Comparative Effectiveness Review
Number 271

Nonpharmacologic Treatments for Maternal Mental Health Conditions

Executive Summary

Main Points

- **Nonpharmacologic treatments for depressive disorders in perinatal individuals**
  - Cognitive behavioral therapy (CBT) is probably more effective than treatment as usual (TAU) to reduce depressive symptoms (moderate strength of evidence [SoE]) and anxiety symptoms (moderate SoE), and may increase rates of remission for depressive symptoms (low SoE).
  - Interpersonal therapy (IPT) is probably more effective than TAU to reduce depressive symptoms (moderate SoE) and anxiety symptoms (low SoE), and may increase remission rates for depressive symptoms (low SoE).
  - Behavioral activation may be more effective than TAU to reduce depressive symptoms (low SoE).
  - Exercise interventions are probably more effective than TAU to reduce depressive symptoms (moderate SoE).
  - Specific acupuncture compared with nonspecific or sham acupuncture may increase remission rates for depressive symptoms (low SoE).
  - There was insufficient evidence to make conclusions regarding CBT compared to non-directive counseling, non-directive counseling compared to TAU, or bright light therapy compared to placebo light therapy.
- **Nonpharmacologic treatments for anxiety disorders**
  - There was insufficient evidence to make conclusions.
- **Nonpharmacologic treatment for combined depressive and anxiety disorders**
  - CBT may be more effective than TAU to reduce anxiety and depressive symptoms (low SoE).
  - We did not find studies assessing the potential harms of nonpharmacologic treatments for combined anxiety and depressive disorders
- **Nonpharmacologic treatment for perinatal individuals with depressive or anxiety disorders**
  - There was insufficient evidence to make conclusions due to imprecision.

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- **Nonpharmacologic treatment for post-traumatic stress disorder (PTSD)**
  - There was insufficient evidence to make conclusions.
- **Nonpharmacologic treatment for obsessive-compulsive disorder (OCD)**
  - There was insufficient evidence to make conclusions.
- **Nonpharmacologic treatment for bipolar disorder**
  - We did not identify any studies evaluating the comparative effectiveness of nonpharmacologic treatments for bipolar disorder.
- **Nonpharmacologic versus pharmacologic treatments for perinatal mental health conditions**
  - There was insufficient evidence to make conclusions.
- **There was insufficient evidence to draw conclusions regarding the potential harms of nonpharmacologic treatments for perinatal individuals with mental health conditions.**

Background and Purpose

During the perinatal period (defined as pregnancy through 12 months postpartum) individuals may experience various mental health conditions such as depression, anxiety, post-traumatic stress disorder, bipolar disorder, and obsessive-compulsive disorder. Mental health experiences can range in severity, for example from transient postpartum low mood to a depressive episode to more persistent depression. Lack of treatment or undertreatment of perinatal mental health conditions can have profound and persistent effects on both the mother and the developing fetus and child. Evidence-based clinical practice guidelines are needed to help clinical decision makers decide whether nonpharmacologic treatments, either alone or in conjunction with pharmacologic treatments, should be offered to perinatal individuals experiencing mental health conditions. The purpose of this review is to inform future guidance for the treatment of mental health conditions during the perinatal period. This review addresses two Key Questions (KQs) for perinatal individuals with depressive disorders, anxiety disorders, bipolar disorder, PTSD, or OCD: comparisons of (1) nonpharmacologic treatments and (2) pharmacologic versus nonpharmacologic treatments.

Methods

We used methods consistent with those outlined in the Agency for Healthcare Research and Quality (AHRQ) Evidence-based Practice Center Program Methods Guidance (https://effectivehealthcare.ahrq.gov/products/collections/cer-methods-guide). Our searches targeted randomized controlled trials (RCTs) from January 1, 2000, to January 17, 2024. For studies of individuals with depressive or anxiety disorders, data extraction and risk of bias assessment was limited to interventions and comparisons with three or more studies; for these conditions, comparisons with fewer studies are summarized in the appendix. We extracted study data into the Systematic Review Data Repository Plus (SRDR+; https://srdrplus.ahrq.gov). We assessed the risk of bias and

evaluated the strength of evidence using standard methods. Given the large body of evidence and numerous interventions and comparisons for nonpharmacologic treatments of depression and anxiety, and given time and resource constraints, we restricted full data synthesis mostly to comparisons with three or more studies. Other comparisons are summarized briefly. Outcomes of interest were scores on psychological assessment tools, cure or resolution of symptoms, suicide-related outcomes, and adherence to treatment. Where sufficient comparable studies were available, we conducted meta-analyses of relative risk (RR) for categorical outcomes and, because of the heterogeneity in tool measures, standardized mean differences for tool scores. Negative standardized mean differences (SMDs) suggest that the intervention reduced symptoms more than the comparator. In accordance with AHRQ guidance we have incorporated qualifying language regarding SoE when communicating conclusions. "Probably" is used for conclusion statements with moderate SoE and "may" for conclusion statements with low SoE. "Insufficient evidence" means that the eligible studies did not provide adequate evidence to form a conclusion, primarily due to sparseness of evidence. The PROSPERO protocol registration number is CRD42023440650.

Results

We identified 103 primary studies; 101 RCTs addressed KQ 1 (comparison of nonpharmacologic treatments) and 2 RCTs addressed KQ 2 (comparison of nonpharmacologic and pharmacologic treatments). Our overall findings, including SoE assessment, regarding the effectiveness of nonpharmacologic treatments for which we were able to make conclusions are in Table A.

For **KQ 1**: We identified 71 studies (N = 8,889) that evaluated comparisons of nonpharmacologic treatments reported by at least three RCTs; 18 of these studies were conducted in the U.S.

For *depressive disorders*, 28 RCTs compared CBT with TAU. CBT was probably more effective than TAU to reduce depressive symptoms (SMD −0.56, 95% confidence interval [CI] −0.69 to −0.42, moderate SoE) and anxiety symptoms (SMD −0.55, 95% CI −0.67 to −0.44, moderate SoE) as rated by validated scales. The mean difference in depressive symptoms was equivalent to −1.71 points (95% CI −2.10 to −1.28) on the Edinburgh Postnatal Depression Scale (EPDS). The mean difference in anxiety symptoms was equivalent to −5.64 points (95% CI −7.07 to −4.30) on the State Trait Anxiety Inventory (STAI). Remission rates were higher in the CBT group compared with TAU (RR 1.73, 95% CI 1.33 to 2.26, low SoE).

Nine RCTs compared IPT with TAU. IPT was probably more effective to treat depressive symptoms (SMD −0.56, 95% CI −0.89 to −0.22, moderate SoE) and anxiety symptoms (SMD −0.73, 95% CI −1.19 to −0.26, low SoE) as rated by validated scales. The mean difference in depressive symptoms was equivalent to −1.80 points (95% CI −2.71 to −0.67) on the EPDS and the mean difference in anxiety symptoms was equivalent to −7.84 points (95% CI −12.19 to −2.15) on the STAI. Remission rates for depressive symptoms were significantly higher in the IPT group compared to TAU (RR 1.22, 95% CI 1.04 to 1.43, low SoE).

Six RCTs compared exercise interventions with TAU. Exercise was probably more effective to reduce depressive symptoms (SMD −0.41, 95% CI −0.74 to −0.08, moderate SoE). The mean difference in depressive symptoms was equivalent to −1.25 points (95% CI −2.26 to −0.24) on the EPDS.

Table A. Summary of nonpharmacologic treatments for depressive or anxiety disorders

Intervention	Population	Outcome	Conclusion Effect Size (95% CI)	Effect Size, Back-Transformed (95% CI)	SoE
CBT vs. TAU	Depressive disorders	Reduced anxiety symptoms	CBT more effective SMD −0.55 (−0.67, −0.44)	STAI −5.64 (−7.07, −4.30)	Moderate
	Depressive disorders	Reduced depressive symptoms	CBT more effective SMD −0.56 (−0.69, −0.42)	EPDS −1.71 (−2.10 −1.28)	Moderate
	Depressive disorders	Remission of depressive symptoms	CBT more effective RR 1.73 (1.33, 2.26)	N/A	Low
	Combined depressive and anxiety disorders	Reduced anxiety symptoms	CBT more effective SMD −0.68 (−0.92, −0.43)	STAI −6.97 (−9.43, −4.41)	Low
	Combined depressive and anxiety disorders	Reduced depressive symptoms	CBT more effective SMD −0.72 (−1.21, −0.53)	EPDS −2.20 (−3.69, 1.62)	Low
	Depressive or anxiety disorders	Reduced anxiety symptoms	No conclusions SMD −0.03 (−0.04 to 0.34)	STAI −0.31 (−0.41, −3.48)	Insufficient evidence
	Depressive or anxiety disorders	Reduced depressive symptoms	No conclusions SMD 0.00 (−0.23 to 0.23)	EPDS 0.00 (−0.70, 0.70)	Insufficient evidence
IPT vs. TAU	Depressive disorders	Reduced anxiety symptoms	IPT more effective SMD -0.73 (−1.19, −0.26)	STAI −7.84 (−12.19, −2.15)	Low
	Depressive disorders	Reduced depressive symptoms	IPT more effective SMD −0.56 (−0.89, −0.22)	EPDS −1.80 (−2.71, −0.67)	Moderate
	Depressive disorders	Remission of depressive symptoms	IPT more effective RR 1.22 (1.04, 1.43)	N/A	Low
Exercise vs. TAU	Depressive disorders	Reduced depressive symptoms	Exercise more effective SMD −0.41 (−0.74, −0.08)	EPDS −1.25 (−2.26, −0.24)	Moderate
Behavioral activation vs. TAU	Depressive disorders	Reduced depressive symptoms	Behavioral activation more effective SMD −0.50 (−0.68, −0.33)	EPDS −1.53 (−2.07, −1.01)	Low
Specific vs. nonspecific acupuncture	Depressive disorders	Remission of depressive symptoms	Specific acupuncture more effective RR 1.48 (1.00, 2.19)	N/A	Low
Counseling vs. TAU	Depressive disorders	Reduced depressive symptoms	No conclusions SMD −0.25 (−0.53, 0.02)	EPDS −0.76 (−1.62, 0.06)	Insufficient evidence

Intervention	Population	Outcome	Conclusion Effect Size (95% CI)	Effect Size, Back-Transformed (95% CI)	SoE
CBT vs. counseling	Depressive disorders	Reduced depressive symptoms	No conclusions SMD −0.16 (CI −0.44, 0.11)	EPDS −0.49 (−1.34, 0.34)	Insufficient evidence
Bright light therapy vs. placebo light therapy	Depressive disorders	Reduced depressive symptoms	No conclusions SMD −0.58 (−1.38, 0.23)	EPDS −1.53 (−2.07, −1.01)	Insufficient evidence

Abbreviations: CBT = cognitive behavioral therapy, CI = confidence interval, IPT = interpersonal therapy, RR = relative risk, SMD = standardized mean difference, SoE = strength of evidence, TAU = treatment as usual, EPDS = Edinburgh postnatal depression scale, STAI = state trait anxiety inventory, N/A = not applicable

Three studies compared behavioral activation with TAU. Behavioral activation may be more effective to reduce depressive symptoms than TAU (SMD −0.50, 95% CI −0.68 to −0.33, low SoE), equivalent to a mean difference of −1.53 (95% CI −2.07 to −1.01) on the EPDS.

Three studies compared acupuncture with nonspecific or sham acupuncture. Remission rates for depressive symptoms were higher among individuals who received specific acupuncture compared with nonspecific acupuncture (RR 1.48, 95% CI 1.00 to 2.19, low SoE).

Effect sizes were estimated for counseling compared with TAU, CBT compared with counseling and bright light compared with placebo light therapies. Effect sizes were non-significant and imprecise, therefore there was insufficient evidence for determining equivalence between the previously listed comparisons.

Three RCTs compared CBT with TAU for participants with combined *depressive and anxiety disorders.* CBT may be more effective in treating anxiety symptoms (SMD −0.68, 95% CI −0.92 to −0.43, low SoE) equivalent to a mean difference of −6.97 points (95% CI −9.43 to −4.41) on the STAI. CBT may be more effective than TAU to reduce depressive symptoms (SMD −0.72, 95% CI −1.21 to −0.53), equivalent to a mean difference of −2.20 points (95% CI −3.69 to −1.62) on the EPDS.

Three RCTs compared CBT with TAU for participants with *depressive and/or anxiety disorders*. There was insufficient evidence for determining equivalence in anxiety symptoms between CBT and TAU (SMD −0.03, 95% CI −0.04 to 0.34). Similarly, there was insufficient evidence for determining equivalence in depressive symptoms at the end of treatment (SMD 0.00, 95% CI −0.23 to 0.23).

For *anxiety disorders,* we identified two RCTs, however due to heterogeneity in interventions we were unable to draw conclusions. For *PTSD*, we identified four RCTs, however due to heterogeneity in interventions and insufficient reporting of key outcome data we were unable to draw conclusions. For *OCD,* there was insufficient evidence available from one RCT. We did not identify any RCTs that evaluated nonpharmacologic treatments for individuals with *bipolar disorder*.

For **KQ 2**, there was insufficient evidence from two RCTs comparing nonpharmacologic with pharmacologic treatments for any perinatal mental health condition.

Limitations

Although we identified 71 RCTs that met criteria for full analysis (i.e., with at least 3 RCTs evaluating specific comparisons) for KQ 1, we were limited to drawing conclusions regarding the effectiveness of nonpharmacologic treatments during the perinatal period to those with depressive disorders. CBT was the most frequently tested nonpharmacologic treatment, with few studies available for less frequently tested interventions and perinatal populations. There was considerable variation in how studies named, defined and reported nonpharmacologic treatments, making it challenging to determine if interventions could be meaningfully combined or compared. Very little data were available for exploring potential modifiers of treatment effect. Studies were inconsistent in the reporting of full outcome data, which limited our ability to include studies with insufficient reporting in our analyses. Many prioritized outcomes were either not reported in any included study for specific comparisons or were reported in an insufficient number of studies to allow meta-analyses or merit conclusions.

Implications and Conclusions

There is evidence for the effectiveness of nonpharmacologic treatment compared with treatment as usual for certain perinatal mental health conditions. The strongest empirical evidence was identified for CBT and IPT treatments for depressive conditions. However, other nonpharmacologic treatments, such as behavioral activation, exercise and acupuncture, and treatments of other mental health conditions have been infrequently evaluated in RCTs of perinatal individuals. Thus, it is unclear whether other treatments are also effective or what the comparative effectiveness is of CBT or IPT with other treatments (including pharmacologic treatments). The strongest evidence was available for the individuals with depressive disorders, future research is needed to assess the effectiveness of nonpharmacologic interventions for perinatal anxiety disorders (including bipolar disorder, PTSD, and OCD). There is also little evidence regarding prioritized outcomes other than depressive symptoms, anxiety, symptoms, and in some instances remission of symptoms. To further guide clinical and policy decision-making, future methodologically rigorous research is needed to evaluate the comparative effectiveness of lesser studied nonpharmacologic interventions and lesser studied perinatal mental health disorders.

Full Report

Couch E, Mai HJ, Kanaan G, Caputo E, Zahradnik ML, Lewis O, Bohlen L, Howard M, Adam GP, Konnyu KJ, Balk EM. Nonpharmacologic Treatments for Maternal Mental Health Conditions. Comparative Effectiveness Review No. 271. (Prepared by the Brown Evidence-based Practice Center under Contract No. 75Q80120D00001.) AHRQ Publication No. 24-EHC019. Rockville, MD: Agency for Healthcare Research and Quality; July 2024. DOI: https://doi.org/10.23970/AHRQEPCCER271. Posted final reports are located on the Effective Health Care Program search page.