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A Systematic Review on the Effectiveness of Cognitive Behavioral Therapy (CBT) Compared to Antidepressant Medications (ADM) on Adults with Depressive Disorder

Clyde Cyril L. Baculio[1], Kristle Chiara B. Miguel[2], Lydy Grace L. Segurola[3]

[1]College of Allied Health Sciences, Ramon Magsaysay Memorial Colleges, General Santos City, Philippines
[2]Operations and Learners Support, Koronadal National Comprehensive High School, South Cotabato, Philippines
[3]College of Nursing, Davao Medical School Foundation, Inc., Davao City, Philippines

Abstract

The increasing prevalence of depression necessitates effective treatment strategies, particularly in understanding the relative efficacy of Cognitive Behavioral Therapy (CBT) and Antidepressant Medications (ADM). This study systematically reviews the literature to compare the effectiveness of Cognitive Behavioral Therapy (CBT) as a monotherapy versus its use as a supplementary therapy alongside Antidepressant Medications (ADM) in managing depressive symptoms among adults. A comprehensive search was conducted across PubMed, Cochrane Library, and EBSCOhost, identifying primary Randomized Controlled Trials (RCTs) published between January 1, 2014, and August 1, 2024. The search yielded 565 studies, which were narrowed down to five Randomized Controlled Trials (RCTs) after rigorous screening against predefined inclusion and exclusion criteria. The selected studies provide compelling evidence that Cognitive Behavioral Therapy (CBT) significantly reduces depressive symptoms and improves remission rates across various patient populations. Key findings include Nakagawa et al. (2017), which demonstrated that patients receiving Cognitive Behavioral Therapy (CBT) plus Treatment as Usual (TAU) experienced a greater reduction in depressive symptoms compared to those receiving Treatment as Usual (TAU) alone, with sustained effects over 12 months. Fredlan and colleagues (2015) reported significant reductions in Beck Depression Inventory-II scores among heart failure patients receiving Cognitive Behavioral Therapy (CBT), highlighting its effectiveness in diverse settings. Additionally, Petrak et al. (2015) found that while both Cognitive Behavioral Therapy (CBT) and sertraline were effective, sertraline showed a slight advantage in remission rates for patients with poorly controlled diabetes. Button et al. (2015) and Wiles et al. (2014) further supported the efficacy of combining Cognitive Behavioral Therapy (CBT) with usual care or pharmacotherapy. The results underscore the potential for a holistic approach that integrates Cognitive Behavioral Therapy (CBT) with Antidepressant Medications (ADM) to address both cognitive and biochemical aspects of depression, leading to enhanced long-term outcomes. This study provides valuable insights that can inform clinical decision-making and

improve patient care trajectories in managing depressive disorders.

Keywords: Cognitive Behavioral Therapy, Antidepressant Medications, Depressive Disorder, Adults with Depressive Disorder, Randomized Controlled Trial, Systematic Review

1. Introduction

Depressive disorder is a widespread and serious mental health issue affecting individuals across all age groups, leading to significant impairments that disrupt or restrict essential life activities (World Health Organization, 2023; National Institute of Mental Health, 2023). Understanding the most effective treatment options is crucial for addressing this pervasive issue. According to the 2023 Gallup national survey, there has been a 10-percentage point increase in the United States (U.S.) adults reporting a lifetime diagnosis of depression compared to 2015, with the prevalence rising from 19.6% in 2015 to 29.0% in 2023 (Witters, 2023). This upward trend is not limited to the United States (U.S.); globally, depression has become a major public health concern, impacting countries like the Philippines, where the World Health Organization reports that 154 million Filipinos suffer from depression, and 877,000 die due to suicide every year (Department of Health, 2018). Between 1990 and 2019, the number of individuals with mental disorders in the Philippines increased from 7.0 to 12.5 million, with an average annual increase of 2.0%, primarily affecting those with anxiety and depression (Cureg-Estrada et al., 2023).

Despite the growing prevalence of depressive disorders, there remains a significant gap in identifying and implementing the most effective treatment modalities. Current treatment for depression include psychotherapies, medications and other adjunct therapies (Institute for Quality and Efficiency in Health Care [IQWiG], 2020; American Psychological Association, 2019). Among these, Cognitive Behavioral Therapy (CBT) stands out as one of the most evidence-based interventions for treating various psychiatric disorders, including depression with no absolute contraindication as compared to medications (Gautam et al., 2020). However, questions persist regarding the comparative effectiveness of Cognitive Behavioral Therapy (CBT) as a standalone treatment versus pharmacological interventions such as antidepressant medications (ADM), as well as the potential benefits of using Cognitive Behavioral Therapy (CBT) in combination with antidepressant medications (ADM).

The rationale for this study lies in addressing this research gap by systematically reviewing the literatures to compare the effectiveness of Cognitive Behavioral Therapy (CBT) as monotherapy versus antidepressant medications (ADM), and Cognitive Behavioral Therapy (CBT) as supplementary therapy alongside antidepressant medications (ADM), in managing depressive symptoms among adults. Given the increasing prevalence of depression and the pressing need for tailored treatment strategies, this study is both timely and relevant. The researchers aim to provide clarity on the relative efficacy of these treatment modalities, with the potential to inform clinical decision-making and improve patient outcomes in the management of depressive disorder.

Research Questions

1. What is the evidence comparing the effectiveness of Cognitive Behavioral Therapy (CBT) as monotherapy versus antidepressant medications (ADM) in managing depressive symptoms among adults with depressive disorder?
2. What is the evidence comparing the effectiveness of Cognitive Behavioral Therapy (CBT) combined with antidepressant medications (ADM) versus combined with antidepressant medications (ADM) al-

one in managing depressive symptoms among adults with depressive disorder?
3. What are the outcomes of Cognitive Behavioral Therapy (CBT) as monotherapy compared to antidepressant medications (ADM) in terms of remission among adults with depressive disorder?
4. What are the outcomes of Cognitive Behavioral Therapy (CBT) as monotherapy compared to antidepressant medications (ADM) in terms of remission among adults with depressive disorder?

2. Methodology

The researchers performed a systematic literature review utilizing the electronic databases of PubMed, Cochrane Library, and EBSCOhost to identify primary Randomized Controlled Trials (RCTs) published from January 1, 2014 to August 1, 2024 that compared Cognitive Behavioral Therapy (CBT) as both monotherapy and supplemental therapy against antidepressant medications (ADM) alone. The accompanying keywords were used to acquire original Randomized Controlled Trials (RCTs) for this inquiry: Cognitive Behavioral Therapy, Cognitive Behavioural Therapy, Cognitive Behavioral Therapies, Cognitive Behavioural Therapies, Cognitive behavioral therapy, Cognitive Behav* Therapy, Depression, Major Depressive Disorder, Depressive Disorder, Antidepressant, antidepressants, Depression Medications, antidepressant, Randomized Controlled Trial, Adults.

The three researchers individually appraised the identified Randomized Controlled Trials (RCTs) using the NIH Quality Assessment Tool for Controlled Intervention Studies and the Joanna Briggs Institute Critical Appraisal Checklist for Case Reports. The three independent researchers screened the titles and abstracts for relevance, followed by a full-text review. The researchers then set eligibility criteria to guarantee that the identified Randomized Controlled Trials (RCTs) provide reliable and valid results. The following are inclusion criteria for the studies: (1) Randomized Controlled Trials published between 2014 to 2024; (2) Peer-reviewed studies; and (3) intervention consist of either Cognitive Behavioral Therapy (CBT) as monotherapy or as a supplemental therapy. On the other hand, the exclusion criterias are as follows: (1) studies involving individuals under 18 years of age; and (2) Cognitive Behavioral Therapy (CBT) intervention that is telephone, internet, or application-based were excluded. All differences and disputes were addressed by consensus. The researchers used the PRISMA 2020 flow diagram to illustrate the systematic review process, delineating the flow of information across several stages.

Following the manual screening, pertinent data were retrieved from the screened studies, exported to a data extraction grid, and then validated by the three researchers. The data was synthesized, and a framework for an evidence gap map was created to depict the synthesized evidence. The following information was derived from each chosen study: (1) last name of the first author, and year of publication; (2) title of the research; (3) comparative outcome of interventions.

3. Results

Figure 1. PRISMA 2020 Flow Diagram

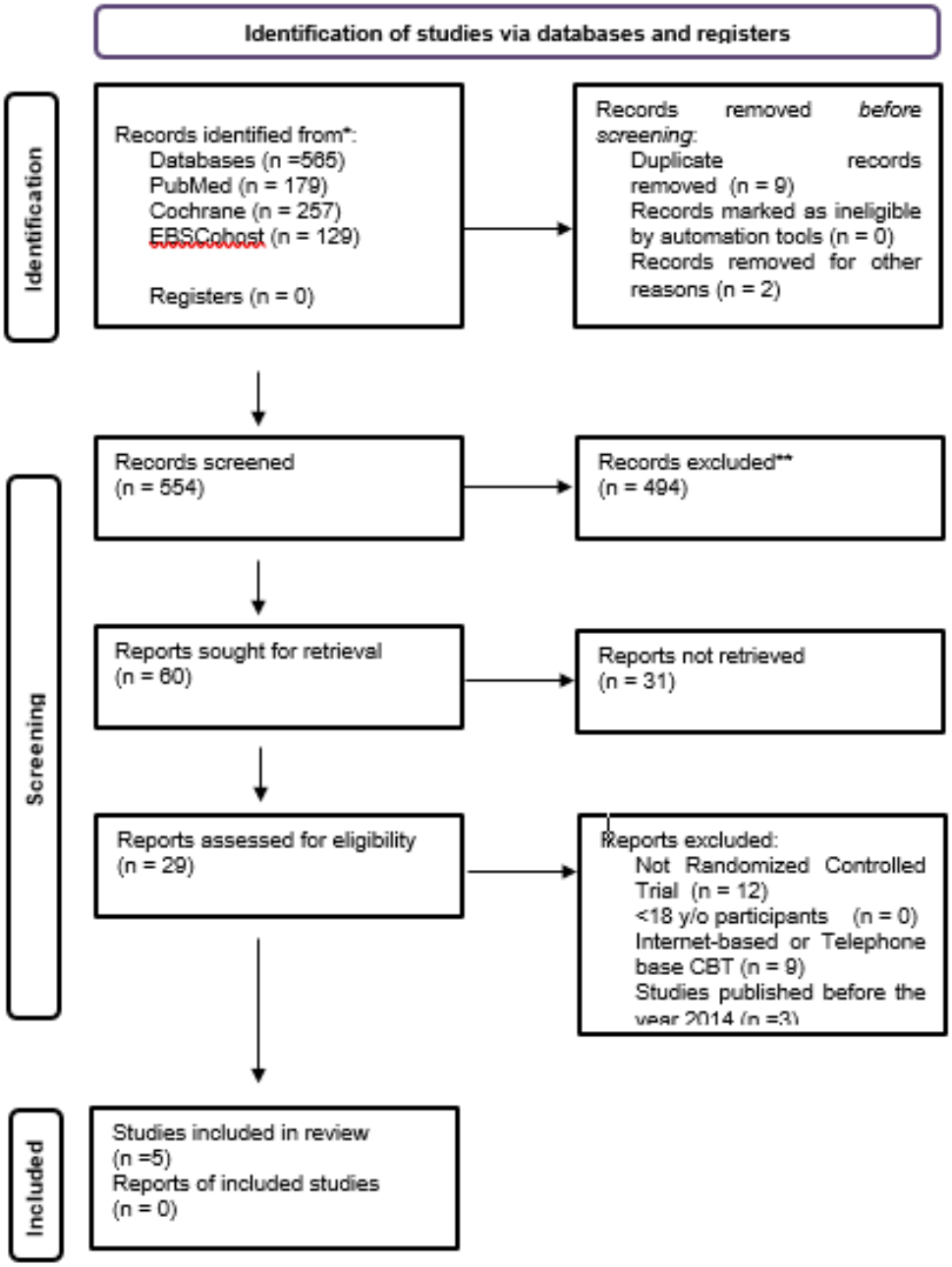

Table 1. Key Findings from the screened studies

Study No.	Authors	Title	Result
1	Nakagawa et al. (2017)	Effectiveness of Supplementary Cognitive-Behavioral Therapy for Pharmacotherapy-	**Result:** 16 Weeks: The cognitive behavioral therapy (CBT) plus treatment as usual (TAU) group showed a significantly greater reduction in

		Resistant Depression: a Randomized Controlled Trial	depressive symptoms compared to the treatment as usual (TAU) alone group (mean change in GRID-Hamilton Depression Rating Scale [GRID-HDRS])[17] score: -12.7 vs -7.4; difference = -5.4; 95% CI, -8.1 to -2.6; P < .001). 12 Months: The treatment effect was sustained, with the cognitive behavioral therapy (CBT) plus treatment as usual (TAU) group continuing to show greater improvement (mean change in GRID-Hamilton Depression Rating Scale [GRID-HDRS]) score: -15.4 vs -11.0; difference = -4.4; 95% CI, -7.2 to -1.6; P = .002). **Remission Rate:** The study reported that the remission rate, defined as a GRID-Hamilton Depression Rating Scale (GRID-HDRS) score of 7 or less, was significantly higher in the group receiving supplementary CBT compared to the control group. Specifically, at the 16-week mark, 45% of participants in the cognitive behavioral therapy (CBT) + treatment as usual (TAU) group achieved remission, compared to 22.5% in the treatment as usual (TAU) alone group
2.	Fredlan et al. (2015)	Cognitive Behavior Therapy for Depression and Self-Care in Heart Failure Patients: a Randomized Clinical Trial	**Reduction in Depressive Symptoms:** The cognitive behavioral therapy (CBT) group showed significantly lower depression scores at six months compared to the Usual Care group (Beck Depression Inventory-II [BDI-II] scores: 12.8 vs. 17.3; P = .008). **Remission Rates:** Higher remission rates in the cognitive behavioral therapy (CBT) group on both the Beck Depression Inventory-II (BDI-II) (46% vs. 19%) and the Hamilton Depression Scale (51% vs. 20%).
3.	Petrak et al. (2015)	Cognitive behavioural therapy vs. sertraline in patients with depression and poorly controlled diabetes mellitus: a randomized controlled trial - DAD	**Reduction in Depressive Symptoms:** Both cognitive behavioral therapy (CBT) and sertraline improved depression, but sertraline had a significant advantage (Hamilton Depression Scale

			[HAMD-17] change: −2.59, 95% CI 1.15–4.04, P < 0.05). **Remission Rate:** The remission rate for depression was defined as a Hamilton Depression Rating Scale (HAMD-17) score of 7 or less. At the end of the 12-week treatment period, the remission rates were: Sertraline Group: 59.7% and cognitive behavioral therapy (CBT) Group: 52.5%. These results indicate that both treatments were effective in achieving remission, with sertraline showing a slightly higher remission rate compared to cognitive behavioral therapy (CBT).
4.	Button et al. (2015)	Moderators of response to cognitive behavioural therapy as an adjunct to pharmacotherapy for treatment-resistant depression in primary care	**Reduction in Depressive Symptoms:** Cognitive behavioral therapy (CBT) plus Usual Care: Significant reduction in depressive symptoms was observed. Usual Care Alone: Lesser reduction in depressive symptoms compared to the CBT group. **Remission rate:** Cognitive behavioral therapy (CBT) plus Usual Care: 46% of patients achieved remission. Usual Care Alone: 22% of patients achieved remission. The scale used is Beck Depression Inventory-II (BDI-II).
5.	Wiles et al. (2014)	Clinical effectiveness and cost-effectiveness of cognitive behavioural therapy as an adjunct to pharmacotherapy for treatment-resistant depression in primary care: the CoBalT randomised controlled trial	**Reduction in Depressive Symptoms:** Patients receiving Cognitive behavioral therapy (CBT) in addition to usual care showed a significant reduction in depressive symptoms compared to those receiving usual care alone. **Remission Rates:** The study reported higher remission rates in the Cognitive behavioral therapy (CBT) group, with these effects maintained over a 12-month period

4. Discussion

In this systematic review, researchers utilized three databases PubMed, Cochrane Library, and EBSCOhost employing specific keywords to identify relevant literature. Initially, a total of 565 studies were retrieved. Following a rigorous deduplication process, 494 studies were screened against predefined exclusion criteria, ultimately resulting in 5 studies that met all inclusion requirements for in-depth analysis. This meticulous selection process underscores the thoroughness of the review and ensures that the findings are based on a robust evidence base.

The five studies included in the review provide compelling evidence regarding the effectiveness of cognitive behavioral therapy (CBT) in reducing depressive symptoms and improving remission rates among various patient populations. The study of Nakagawa and colleagues (2017) which is a randomized controlled trial focused on patients with pharmacotherapy-resistant depression. The results demonstrated that at sixteen weeks, the cognitive behavioral therapy (CBT) plus Treatment as Usual (TAU) group exhibited a significant reduction in depressive symptoms compared to the Treatment as Usual (TAU) alone group, with a mean change in GRID-Hamilton Depression Rating Scale (GRID-HDRS$_{17}$) score of -12.7 versus -7.4 (difference = -5.4; 95% CI, -8.1 to -2.6; $P < .001$). Further, at 12 Months, the treatment effect was sustained, showing continued improvement (mean change: -15.4 vs -11.0; difference = -4.4; 95% CI, -7.2 to -1.6; $P = .002$) which showed a remission rate of 45% of participants in the cognitive behavioral therapy (CBT) plus Treatment as Usual (TAU) group achieved remission compared to 22.5% in the Treatment as Usual (TAU) alone group in 16 weeks.

In the study of Fredlan and peers (2015), it examined heart failure patients receiving cognitive behavioral therapy (CBT) wherein results showed that there was a reduction in symptoms among the cognitive behavioral therapy (CBT) group who had significantly lower Beck Depression Inventory-II (BDI-II) scores at six months (12.8 vs 17.3; $P = .008$). The remission rates stated higher remission rates were observed in the cognitive behavioral therapy [CBT] group (46% vs 19% on Beck Depression Inventory-II [BDI-II]; 51% vs 20% on Hamilton Depression Scale).

Result based on the study of Petrak and colleagues (2015) showed that trial compared cognitive behavioral therapy (CBT) with sertraline in patients with depression and poorly controlled diabetes explained the reduction in symptoms and both treatments were effective, but sertraline showed a significant advantage with a Hamilton Depression Scale (HAMD-17) change of −2.59 ($P < 0.05$). The remission rates were 59.7% for sertraline and 52.5% for cognitive behavioral therapy (CBT).

Button and peers (2015) conducted a study focused on treatment-resistant depression in primary care. The results of the study explained significant reductions were noted in the cognitive behavioral therapy (CBT) plus Usual Care group. Furthermore, the remission rate was notably higher in the cognitive behavioral therapy (CBT) plus Usual Care group at 46%, compared to just 22% in Usual Care alone.

Wiles et al. (2014) research assessed the clinical effectiveness and cost-effectiveness of cognitive behavioral therapy (CBT) as an adjunct to pharmacotherapy. Results showed that patients receiving cognitive behavioral therapy (CBT) alongside usual care showed significant reductions in depressive symptoms. Higher remission rates were maintained over a year for those receiving cognitive behavioral therapy (CBT).

The effectiveness of cognitive behavioral therapy (CBT) extends beyond adults; it has also been shown to be beneficial for children and adolescents with depression. A systematic review highlighted that evidence-based psychological interventions like cognitive behavioral therapy (CBT) are often preferred due to their favorable risk-benefit profile compared to pharmacological treatments, which can carry risks such as

increased suicide ideation. This aligns with the findings from the studies reviewed, which demonstrate that CBT can effectively address depressive symptoms across various demographics (Oud et al., 2019).
The findings from these studies collectively underscore the efficacy of cognitive behavioral therapy (CBT) as an supplementary treatment for depression across diverse patient populations and settings. The consistent pattern of reduced depressive symptoms and improved remission rates reinforces the notion that integrating psychological therapies like cognitive behavioral therapy (CBT) can enhance treatment outcomes, particularly for those who have not responded adequately to pharmacotherapy alone. Combining cognitive behavioral therapy (CBT) with pharmacotherapy or other supportive treatments yields better outcomes than monotherapy alone.

5. Conclusion

The findings of the present study provide valuable insights into the management of depressive symptoms, particularly in the context of Cognitive Behavioral Therapy (CBT) and Antidepressant Medications (ADM). The study underscores that Cognitive Behavioral Therapy (CBT), whether used as a monotherapy or supplementary to Antidepressant Medications (ADM), is an effective treatment for managing depressive symptoms. However, the evidence pointing to higher remission rates with Antidepressant Medications (ADM) suggests that for some patients, especially those with more severe symptoms, Antidepressant Medications (ADM) might be the preferred primary treatment. On the other hand, combining Cognitive Behavioral Therapy (CBT) with Antidepressant Medications (ADM) offers the potential for a more comprehensive approach, addressing both the cognitive and biochemical aspects of depression, leading to enhanced long-term outcomes. This holistic strategy allows healthcare providers to personalize treatment plans, ultimately improving patient care and recovery trajectories.

6. Recommendations

Based on the results of this systematic review, it is recommended to promote personalized treatment plans through the conduct of thorough assessments to determine the severity of depressive symptoms in patients. For those with more severe symptoms, prioritize Antidepressant Medications (ADM) as the primary treatment while considering Cognitive Behavioral Therapy (CBT) as a supplementary approach. Interventions should be tailored and implement customized treatment plans based on individual patient needs, preferences, and previous treatment responses, ensuring that both Cognitive Behavioral Therapy (CBT) and Antidepressant Medications (ADM) are considered where appropriate.
For patients who do not achieve adequate symptom relief from monotherapy, it is recommended to use combined Cognitive Behavioral Therapy (CBT) and Antidepressant Medications (ADM). For patients who do not respond to one modality, it is suggested to consider transitioning to a combination of therapies. For instance, if a patient fails to remit with Antidepressant Medications (ADM), adding Cognitive Behavioral Therapy (CBT) may target residual symptoms effectively, and vice versa.
It is recommended further to increase access to trained Cognitive Behavioral Therapy (CBT) therapists to ensure that patients can receive high-quality therapy alongside pharmacotherapy. This may involve training more mental health professionals in Cognitive Behavioral Therapy (CBT) techniques or utilizing teletherapy options. Additionally, standardized protocols should be developed for implementing Cognitive Behavioral Therapy (CBT) in conjunction with Antidepressant Medications (ADM) to ensure consistent delivery of care across different healthcare settings.
Researchers recommend that patients should be educated about the benefits and potential side effects of

both Cognitive Behavioral Therapy (CBT) and Antidepressant Medications (ADM). Involve them in decision-making regarding their treatment options to enhance adherence and satisfaction with their care. To add, provide resources that help patients develop coping skills and resilience through CBT techniques, which can be beneficial in managing their condition long-term.

Further research is encouraged by examining the long-term effects of combined therapies versus monotherapies in diverse populations to strengthen the evidence base for integrated approaches.

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