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Effectiveness of Cognitive Behavioral Therapy (CBT) in Managing Postpartum Depression: A Scoping Review of Comparative Interventions

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ABSTRACT

Background: Postpartum Depression (PPD) is a mood disorder experienced by mothers after childbirth that interferes with daily functioning. Cognitive Behavioral Therapy (CBT) has become the non-pharmacological intervention of choice in overcoming PPD. However, there is still a literature gap in systematic reviews regarding the effectiveness of CBT compared to other interventions in relieving PPD symptoms.
Method: This study used a scoping review methodology following the PRISMA-ScR guidelines. A literature search was conducted across PubMed, ScienceDirect, and Cochrane databases, resulting in 91,664 articles using the keywords postpartum depression, PPD, Cognitive Behavioral Therapy, CBT, Edinburgh Postnatal Depression Scale (EPDS).
Result: Four relevant articles were selected for analysis after the screening and critical appraisal process. The results of the analysis showed that various CBT methods, including digital applications, workshops, group therapy, and online courses, effectively reduced PPD symptoms with a success rate of 29-46%. Factors such as the duration of the intervention, the involvement of health workers, and therapist support contributed to the effectiveness of CBT and its impact on maternal well-being and mother-infant bonding.
Conclusion: CBT has been shown to be an effective intervention in reducing PPD symptoms through both face-to-face and technology-assisted formats. Integrating CBT into routine maternal health services is recommended to enhance postpartum mental health outcomes and strengthen early parenting experiences.

Keywords: ***CBT, cognitive behavioral therapy, EPDS, Postpartum Depression, PPD***

INTRODUCTION

Postpartum depression (PPD) is a disturbing mood condition characterized by feelings of sadness, loss of interest, and significant emotional changes experienced by mothers after childbirth[1]. Individuals with PPD often experience symptoms such as prolonged feelings of sadness, excessive anxiety, sleep disorders such as insomnia or hypersomnia, fatigue, feelings

of worthlessness or guilt, difficulty concentrating, and the desire to harm oneself to the point of thoughts of killing the baby[2]. PPD is not just a common mood change but a clinical condition that requires special attention. Unlike the "baby blues", which are mild and temporary, PPD lasts longer and can interfere with the mother's daily activities. Postpartum depression generally occurs four weeks after delivery and can continue for up to 6 months if not treated properly[3].

Women who have just given birth tend to experience stress to depression due to physical and biological changes and new responsibilities as mothers, especially in the early period after giving birth. Many factors trigger postpartum depression, one of which is due to adaptation to hormonal changes after giving birth[3]. These hormonal changes can trigger emotional imbalance in the mother. The mother's age at the time of giving birth is also a risk factor for postpartum depression, where mothers who are too young, in most cases, feel emotionally unprepared. At the same time, mothers who are too old can experience physical fatigue, which can trigger feelings of depression and excessive stress. A history of difficult childbirth and a history of previous depression can increase the risk of this disorder reoccurring. In addition, an unwanted pregnancy is prone to causing feelings of anxiety, which further worsens the mother's mental condition. Then, the lack of support from partners and family can also make it increasingly difficult for mothers to deal with their new roles, so mothers are susceptible to postpartum depression[4].

Based on the study "Mapping Global Prevalence of Depression among Postpartum Women" published by Wang et al., it was found that globally from a total of 80 countries, the prevalence of postpartum reached 17,22% (95% CI 16.00–18.51) in the world's postpartum maternal population. This figure varies in various regions with the highest prevalence recorded in South Africa at 39,96%. Meanwhile, developed or high-income countries tend to have lower PPD rates. In Indonesia itself, the reported prevalence of PPD reached 11,76%[5]. The report shows that one in ten mothers in Indonesia experience PPD. Although this figure is lower than several other countries, this condition remains an issue that needs attention in order to minimize the impacts caused. Moreover, considering the ongoing stigma against mental health and limited access to psychological services in Indonesia, broader and more effective interventions are urgently needed to prevent the long-term impacts of PPD.

The high number of postpartum depression cases need serious attention because it not only affects the mother's mental condition but can also affect the relationship between the mother and her baby. Mothers who experience postpartum depression tend to lose interest and attraction to their babies[6]. As a result, the affection and care given are less than optimal. Mothers tend to reduce interaction and respond less well to the baby's gaze, growth development, and cries[7]. Sometimes, postpartum depression even makes mothers reluctant to breastfeed their babies. In the long term, this condition can affect the child's cognitive, emotional, social, and behavioral development. This can happen because babies who get less attention and stimulation from their mothers are at risk of experiencing developmental delays and emotional bonding disorders[3]. Therefore, early treatment is very important to prevent wider negative impacts on mother-infant bonding, impair cognitive and emotional development in children[8,9].

To overcome postpartum depression, intervention is needed by providing therapy both pharmacologically and non-pharmacologically. However,

research conducted by the National Institute for Health and Care Excellence (NICE) in Ireland shows that non-pharmacological therapy has been shown to be more effective in reducing mild to moderate depression in postpartum mothers[8]. Non-pharmacological therapy is safer for postpartum mothers than pharmacological therapy, which requires mothers to take drugs such as antidepressants[6]. In some cases, antidepressant use during lactation has been linked to infant irritability, disrupted sleep, and irregular feeding patterns. Additionally, neonatal withdrawal symptoms have been reported following the use of tricyclic antidepressants. These risks are influenced by various pharmacokinetic factors, including molecular size, lipid solubility, protein binding, and milk pH, which affect the extent of drug transfer into breast milk. Thus, non-pharmacological therapies are preferred due to the potential side effects of medications on breastfed infants[11].

One solution to using non-pharmacological therapy in treating postpartum depression is Cognitive Behavioral Therapy (CBT). CBT commonly referred to as cognitive therapy, is a cognitive-based counseling method in which mothers will be directed to focus on managing and monitoring their thoughts to reduce negative thoughts and form more positive emotional responses[8]. CBT is considered suitable for treating postpartum depression (PPD) because it can help mothers recognize and change negative thought patterns and maladaptive behaviors that often appear after giving birth. To achieve maximum results, active and open cooperation is needed between the mother and the therapist. This approach can help mothers become mentally healthier, gain more satisfying life experiences, and be more confident in carrying out their new role as mothers. Counseling using Cognitive Behavioral Therapy is carried out with relaxation technique exercises as well as counseling and education to help clients develop healthier and more positive thought patterns[6].

Although Cognitive Behavioral Therapy (CBT) is widely used and extensively studied as a non-pharmacological approach to treating postpartum depression (PPD), there remains a significant gap in the literature, particularly in the form of systematic or scoping reviews that rigorously evaluate its effectiveness compared to other interventions or no intervention at all. While CBT is known to reduce depressive symptoms, few studies directly compare its effectiveness with other therapeutic options such as pharmacotherapy, interpersonal therapy, or peer support interventions. Many studies focus on the benefits of this therapy in general. However, existing research has not sufficiently described in detail how CBT is applied in various postpartum maternal conditions, how effective it is compared to other approaches, and what factors influence its success. Therefore, this scoping review aims to collect and map the latest evidence on the effectiveness of CBT in alleviating postpartum depression symptoms in mothers between CBT interventions, other interventions, and no intervention at all. This review will also identify the various CBT approaches used and the factors that influence their success in various conditions. Thus, the results of this review are expected to provide clearer insights for health workers and researchers in developing more effective intervention strategies, as well as provide recommendations for future research and clinical practice.

METHODS

This scoping review was developed with reference to the PRISMA-ScR guidelines established by Tricco et al[9].

Identification of research questions

PICO (Patient/Population, Intervention, Comparison, Outcome) is a conceptual model used to formulate clinical questions and develop literature search strategies. PICO can be used for intervention-based research.

Table 1. PICO Framework

PICO	
Population	Postpartum mothers, postpartum mothers with symptoms of postpartum depression
Intervention	Cognitive Behavioral Therapy (CBT)
Comparison	No intervention, placebo intervention, other interventions (e.g., pharmacological therapy, social support)
Outcome	Reduction of postpartum depression symptoms with the Edinburgh Postnatal Depression Scale/EPDS

Based on the PICO framework that has been prepared above, the research question is "How effective is Cognitive Behavioral Therapy (CBT) in reducing the level of postpartum depression as measured by the Edinburgh Postnatal Depression Scale (EPDS) compared to other interventions in postpartum mothers?"

Article identification

This study used a scoping review design. According to Tricco et. al, this method is effective for reviewing and interpreting results, mapping concepts, and becoming sources and types of evidence. Prisma-ScR is used in this scoping review because the checklist makes it easier to compile a scoping review, which consists of:

1) Protocol and registration

   Prisma-ScR has 22 assessment items contained in the checklist, which is used as a guide in this scoping review.

2) Eligibility Criteria

   The exclusions and inclusions used in this scoping review are as follows.

Table 2. Inclusion and Exclusion Criteria

Inclusion	Exclusion
1. Research articles 2. The subjects were postpartum mothers 3. In English 4. Published in the period 2021-2025	1. Review article 2. Subjects other than postpartum mothers (including pregnant women and adolescents) 3. The article cannot be accessed in full 4. Published in less than 2021

3) Information sources

   Three databases were used in this scoping review, namely Pubmed, ScienceDirect, and Cochrane.

4) Search

   Keywords were entered into the database through boolean operations. The keywords used in this scoping review were as follows: "postpartum depression", "postnatal depression", "postpartum women" OR "postpartum mothers", "Cognitive Behavioral Therapy", "behavioral therapy", "CBT", "Edinburgh Postnatal Depression Scale", "EPDS".

5) Selection of sources of evidence

   In four databases, namely, Science Direct, PubMed, and Google Scholar, 91,664 articles were found. After that, 87.255 articles were excluded based on duplicates and were not eligible from the automation tool, then 4.389 articles were excluded due to inconsistencies in the title and abstract, seven were excluded

because they could not be accessed, nine were excluded due to differences in PICO and Study Design based on inclusion and exclusion, one was excluded because it did not meet the criteria at the critical appraisal assessment stage. The critical appraisal was conducted using the Joanna Briggs Institute (JBI) Checklist, which evaluates the methodological quality and relevance of the included studies. As a result, four articles met all inclusion criteria and were included in the final scoping review. The detailed selection process is illustrated in the PRISMA-ScR Flowchart.

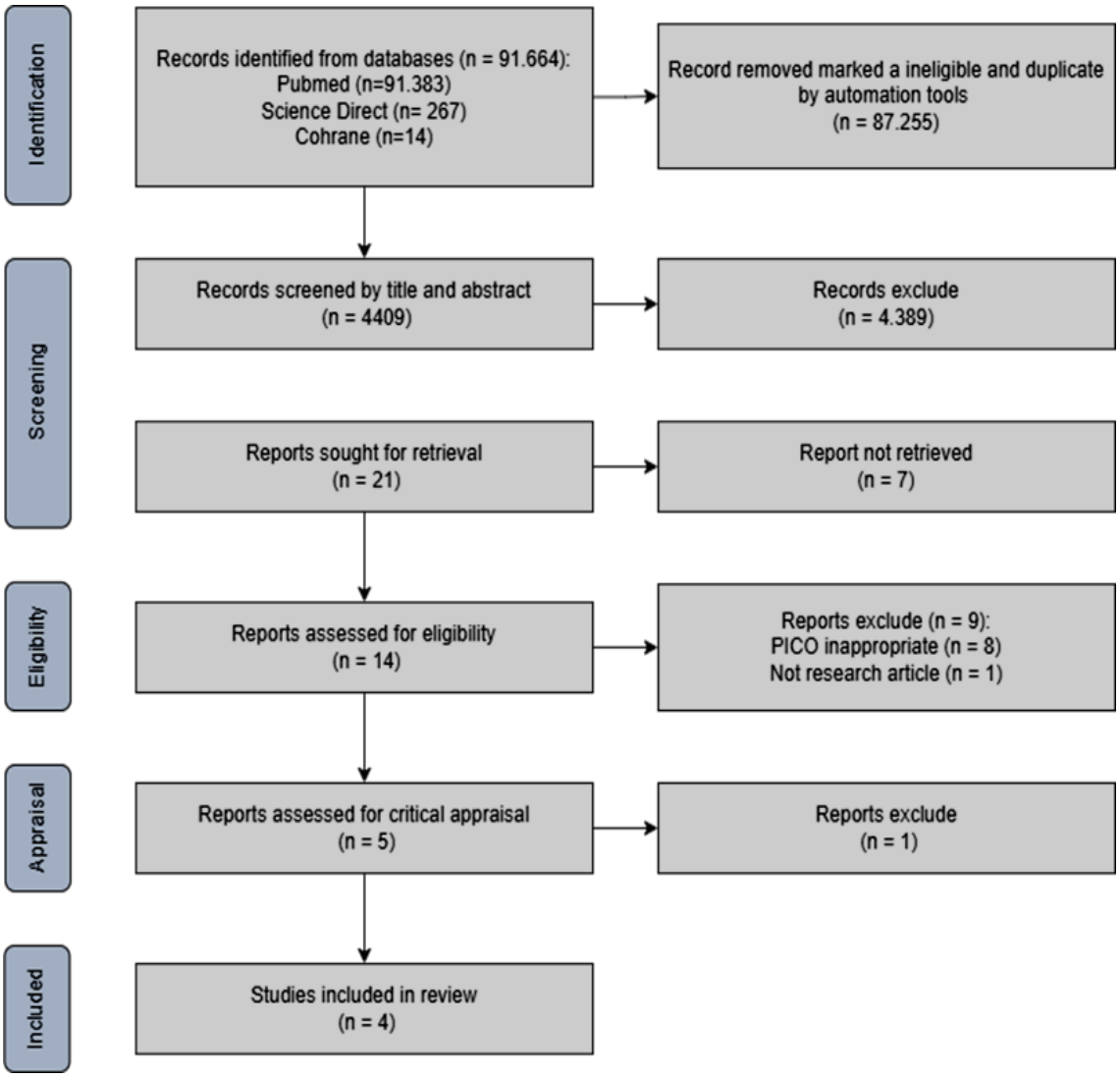

Figure 1. PRISMA Flowchart

5) Data charting process

Table 3. Data Charting

No	Title	Author	Research design	Sample Size	Results
1.	Preventing Postpartum Depression in the Early Postpartum Period Using an App-Based Cognitive Behavioral Therapy Program: A Pilot Randomized Controlled Study	Qin et al.	Pilot Randomized Controlled Study	112	The intervention group using the CareMom application based on the Cognitive Behavioral Therapy (CBT) program experienced a significant decrease in EPDS scores compared to the control group after 4 weeks (p = 0.037).
2.	In-person 1-day cognitive behavioral therapy-based workshops for postpartum depression: a randomized controlled trial	Lieshout et al.	Randomized Controlled Trial	461	This 1-day CBT workshop was effective in reducing EPDS scores (p<0.001) and was associated with a three-fold increased odds of clinically significant reduction in PPD events (OR 3.00, 95% CI 1.93-4.67).
3.	Public Health Nurse-delivered Group Cognitive Behavioral Therapy for Postpartum Depression: A Randomized Controlled Trial	Lieshout et al.	Randomized Controlled Trial	141	The intervention group receiving nurse-delivered CBT group therapy experienced a significant reduction in EPDS scores (B = -5.35, p < 0.01). It was three times more likely to show significant clinical improvement (OR = 3.44, 95% CI 1.49–7.94) compared to the control group. Six months post-intervention, the CBT group still showed a significant reduction in PPD symptoms (OR = 5.10, 95% CI 1.89–13.78), with only 25%

					of participants reporting MDD symptoms compared to 70% in the control group ($p < 0.01$).
4.	Transdiagnostic Internet-Delivered Cognitive Behavioral Therapy for Symptoms of Postpartum Anxiety and Depression: Feasibility Randomized Controlled Trial	Suchan et al.	Feasibility of Randomized Controlled Trial	63	The ICBT group showed significant reductions in postpartum depressive symptoms with proportional reductions of 34%-46% (Cohen's d=0.98-1.47) after treatment and at 1-month follow-up, and further reductions at 6-month follow-up (32%-56% reduction, Cohen's d=0.88-2.06). Although improvements in PPD symptoms were greater in the ICBT group than in the TAU group (20%-25% reduction, Cohen's d=0.62-0.72), the interaction term for each group was not statistically significant (p=0.20), indicating that the differences between the ICBT and TAU groups were not robust.

RESULT

Characteristics of the included studies

Based on the screening results, four articles were included in the review with a distribution of 3 articles published in 2022 and one article in 2023. Three of the four articles came from Canada indicating that CBT research in that country is quite in demand. The results of the study characteristics are shown in Table 4.

Table 4. Study Characteristics (N=4)

Study Characteristic	n (%)
Year of Publication	
2022	3 (75)
2023	1 (25)
Country	
Canada	3 (75)
China	1 (25)
Number of study participants	
50-99	1 (25)
100-499	3 (75)
Recruitment location	
Hospital	1 (25)
Primary/community care	3 (75)
Time of measurement of depression	
0-1 months postpartum	1 (25)
2-6 months postpartum	3 (75)

Theme

Based on the articles that have passed the screening, three major discussion themes were obtained, including the effectiveness of CBT, factors that influence the effectiveness of CBT, and the impact of CBT on PPD and other psychological outcomes.

Table 5. Mapping of Research Article Themes

Theme	Sub Themes	Article
Effectiveness of various CBT methods for PPD treatment	App Based CBT	1
	1-Day CBT Workshop	2
	Group CBT by Health Workers	3
	Internet-Delivered CBT (ICBT)	4
Factors Affecting the Effectiveness of CBT	Intervention Time	1,2,3, 4
	Contribution of health workers	1,2,3, 4
Impact of CBT on PPD Symptoms and Psychological Outcomes	Decreased Symptoms of Depression	1,2,3, 4
	Other Psychological Outcome Improvements	1,2,3, 4

DISCUSSION

The Effectiveness of CBT Methods as PPD Treatment

Cognitive Behavioral Therapy (CBT) is a method that combines direct and reciprocal interactions between thoughts, feelings, and behavior. CBT focuses on cognitive intervention through challenges and changes in thought patterns and behavior[10]. The CBT model is based on the principle that human thinking is formed through stimulus, cognitive, and response processes that are interrelated to form a kind of network in the human brain. This cognitive process is a determining factor in explaining how humans think, feel, and act[2]. The implementation of CBT has flexibility that can be adjusted to individual needs in face-to-face or online forms while still involving strategies such as self-regulation, cognitive restructuring, and stress management[11]. Here are some CBT implementation methods based on journal articles that have passed screening.

Based on research by Qin et al[12] using a postpartum depression prevention approach aimed at a universal group, namely early postpartum mothers using a

CBT application called CareMom. The CareMom application is an application that contains psychoeducation and cognitive restructuring programs. CareMom consists of two main components, namely daily challenges consisting of videos and several quiz questions. Video topics include human emotions, types of cognitive distortions, and methods to challenge cognitive distortions. The second component is heart management, used to record the user's mood every day and reflect on events and thoughts related to their mood. This feature adopts the core concept of CBT to improve a person's emotional and behavioral conditions through the process of identifying, challenging, and reconstructing negative thoughts. Based on the results of the intervention study with CareMom, it was effective in reducing the EPDS score in the fourth week to 2.7 ($p < 0.001$).

Further research was conducted by Lieshout et al[16] implementing a CBT intervention with a one-day workshop method delivered by a psychiatrist. This interactive workshop was held from 09.00 to 16.00 using four modules containing didactic learning, group exercises or discussions, and role-playing. The material presented in the module includes the etiology of PPD, focusing on cognitive factors, focusing on cognitive skills, including cognitive restructuring, building problem-solving behavioral skills, and opportunities for action planning. The intervention using this one-day CBT workshop was effective in reducing postpartum depression symptoms with an EPDS score at 12 weeks follow-up of 11.22 ($p < 0.01$).

Based on research conducted by Lieshout et al. [17] , CBT was carried out in the form of counseling with nurses consisting of nine weekly sessions for 2 hours. The intervention was divided into two sessions. The first session contained core CBT content, then the second session included psychoeducation and/or discussion on relevant topics about PPD and was guided by a nurse. The results of the study showed that the 1-day CBT workshop intervention was effective in reducing EPDS scores at T2 10.82 ($p < 0.05$).

The next study was conducted by Suchan et al[15] implementing a website-based CBT course. The course learning was given for 8 weeks consisting of 5 learning topics, including psychoeducation about anxiety and depression in general, information about meaningless thoughts related to the CBT model and strategies for monitoring and challenging thoughts, psychoeducation about physical symptoms and strategies for managing under and overarousal, unhelpful behaviors CBT model and guidelines on behavioral activities, and information about relapse prevention, normalization and making a relapse plan. Each learning includes a case story and a do-it-yourself guide. This website-based CBT course intervention was effective in reducing EPDS scores from 14.47 to 7.86.

The results of the review above show that the CBT intervention method by therapists and internet-based is effective in reducing postpartum depression symptoms. Internet-based interventions have been shown to have the same effectiveness as interventions with human support[16]. The development of existing technology encourages the development of internet-based mental health services such as iCBT, which offers ease of customization, cost-effectiveness, time-effectiveness, geographic flexibility, time flexibility, consistency, high availability, and rapid distribution[17].

Factors Affecting the Effectiveness of CBT

Table 6. Post-Treatment Decreased Rate of Depressive Symptoms

Intervention	Duration	Reduction
CareMom CBT App-based	4 weeks	40,00%
1-day CBT Workshop	1 day	29,00%
CBT by trained nurse	2 hours per week for 9 weeks	41,89%
Transdiagnostic ICBT with therapist support	8 weeks	46,00%

Table 6 shows that the 1-day CBT workshop intervention demonstrated the lowest level of EPDS score reduction of 29,00%. The relatively lower effectiveness may be attributable to several factors. One key consideration is the shorter duration and limited therapist support compared to group CBT interventions, which typically offer repeated sessions, allowing for deeper cognitive restructuring and behavioral reinforcement. Moreover, outcomes were measured only at 3 months post-intervention, without immediate post-treatment evaluation, which may have influenced the sensitivity of the findings. The study also used self-reported outcomes, which could be affected by subjective perceptions and spontaneous remission. Although the percentage of reduction was low compared to other interventions, this one-day CBT workshop was able to reduce the EPDS score from 15.77 to 11.22 ($p < 0.01$). This one-day CBT workshop was considered effective and received a good response from respondents; as many as 155 (96,00%) respondents agreed that the workshop would remain online for all sessions, and 140 (87%) were satisfied with the full-day workshop[16].

A transdiagnostic Internet-Delivered Cognitive Behavioral Therapy (ICBT) intervention, which is an online CBT approach designed to address a wide range of mood and anxiety disorders rather than a single diagnosis, showed a higher reduction rate of 46,00% in postpartum depression symptoms. This improvement in depressive symptoms is consistent with previous meta-analytic reviews that the effects of CBT were statistically significant as a treatment for PPD, and the improvement results were maintained at a 6-month follow-up. A study by Loughnan et[18] al also supports these findings that shorter (4 weeks) and condensed ICBT programs, such as MUMentum Postnatal, showed better results because they were more suited to the time constraints of postpartum mothers. This suggests that intervention timing and program duration play an important role in the effectiveness of CBT. However, higher patient motivation in self-referral programs, such as in the study by Loughnan et al., may contribute to better outcomes, suggesting that external factors such as referral and patient motivation should also be considered in designing CBT interventions.

Lieshout et. al[14] research with CBT intervention given by nurses who have been trained in CBT treatment showed a large percentage reduction in PPD symptoms of around 41,89%. This intervention was given in nine weekly sessions for two hours. Measurements and follow-ups were carried out at T2 and T3 to assess the stability of CBT in reducing postpartum depression symptoms. Meanwhile, the CareMom Intervention showed a fairly high decrease in depression symptoms of 40,00% in the fourth week of the intervention. The CareMom application has 28 challenges

that must be completed in 28 days. The involvement of application users is important in supporting the success of the intervention. More than 90% of participants completed the challenges until the end, which supports the effectiveness of the implementation of CBT in this CareMom application.

It is recommended that CBT sessions be given for at least 30-45 minutes each session to get effective results. If the CBT session is carried out for less than 30 minutes, there is a risk that the intervention results will not be effective[2]. Based on the percentage of EPDS score reduction reported across the four included journals at various follow-up periods (ranging from 4 weeks to 6 months), CBT interventions consistently showed significant effects in reducing postpartum depression symptoms. This confirms that the effect of CBT in reducing PPD can be maintained in the long term. This is supported by a systematic review by Dooley et al[19], which stated that CBT significantly reduced symptoms of postpartum depression for up to 12 months postnatal.

Therapist support also plays an important role in increasing the effectiveness of Cognitive Behavioral Therapy (CBT), especially in overcoming postpartum depression (PPD). Therapist support helps participants understand the material, apply CBT strategies correctly, and maintain motivation during the therapy process[20]. A workshop-based study conducted by Lieshout et al[13] showed that direct support from a therapist in a one-day session increased the likelihood of clinical improvement by 3 times compared to the control group (OR = 3.00; 95% CI: 1.93–4.67) with a decrease in EPDS scores of 4.6 points. In group CBT guided by public health nurses conducted by Lieshout et al[14], regular support for 9 weeks increased the likelihood of clinical improvement by 5.10 times after 6 months (OR = 5.10; 95% CI: 1.89–13.78). In addition, in internet-based therapy (ICBT) with therapist support via messages and phone calls, participant compliance increased to 95%, with a decrease in depression scores (d = 0.56) indicating a moderate effect. These results indicate that the combination of therapist support, both in face-to-face and online formats, plays an important role in accelerating symptom improvement and significantly improving therapy outcomes.

Impact of CBT on PPD Symptoms and Psychological Outcomes

Table 7. Post-treatment Results (EPDS Score)

CBT Method	EPDS Score Baseline	EPDS Score Decrease (P-value)
CareMom CBT App-based 1 day	4.54	2.71 (0.037)
CBT Workshop	15.8	11.22 (<0.01)
Group CBT by Nurses	16.09	T2 10.82 (<0.05)
Transdiagnostic CBT based internet	14.47	8.75 and 7.86 (0.20)

Based on the review of Table 7, the study conducted by Suchan et al[15] showed insignificant results, but ICBT increased the proportion of EPDS score reduction by 34-46%, Cohen's d = 0.98-1.47. Improvements in EPDS results were maintained until the 6-month follow-up, and participants were satisfied with the ICBT course as a credible medium and a high level of alliance with their therapist. Previous studies have confirmed that internet-based CBT is effective in reducing PPD symptoms by providing a convenient and easily accessible treatment

option for postpartum mothers[12]. Although ICBT was not statistically significant on EPDS, significant results were shown by GAD-7 after treatment and 1-month follow-up (p <0.05). These results indicate that in addition to contributing to reducing the level of depressive symptoms, ICBT is effective in reducing anxiety in postpartum mothers.

Based on the results of Qin et al[12] the CareMom application significantly reduced EPDS scores in week 4 (mean = 2.7, p <0.001). These results indicate that CareMom is effective in reducing depressive symptoms during the early postpartum period. These results are supported by previous research by Jannati et al[21] intervention with the Happy Mom application in a group of postpartum mothers with EPDS scores >9 or indicated postpartum depression. The Happy Mom application was proven to be effective in reducing EPDS scores from 17.42 to 8.18 (p = 0.001). However, other psychological outcomes showed that CareMom did not significantly reduce anxiety symptoms. These results are supported by the main purpose of CareMom content and features being developed to prevent postpartum depression.

Furthermore, research conducted by Lieshout et al[14] (significantly decreased the EPDS score from T1 to T2 with a decrease of 15.77 to 11.22 (p<0.01, Cohen's d =0.62). This one-day CBT workshop showed effectiveness in treating depression not only in the postpartum maternal population but also in the general population, including adults or adolescents with depression. In addition, this intervention also significantly decreased anxiety with GAD scores from 11.36 to 7.14 (p<0.01, d=0.56). This intervention also helped improve aspects of the mother-infant relationship, including bonding, rejection, pathological anger, and infant anxiety (PBQ-IB 13.04 to 10.27, p<0.01, d= 0.27).

Then, the group-based CBT research conducted by Lieshout et al[14] showed significant results in a decrease in EPDS scores at T1 from 16.1 to 10.8 at T2 (B = -5.35, p<0.01). In addition, this intervention also significantly influenced the decrease of fear (PSWQ score 64.6 to 57.7, B= -6.86, p<0.01), the increase of mother-infant bond PBQ-Bonding score from 13.79 to 9.82 (B= 4.08, p,0.01) as well as PBQ-Rejection from 7.18 to 5.01 (B=-2.25, p<0.01), and PBQ-Infant-focused anxiety (5.43 to 3.97; B= −1.49, p<0.01). This stable mother-infant relationship was made possible by the application of CBT skills by the mother in interacting with the baby, improvement of depressive and/or anxiety symptoms, or informal teaching model of skills by nurses who have experience in delivering public health messages about mother bonding. And babies.

Based on the above explanation, it shows that in addition to being effective in reducing postpartum depression symptoms, CBT is also effective in improving other psychological outcomes, such as reducing anxiety and bonding between mother and baby. CBT is effective as an intervention for postpartum depression and anxiety by increasing cognitive and behavioral changes and influencing maternal mood symptoms to reduce their severity, which is influenced by neural mechanisms by increasing activation of the control system[22]. In addition, it causes changes in adaptive processes in the neurophysiological systems involved in the infant's regulatory system, encouraging good interactions between mother and infant[23]. This supports increased maternal-infant bonding because CBT has the potential to reduce the transmission of risk from mother to infant[24].

Despite these promising findings, this scoping review has several limitations. Only four studies met the inclusion criteria, which may limit the breadth of perspectives and generalizability of the conclusions. Furthermore, the inclusion was restricted

to studies available in full text and published in English, which may have narrowed the scope of potentially relevant evidence. Variability in study design, population characteristics, and intervention delivery also posed challenges in making direct comparisons across studies.

Future research should focus on conducting larger-scale comparative studies that evaluate the long-term effectiveness of CBT across diverse postpartum populations and healthcare settings. Based on current findings, group-based CBT led by trained nurses appears to be a particularly promising model, showing both short- and long-term benefits for maternal mental health (OR= 5.10). Integrating such models into routine postpartum care may serve as a scalable and cost-effective strategy to enhance maternal well-being and mother–infant bonding.

CONCLUSION

This Scoping Review examines whether CBT is effective as a treatment for postpartum depression. The results of the scoping review showed that the CBT model combined with internet-based and face-to-face approaches was effective in reducing depression. In addition, CBT interventions were also effective in reducing anxiety levels and improving bonding between mothers and babies.

CONCLUSION

This scoping review examined whether CBT is effective as a treatment for postpartum depression. The results of the scoping review showed that the CBT model combined with internet-based and face-to-face approaches was effective in reducing depression. In addition, CBT interventions were effective in reducing anxiety levels and improving bonding between mothers and babies.

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