals with these levels of symptoms, these findings may remain clinically relevant. The confidence intervals for our dichotomous outcomes were wide, though they were consistent with the findings of continuous measures assessing the same construct. Regarding intervention delivery, PHNs received training and adhered to a structured intervention manual, but formal measures of delivery fidelity were not used owing to resource constraints during the pandemic. The trial was also registered after it had started, though

the characteristics of participants did not differ before versus after trial registration. Attrition was notable, though not significantly higher than in other studies of psychotherapies for PPD. Finally, the availability of PHNs and other nonspecialists may be a limiting factor to the delivery of both in-person and online interventions. Self-guided, online interventions could offer an alternative to some individuals in settings where providers are scarce,[54] though it should be acknowledged that individuals with PPD often cite a preference for interventions facilitated by health care providers.[6]

The results of this study suggest that PHNs can deliver effective gCBT for PPD online that can improve depression, worry, and RPA toward their infants. That it can be effectively delivered by PHNs both in-person and online supports its ability to increase access to treatment for those with PPD, as well as its potential for scalability. The COVID-19 pandemic has highlighted limitations in existing treatment options, as well as the need for accessible mental health care. Since these barriers and facilitating circumstances will not likely disappear with the pandemic, research on the effectiveness of online group interventions delivered by nonspecialists can play an important role in the delivery of accessible and effective treatments for PPD.

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Author Affiliations: Michael G. DeGroote School of Medicine, Niagara Regional Campus, McMaster University, St. Catharines, Ontario, Canada (Huh); Health Research Methodology Graduate Program, McMaster University, Hamilton, Ontario, Canada (Layton); Department of Psychiatry and Behavioural Neurosciences, McMaster University, Hamilton, Ontario, Canada (Savoy, Bieling, Van Lieshout); School of Public Health and Health Systems, University of Waterloo, Waterloo, Ontario, Canada (Ferro); Niagara Region Public Health, Thorold, Ontario, Canada (Hicks).

Corresponding Author: Kathryn Huh, BHSc, Michael G. DeGroote School of Medicine, Niagara Regional Campus, 1812 Sir Isaac Brock Way, St Catharines, L2S 3A1, Canada (huhk1@mcmaster.ca).

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ORCID: Kathryn Huh: https://orcid.org/0000-0001-8236-0664; Haley Layton: https://orcid.org/0000-0002-2197-8118; Calan D. Savoy: https://orcid.org/0000-0003-1419-7409; Mark A. Ferro: https://orcid.org/0000-0002-0979-3233; Peter J. Bieling: https://orcid.org/0000-0002-7458-4358; Ryan J. Van Lieshout: https://orcid.org/0000-0001-7244-0222

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