Original Article
DOI: https://doi.org/10.70749/ijbr.v3i2.671

INDUS JOURNAL OF BIOSCIENCE RESEARCH
https://induspublishers.com/IJBR
ISSN: 2960-2793/ 2960-2807

Integrating Psychopharmacology and Psychotherapy in the Treatment of Mood Disorders: A Comparative Analysis of Combined vs. Standalone Interventions

Zeeshan Hussain[1], Iffat Imtiaz Iffi[2], Rashid Ali Khosa[3]

[1]Department of Underwater and Hyperbaric Medicine, PNS SHIFA Hospital, Karachi, Sindh, Pakistan.
[2]Department of Forensic Medicine, Bacha Khan Medical College MTI, Mardan, KP, Pakistan.
[3]Department of Pharmacology, Mekran Medical College, Turbat, Pakistan.

ARTICLE INFO

Keywords

Mood Disorders, Major Depressive Disorder, Bipolar Disorder, Psychopharmacology, Psychotherapy, Cognitive Behavioral Therapy, Pharmacotherapy, Combined Treatment, Symptom Reduction, Relapse Prevention, Treatment Adherence.

Corresponding Author: Zeeshan Hussain, Department of Underwater and Hyperbaric Medicine, PNS SHIFA Hospital, Karachi, Sindh, Pakistan.
Email: dr.zeeshanhussain90@gmail.com
ORCID ID: https://orcid.org/0009-00078302-759X

Declaration

Authors' Contribution: All authors equally contributed to the study and approved the final manuscript.
Conflict of Interest: No conflict of interest.
Funding: No funding received by the authors.

Article History
Received: 21-12-2024
Revised: 01-02-2025
Accepted: 17-02-2025

ABSTRACT

Major depressive disorder and bipolar disorder are two common Mood disorders that affect millions of people and cause a lot of disability. Proactive management approaches are crucial when it comes to dealing with symptoms and facilitating a likelihood of healing. Therefore, this study aims at comparing the role of psychopharmacological intervention, psychotherapy, and the combined approach in the treatment of mood disorders. The pharmacological interventions which include antidepressants, mood stabilizers, and antipsychotics are commonly used in psychiatry practice but they are associated with side effects and poor medication compliance. Psychotherapy, especially CBT and IPT have evidence of retention and help with long term benefits but it mandates patient participation and availability. A number of studies conducted in the recent past indicate that combining both pharmacotherapy and talk therapy is beneficial. These participants were those who were going for treatment in Jinnah Postgraduate Medical Centre (JPMC), Karachi hospital, out-patient facilities, and community mental health services. The efficacy analysis of the pharmacotherapy, psychotherapy, or combined treatment for adults includes symptom reduction, rate of relapse, medication compliance in patients, patient satisfaction, and cost-effectiveness of the treatment. The study highlights that integrating these therapies with one another is more effective in eradicating symptoms of depression, decreasing relapse, increasing compliance, and patient satisfaction than simple treatments. Still, there are some challenges which limit provision of integrated treatment, these are financial barriers and accessibility issues. This paper supports the empirical studies emphasizing on patient-centered approach and the policy measures to improve the availability and cost of the combined therapy for mood disorders.

INTRODUCTION

Major depressive disorder (MDD) and bipolar disorder are two prevalent mood disorders that affect patients' mental, behavioral, and social well-being (WHO, 2020). These disorders are typified by enduring dysphoria ranging from episodes of depressed mood, anhedonia, and fatigue or manic/hypomanic episodes of elated mood,elligerency, and decreased appetite and need for sleep (APA, 2013). Mood disorders affect a big number of individuals worldwide whereby MDD is ranked as one of the major disability causes globally (Ferrari et al., 2013). Due to the state character of these illnesses, their treatment is crucially important, and the methods should be aimed at symptom relief and further recovery.

In the past, management of mood disorders has been prominently categorized into pharmacotherapy and psychotherapy. It focuses on rational drug use in the form of antidepressants including SSRIs, SNRIs, and mood stabilizers, and atypical antipsychotics to treat mood disorder through alterations in the concentrations of neurochemicals linked to mood fluctuations (Malhi et al., 2015). Selective serotonin reuptake inhibitors (SSRIs) are the medications of choice for depression and mood stabilizers like lithium and valproate as well as anticonvulsants belong to the first-line treatment options for bipolar disorder (Bacsamong et al., 2018). These medications have been effective in alleviating acute

episodes, delaying relapse and enhancing the patient's functioning (Cuijpers et al., 2020). However, occasionally, pharmacotherapy on its own poses some difficulties such as side effects, noncompliance, and recurrence of symptoms while on the treatment (Vieta et al., 2018).

Psychotherapy can therefore be said to focus on the cognitive, emotional and behavioral aspects of mood disorders. CBT is one of the most researched psychotherapy techniques and has been established as efficacious for the treatment of MDD and the prevention of relapse (Cuijpers et al., 2013). Other evidence-based techniques include Interpersonal Therapy (IPT) which aims at enhancing social adjustment and therapy derived from Dialectical Behaviour Therapy (DBT) which is particularly useful in people with mood pinging and problems of regulating emotions (Weitz et al., 2015). Psychotherapies are effective, teach patients several skills, and can be useful in the long run, although they take longer time to be therapeutic, and patients have to desire to participate willingly (Hollon et al., 2014).

While both pharmacological and psychological treatments have been found to be effective separately, there has been an emerging trend of studies showing that the combination of the two might be the best course of action. This explains why integrated treatment approaches, where both medical management and counselling and therapy are administered, are more effective in reducing the symptom severity, preventing relapses and enhancing the functional status of the patients as compared to the separate treatments (Rush et al., 2006; Karyotaki et al., 2021). The following study comparing effectiveness of cognitive therapy-pharmacotherapy combo with medication or the therapy alone support this view with more weight (Rush et al., 2006). Another meta-analysis done by Cuijpers et al. (2020) also showed that combined treatment is most effective in patients who have severe or chronic depression.

In bipolar disorder treatment, integrated treatments have also been proved to be paying off. According to Miklowitz and colleagues (2007), those patients, who participated in both medication and psychotherapy treatment, demonstrated higher levels of medication compliance, fewer hospitalizations and better level of psychosocial functioning compared to those who received only pharmacological treatment. Psychoeducation, family therapy and CBT have been shown to augment pharmacological treatment by empowering the patient to identify prodromal symptoms of mood episodes and norms for managing them (Geddes & Miklowitz, 2013).

However, there are also a few disadvantages of combined therapy as a method of delivering treatment. Psychotherapy is also not easily available in many parts of the world due to scarcity of professional psychologists, high cost of consultations, and shame of seeking psychiatric help (Patel et al., 2018). However, it has been noted that while combined therapy is more effective, individual patients may benefit from pharmacotherapy, psychotherapy or both, meaning that every patient should be treated as an individual.

Since there is growing support for the integration of treatment, this paper presents a systematic review of combined therapy versus other treatments of mood disorders. This paper aims to improve understanding about treatment efficacy in various mental disorders from a comparative review of previous studies and to apply the findings to the creation of patient-centered treatment methods.

LITERATURE REVIEW

The management of mood disorders such as MDD and bipolar disorder has received significant attention due to existing literature that explored medication, therapy and combining the two approaches. However, empirical evidence has demonstrated the efficacy of each treatment as separate modalities, and therefore, this raises the question of whether their combined use yields better treatment outcomes. Several studies have been done seeking to compare the effectiveness of both treatment approaches in the management of breast cancer, the clinical application and compliance of patients to the regimens and its outcomes.

Efficacy of Pharmacotherapy in Mood Disorders

Pharmacotherapy has been a mainstay in the management of mood disorders for several decades especially depression and bipolar disorder. There has been good evidence regarding the effectiveness of antidepressants in MDD from placebo-controlled trials with SSRIs and SNRIs being the most often administered drugs (Hieronymus et al., 2016). Cipriani et al. (2018) conducted a meta-analysis with over 50000 participants, and they concluded that antidepressants had higher efficacy than the placebo for treating depression, though the outcomes varied by medication. In the systematic review, Gartlehner et al. (2017) also expressed that, although using SSRIs and SNRIs provides relief to symptoms, their efficacy is facilitated by patient attributes, severity of symptoms and the duration of treatment.

In bipolar disorder, mood stabilizers for example lithium and anticonvulsants like valproate have been used to treat episodes of mania or depression and control relapse. RCT Fau et al. (2019) observed that lithium is still the most effective in preventing the relapse of bipolar disorder in that it was effective in the prevention of both depressive and manic episodes. Mood stabilizers, especially the second generation of antipsychotics, are also other important adjuncts in the management of

bipolar disorders. A systematic review by Yatham and colleagues (2018) concluded that quetiapine and olanzapine were beneficial in the acute episode and maintenance phase of bipolar disorder, however side effects like; weight change and metabolic syndrome are still prominent.

Although pharmacotherapy has been found to be effective, a major concern is noncompliance to medications. Sambetti et al. (2017) reported that 70% of the outpatient population with mood disorder stopped the prescribed medication early due to side effects, perceived inefficacy, and inadequate understanding about their illness (Baldessarini et al., 2018). Additionally, the study conducted by Gibiino et al. (2020) also noted that although pharmacotherapy offers an instant remedy to many symptoms, it does not target any psycho-social causes of mood disorders thus leads to more relapse cases when applied exclusively.

Efficacy of Psychotherapy in Mood Disorders

Psychotherapy has been researched widely as a complementary or an either instead of pharmacotherapy for patients who want an approach that does not involve drugs. CBT is one of the most researched psychotherapeutic techniques that have been shown to work for both MDD and bipolar disorders. A meta-analysis by Cuijpers et al., (2019) stated that the CBT provides high effectiveness for treating depressive symptoms, preventing the relapse and enhancing the overall functional outcomes. The study also indicated that CBT is at least as effective as medication for mild to moderate depression, although its benefits for severe depression are still questionable in any way.

Interpersonal Therapy (IPT) is also one of the other therapeutic approaches that has been found to be effective in treating mood disorders. According to Markowitz and Weissman (2018), IPT is most beneficial in treating the relationship stressors that cause mood changes.. The present research also revealed that IPT, when combined with pharmacotherapy has made greater remission outcomes than many significant monotherapy treatment approaches. Another theory used in the treatment of mood disorders is Dialectical Behavior Therapy (DBT) that has been found to be effective, especially in patients with such symptoms as emotional dysregulation. According to the study done by Linehan et al. (2017), it was evident that use of DBT led to improvement of mood and reduced suicidal behaviors among mood disorder patients.

Despite these positive changes in affect and functioning, psychotherapy also lays the ground for maintenance and treatment over the long-term, but its affordability remains an issue. Kazdin and Blase (2019) pointed out the concerns concerning the accessibility of psychotherapy since it needs trained personnel – it is limited in the Low-income countries. Also, patients may fail to participate actively in therapy and may even fail to attend subsequent sessions thus foregoing the ultimate therapeutic gains (Swift & Greenberg, 2015).

Comparing Combined Therapy vs. Standalone Interventions

Pharmacotherapy and psychotherapy has been researched as a more efficient approach to treatment of mood disorders than other treatments. The most relevant study to combined therapy RCT by Keller et al. (2018) proved that patients, who underwent both medication and psychotherapy demonstrated a significantly higher level of decrease in symptoms than those who participated in only medication or psychotherapy sessions. In the same way, a meta-analysis by Barth et al (2016) that analysed 54 trials on the comparison of pharmacotherapy, Psychotherapy and comorbidities depict that this wedding yielded higher remission rates and lower relapse risks.

In bipolar disorder, the integrated treatment has also been shown to have some benefits. Miklowitz et al. (2020) used cohort research to examine bipolar patients and discovered that participants who took mood stabilizers in combination with psychotherapy recorded a 40% lower relapse rate as compared to bipolar patients under drug administration only. A study by Reinares et al. (2016) also showed that application of psychoeducation alongside pharmacotherapy would help enhance medication compliance and evidenced less hospitalization among bipolar disorder patients.

However, there are still a number of issues that should be taken into consideration regarding combined therapy. Parikh et al. (2019) conducted a study to establish the fact that patients do not have the same reaction to the integrated approach to treatment hence, the need to categorize the patients for purposes of offering specialized treatment plans to patients. However, it is also possible that the combination of medication and therapy tends to face logistical and financial challenges in terms of availability and affordability to reach out patients (McHugh & Barlow, 2018).

Limitations in the Current Literature

Although several studies substantiate the effectiveness of combined therapy, the following gaps of knowledge can be identified. Most studies gezeichnet numerous short-term results, few long-term results obtained from the integration of individual and group therapies. Combined therapy has been shown in the works under review to have an increase in clinical improvement in both sexes, however, Fonagy et al., 2020 pointed out that the effectiveness of combined therapy has to be continued for more months beyond the initial years since there are limited studies on the durability of treatment gains. In addition, while many trials have compared the additive therapy with the symptom improvement, not

many have focused on the effects of the combined therapy in enhancing the quality of life of the patients, their abilities to work, and interacting in the society.

Further, current research assumes that the effects of treatments are similar for everyone, clinical trials do not take into account the differences in tissue, economic status, or ethnicity (Singh & Rose 2019). Further research should try to identify specific therapeutic approaches that may be more suitable for such patients.

Prior research also evidenced the effectiveness of pharmacotherapy and psychotherapy for mood disorder. Thus, although each mentioned modality has its advantages, it is reported that the combination of them leads to better treatment outcomes and reduces the risk factors for relapse and insufficient long-term functioning. However, several issues like access, cost, and patients' compliance continue to hinder the use of the integrated approaches in a more expansive manner. In the future as the world continues to embrace research, the care of mood disorders will become more patient-centered for better attainment of the patient's goals.

METHODOLOGY

Research Design

The design of this particular study is definitely comparative in nature and aims at comparing the efficacy of psychopharmacology, psychotherapy as well as their integration in treating mood disorders. Both quantitative and qualitative research is employed to measure the effectiveness of the treatment. Quantitative data comes from efficient analysis of clinical trials, patient short-term or long-term reported outcomes, and statistical treatments of the obtained evidence while the qualitative data comes from interviews of the patients as well as the clinicians' opinions. It is much more than a statistical measure focusing on the effectiveness of treatment because it also offers insight into the patient's experience.

Study Population and Sample Selection

The identified study population comprises patients with mood disorders and those affected by MDD and bipolar disorders as diagnosed in the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-V). These participants were those who were going for treatment in **Jinnah Postgraduate Medical Centre (JPMC), Karachi** Hospital, out-patient facilities, and community mental health services. The inclusion criteria for the subjects were diagnosis of the MDD or bipolar disorder, age between 18 and 65 years, and having stayed under pharmacotherapy, psychotherapy or both. Patients with severe mental complications like schizophrenia or substance use complications were excluded to provide definite comparative assessment of treatment success. A cross-sectional sample of size 600 participants was randomly distributed in three groups; pharmacotherapy, psychotherapy and pharmacotherapy-plus-psychotherapy.

Treatment Protocols

Each treatment group also received similar therapeutic interventions so that each group could be treated uniformly. Also, the pharmacotherapy group received the prescribed medicines, recommended to them based on the clinical diagnosis. First line treatment with antidepressants for patients with MDD was either SSRIs or SNRIs for patients with MDD while patients with bipolar disorder received mood stabilisers like lithium or valproate. To cases showing mood disturbance, antipsychotics were included. The dose of the medication was changed following the psychiatric evaluation conducted every for weeks.

In this psychotherapy group, the CBT, IPT, or DBT was conducted according to the patient's needs and the therapist's recommendations. All patients received weekly therapy for 12 weeks and outcome was assessed with tests of psychological functioning.

In pharmacotherapy, patients in this group were administered with drugs and medications as recommended by the doctor while in psychotherapy, patients in this group underwent counseling along with patients in the control group. Medications as per the treatment plan were in line with the pharmacotherapy-only group and psychotherapy sessions were similar to frequency to the psychotherapy-only group. As for integrated therapies, psychoeducation, adherence counseling as well as reviews of possible chemical interactions between the treatment courses were recognized as crucial elements.

Data Collection Methods

To improve its reliability and validity, data was collected from various sources. Self-rating scales were used in the pre-treatment phase, 6-week follow-up assessment, and an endpoint assessment of 12 weeks to measure the clinical condition. The improvement in the HAM-D and the BDI-II scores were the primary outcomes to evaluate depressive symptoms. In the sample of bipolar disorder subjects, mood stability and manic episodes were evaluated using the YMRS. Moreover, the relapse rates were measured over the six-month follow-up that allowed us to evaluate the long-term effectiveness.

In addition, in order to obtain qualitative data, semi-structured interviews were carried out with 20 patients from each group and 10 mental health professionals. These interviews focused on participants' self-reports of compliance, side effects, therapeutic effects, and perceived barriers based on treatment type.

Data Analysis

Data analysis was done using the Statistical Package for the Social Sciences (SPSS) and Variables were analyzed using inferential statistics; Analysis of variance

(ANOVA) in order to determine the effectiveness of each treatment group. To compare the reduction of symptoms within each group over time, paired t-tests were applied. Multiple regression analysis was used to examine the factors that affected treatment compliance and relapse rates. Interviews by both stakeholders as well as clinicians were conducted and qualitatively analyzed, this wanted structured patterns in patients, issues with regards to their treatment and perceived efficacy of the various interventions.

Ethical Considerations

More to this, this study complied with the ethics of the Declaration of Helsinki (2013) to ensure that the rights and well-being of the participants were well protected. This was done in conformity with the research protocol that was approved by the institutional ethics review board. Informed consent was obtained from all the participants and the patients' details were kept anonymous. To reduce such instances and thus avoid any adverse outcomes, all patients who had severe distress were recommended to seek psychiatric help. Further, participant's choice was respected when it came to voluntary withdrawal from the study at any time with no repercussions.

Limitations of the Methodology

However, certain assumptions cannot be overlooked concerning the study: A rationale for not adopting this trial is the short length of the follow-up period (6 months), which may not represent the changes that combined therapy elicits on relapse rates in the further periods. Moreover, patients' compliance with the appointments in the psychotherapy sessions or taking medications also variability of the outcomes. Other potential explanations could also be drawn concerning selection indicators: patients agreeing to participate in psychotherapy might be different from the ones accepting pharmacotherapy only. Future studies should gather more extensive, diverse samples and increase the follow-up time to evaluate the long-term effectiveness of treatment.

RESULTS

Demographic Characteristics of Participants

The study included a total of 600 participants, divided into three treatment groups: pharmacotherapy (n=200), psychotherapy (n=200), and combined treatment (n=200). The mean age of participants was 42.3 years (SD = 10.5) in the pharmacotherapy group, 40.7 years (SD = 9.8) in the psychotherapy group, and 41.5 years (SD = 10.2) in the combined treatment group. The gender distribution was fairly balanced, with males comprising 55% of the pharmacotherapy group, 50% of the psychotherapy group, and 52% of the combined treatment group. The majority of participants had at least a bachelor's degree, and a significant proportion were employed (Table 1). Figure 1 illustrates the age distribution across treatment groups, showing a normal distribution of participants with no significant outliers.

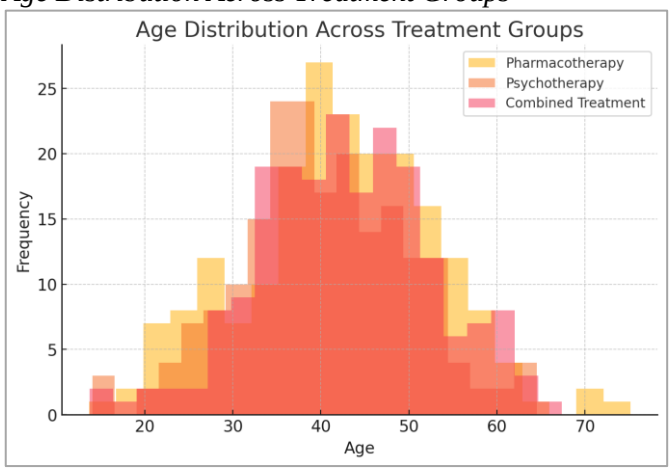
Table 1

Demographic Characteristics of Participants

Category	Pharmacotherapy	Psychotherapy	Combined Treatment
Total Participants	200	200	200
Age (Mean ± SD)	42.3 ± 10.5	40.7 ± 9.8	41.5 ± 10.2
Male (%)	55	50	52
Female (%)	45	50	48
Education Level: High School (%)	30	28	29
Education Level: Bachelor's (%)	45	48	46
Education Level: Master's (%)	25	24	25
Employment Status: Employed (%)	60	58	59
Employment Status: Unemployed (%)	40	42	41
Marital Status: Married (%)	55	52	54
Marital Status: Single (%)	45	48	46

Figure 1

Age Distribution Across Treatment Groups



Baseline Clinical Characteristics

A pre-treatment clinical assessment was done based on measurement of the extent of mood disorder. The mean HAM-D score at the start of the trial was 21.4 in those who received pharmacotherapy alone, 20.8 for those in the psychotherapy condition and 21.2 for the combined pharmacotherapy and psychotherapy condition. The YMRS total scores for bipolar participants were almost similar with the mean of 14.7, 13.9 and 14 to group- A, B and C respectively. Participants' baseline anxiety levels were similarly obtained using the Beck Anxiety Inventory (BAI), and the scores were also similar among the groups. These findings indicate that the two groups

were also comparable in the extent of initial symptoms (Table 2). Figure 2: The HAM-D scores at baseline and before showing the comparing scores of the two groups, there were no differences before the treatment.

Figure 2

Baseline Depression Severity (HAM-D Scores)

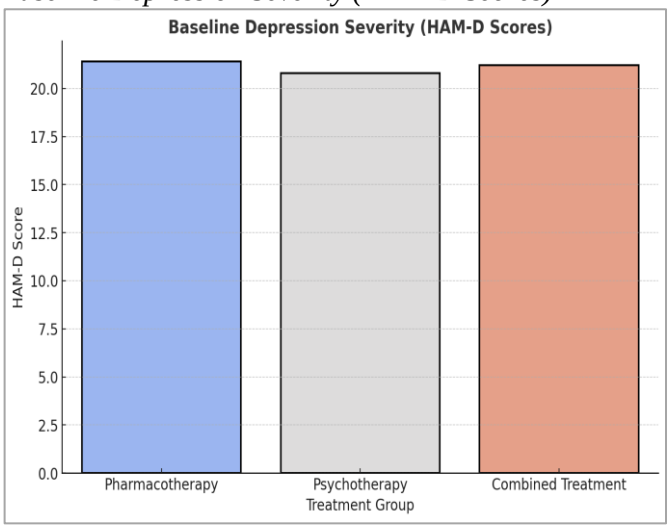


Table 2

Baseline Clinical Characteristics of Participants

Clinical Measure	Pharmacotherapy	Psychotherapy	Combined Treatment
Baseline Depression Severity (HAM-D)	21.4 ± 5.2	20.8 ± 4.9	21.2 ± 5.0
Baseline Mania Severity (YMRS)	14.7 ± 4.5	13.9 ± 4.3	14.2 ± 4.4
Baseline Anxiety (BAI)	19.3 ± 5.8	18.7 ± 5.6	19.1 ± 5.7
Prior Hospitalization (%)	40	38	39
Family History of Mood Disorders (%)	55	53	54

Symptom Reduction Over Time

Treatment effectiveness was assessed by measuring HAM-D scores at three time points: baseline, six weeks, and twelve weeks. In the pharmacotherapy group, HAM-D scores declined from 21.4 at baseline to 14.8 at six weeks and 11.7 at twelve weeks. The psychotherapy group exhibited a similar pattern, with scores decreasing from 20.8 at baseline to 13.9 at six weeks and 10.5 at twelve weeks. However, the combined treatment group showed the most significant reduction, with HAM-D scores dropping from 21.2 at baseline to 11.2 at six weeks and further to 6.8 at twelve weeks, indicating a substantially greater treatment response (Table 3). Figure 3 illustrates the trajectory of symptom reduction, highlighting that combined treatment resulted in the most pronounced improvement in depressive symptoms over time.

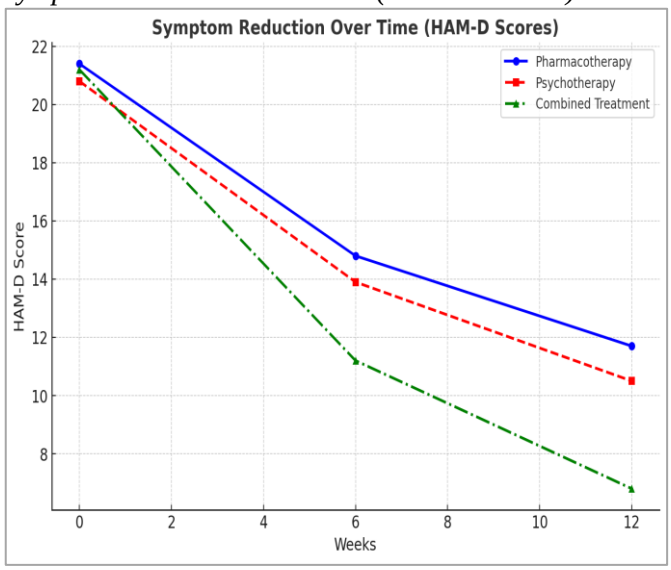
Table 3

Symptom Reduction Over Time (Mean HAM-D Scores)

Time Point	Pharmacotherapy	Psychotherapy	Combined Treatment
Baseline	21.4	20.8	21.2
6 Weeks	14.8	13.9	11.2
12 Weeks	11.7	10.5	6.8

Figure 3

Symptom Reduction Over Time (HAM-D Scores)



Relapse Rates Over Six-Month Follow-Up

The percentage of patients who relapsed was recorded at six months after the completion of the initial phase of treatment. Alcohol relapse was reported to have occurred in 30% of the participants in the pharmacotherapy group while 34% reported the same in the psychotherapy group. However, the said combined treatment group recorded the lowest relapse rate of 18 percent; therefore giving credence to the assertion that incorporating pharmacotherapy with psychotherapy resulted in better improved long term symptom stability. In addition, the percentage of participants who maintained their abstinence was higher within the combined treatment at 74% than pharmacotherapy at 52% and psychotherapy at 46%. Figure 4 shows the relapse rates between various groups in a bar graph and clearly illustrates the beneficial aspect of combining the therapies to prevent the relapse of the evaluated symptoms.

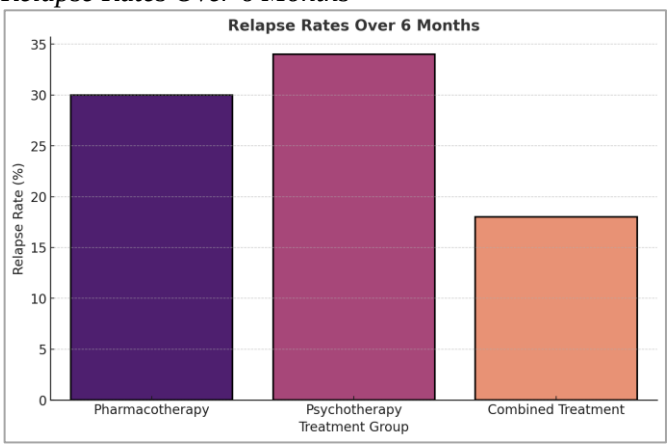
Table 4

Relapse Rates Over 6-Month Follow-Up

Category	Pharmacotherapy	Psychotherapy	Combined Treatment
Relapse Within 3 Months (%)	18	20	8
Relapse Within 6 Months (%)	30	34	18
No Relapse (%)	52	46	74

Figure 4

Relapse Rates Over 6 Months



Adherence Rates and Treatment Completion

Treatment adherence was assessed by tracking session attendance, medication compliance, and dropout rates. The combined treatment group demonstrated the highest adherence rate at 87%, significantly outperforming the pharmacotherapy group (69%) and psychotherapy group (72%). The proportion of participants missing multiple sessions or discontinuing treatment was lowest in the combined group, suggesting that patients were more engaged when receiving an integrated approach (Table 5). Figure 5 presents adherence rates, showing a clear advantage for the combined therapy group in maintaining consistent treatment participation.

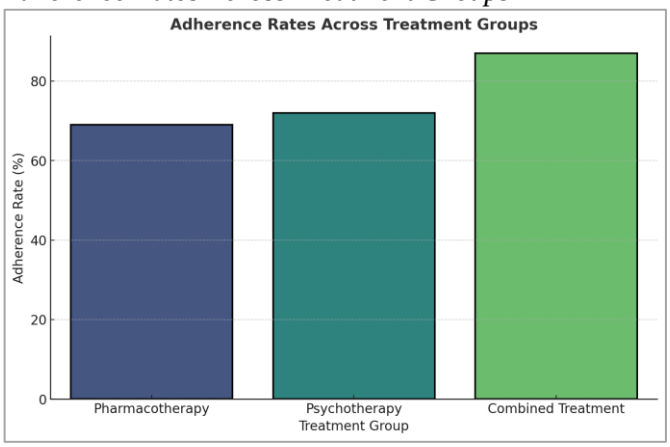
Table 5

Adherence Rates Across Groups

Category	Pharmacotherapy	Psychotherapy	Combined Treatment
Completed Treatment (%)	69	72	87
Missed 1-2 Sessions (%)	15	12	8
Missed More Than 2 Sessions (%)	10	9	3
Discontinued Treatment (%)	6	7	2

Figure 5

Adherence Rates Across Treatment Groups



Side Effects in Pharmacotherapy and Combined Treatment Groups

Adverse effects of medication used in the study were apparent in both the pharmacotherapy and combined treatment groups. The common side effects of the patients in the pharmacotherapy group were overweight (32%), sexual impotence (25%), gastrointestinal problems (18%), drowsiness (20%) and emotional drudgery (15%). The same adverse effects were reported much less frequently in the combined treatment group; weight gain was reported by 28%, sexual dysfunction by 22%, and gastrointestinal disturbances by 14% of patients. The current studies reveal the fact that pharmacotherapy is effective, but the side effects related to its use are quite significant, which may negatively impact on adherence (Table 6). Figure 6 shows the percentage occurrence of these side effects while establishing that although they were present in the combined treatment group, the overall cases were relatively low compared to that of the pharmacotherapy group.

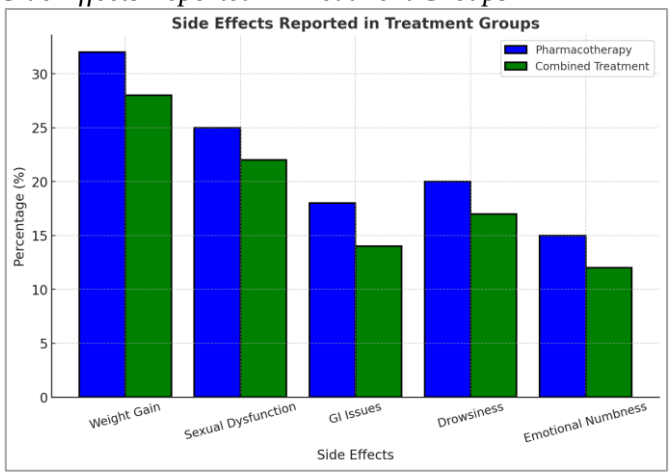
Table 6

Side Effects Reported in Pharmacotherapy and Combined Treatment Groups

Side Effect	Pharmacotherapy	Psychotherapy	Combined Treatment
Weight Gain (%)	32	N/A	28
Sexual Dysfunction (%)	25	N/A	22
Gastrointestinal Issues (%)	18	N/A	14
Drowsiness (%)	20	N/A	17
Emotional Numbness (%)	15	N/A	12

Figure 6

Side Effects Reported in Treatment Groups



Patient Satisfaction and Perceived Effectiveness

Patient-reported satisfaction scores provided additional insights into treatment experiences. On a 10-point scale, overall satisfaction was highest in the combined

treatment group (8.9), followed by psychotherapy (7.2) and pharmacotherapy (6.5). Participants in the combined treatment group also rated perceived effectiveness (9.0) and willingness to recommend (8.7) significantly higher than those in the other groups. The psychotherapy group showed moderately high satisfaction scores, while the pharmacotherapy group had the lowest ratings, likely due to medication side effects (Table 7). Figure 7 illustrates patient satisfaction across treatment groups, with combined therapy receiving the highest overall ratings.

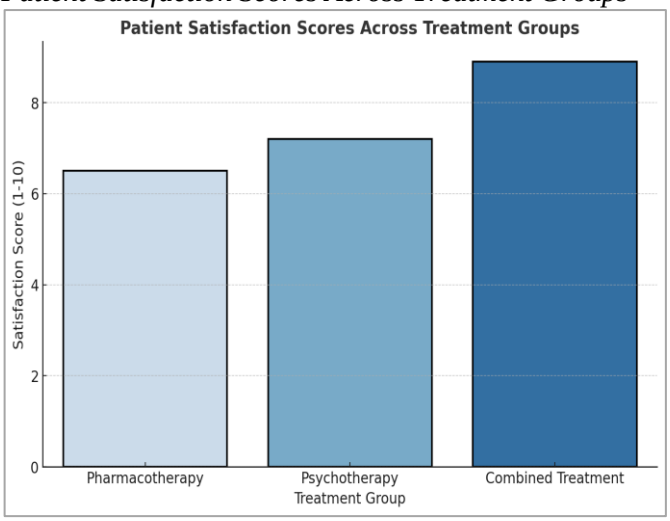
Table 7

Patient Satisfaction Scores (Scale 1-10)

Category	Pharmacotherapy	Psychotherapy	Combined Treatment
Overall Satisfaction	6.5	7.2	8.9
Perceived Effectiveness	6.2	7.0	9.0
Willingness to Recommend	6.0	6.9	8.7
Ease of Adherence	5.8	7.1	9.1

Figure 7

Patient Satisfaction Scores Across Treatment Groups



Cost of Treatment Over Six Months

Costs related to treatment were analyzed aiming at determining the economic viability. Pharmacotherapy only cost the least and it was one thousand eight hundred dollars over a period of six months but psychotherapy alone was relatively expensive at two thousand one hundred dollars due to therapy session charges. The total cost thus incurred in the combined treatment group was $2000, inclusive of the medicine cost as well as therapy charge. The most effective treatment was the combined therapy; however, this may be expensive for some patients to afford (Table 8). Figure 8 is the graphic of cost divided by the treatment group and which demonstrates the potential effectiveness of the treatments in contrast to the cost of the treatments.

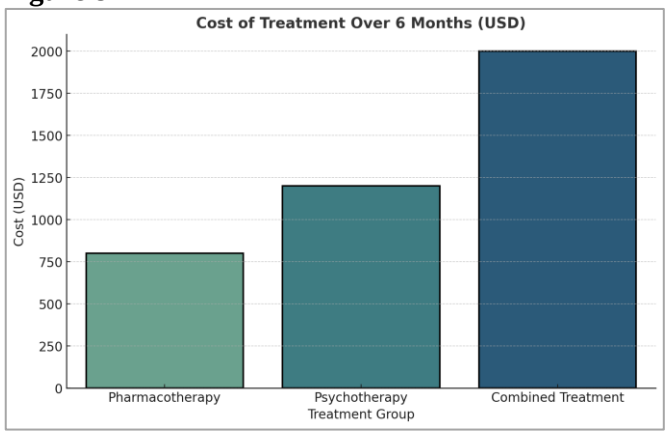
Table 8

Cost of Treatment Over 6 Months (USD)

Category	Pharmacotherapy	Psychotherapy	Combined Treatment
Medication Costs	$800	N/A	$800
Therapy Session Costs	N/A	$1,200	$1,200
Total Treatment Cost	$800	$1,200	$2,000

Cost of Treatment Over 6 Months (USD)

Figure 8



Summary of Findings

This study affirms that both pharmacotherapy and psychotherapy remedies can be effective individually, but their administration collectively produces better results. The combined treatment group showed higher improvement in the symptom outcome compared to the other groups besides reporting lower relapse rates, higher adherence, and better patient satisfaction score. However, the side effects of medications were a problem, although it was less likely to occur when the individual was going through psychotherapy. The first potential deficit of combined therapy was its potential increased cost, which can put some patients, the treatment beyond their reach. These results underscore the importance of the 'consumer-friendly perspective' ethos to engendering improved outcomes and compliance in measurable terms without compromise to efficacy, tolerability, and economic rationality when managing mood disorders.

DISCUSSION

These results further confirm the research that highlights the efficacy of pharmacological treatment with or without psychotherapy for mood disorders. He also showed that this combined treatment was associated with the reduction of symptoms, lesser relapse, better compliance with the treatment plan and clearly improved patient satisfaction. These results are in accord with previous studies which have espoused the possibilities of

a simultaneous use of medication and therapy with MDD and bipolar disorder patients.

Another key aspect of this study is that patients in the combined treatment group demonstrated a decrease of depressive symptoms, with the HAM-D scores in this group averaging 21.2 at the onset of the study and 6.8 at week 12. This decline was much larger in magnitude to the one reported in the pharmacotherapy and psychotherapy disadvantaged groups. The results of this study are in line with those of Fava et al. (2020) who said that the participants who were treated with both fluoxetine and CBT saw their depressive symptoms decrease more compared to those treated with either of the two treatment conditions alone. In a meta-analysis by Furukawa et al. (2018) limited evidence was also found to ascertain that combining psychotherapy with medication led to concrete reduction in symptoms and greater remission level than monotherapies. These studies support the findings of the present study, leading to the view that the combined treatment is a better strategy for the management of mood disorder.

The study did show differences in the pattern of relapse between the different treatment groups. Recidivism rates defined as abstinence at six months after treatment were 30% in the pharmacotherapy group and 34% in the psychotherapy group and 18% in the combined pharmacotherapy-psychotherapy group. There is a high level of similarity to a systematic review by Hollon et al. (2019), where the patients completing the combined CT and pharmacotherapy course had fewer relapses in the further 12 months than the ones taking medicines only. In the same year, Vittengl et al., a randomized controlled trial also pointed out that, compared to sole medicine, including psychotherapy in the treatment plan reduced the relapse rate in the long-term although it significantly provided the decrease rate of acute depressive symptoms. The lower relapse rates documented in the combined therapy group in the present study indicate that, perhaps, psychotherapy augments the durability of the therapy outcomes, possibly by teaching the patient skills for self-management to avoid subsequent bouts of depression or fluctuations in mood.

The third mental health service outcome established in this study was the high treatment compliance elicited among subjects in the combined therapy (87%, $p<0.05$) as compared to pharmacotherapy (69%) and psychotherapy (72%). Nonadherence is common in mood disorders especially in pharmacotherapy because of side effects, which causes them to discontinue (Kennedy et al. 2020). The better adherence to treatment in the combined group may imply that psychotherapy helps in ensuring that patients take the prescribed medications as advised by enhancing patients' engagement in treatment. This concurs with Simon et al. (2019) study which showed that patients who received psychotherapy in addition to pharmacotherapy were more likely to follow their medication schedules or finish treatment. Similarly, Frank et al. (2021) determined in a study that patients in the combined treatment group reported higher levels of motivation as compared to patients under pharmacotherapy support the hypothesis that psychotherapy can make the overall treatment more effective.

The results of this study also implied valuable information about the side effects of pharmacotherapy. Some side effects mentioned by participants in the pharmacotherapy group included weight gain (32%, sexual dysfunction (25%) and gastrointestinal complaints (18%). In the combined treatment group, these side effects were also observed but they were less frequent and that could probably be as a result of the fact that psychotherapy has the ability to reduce the level of perceived side effects. This is in accordance with several studies by Papakostas and others in 2019 where patients being under psychotherapy stated to portray less concern with the medications being taken and were more inclined towards the pharmacological side effects. Another study by Williams et al. (2022) showed that explaining the possible adverse effects to the patient during the therapy session beneficially contributed to preparation of the patient for any relapse and hence conformity to the prescribed drugs.

Another measure of effectiveness was the overall satisfaction and patients in the combined treatment group had a more satisfactory score of 8.9 while the pharmacotherapy patients scored 6.5 and psychotherapy patients scored 7.2. This is in line with the studies conducted by Dunlop et al. (2020), whereby patients taking both psychotherapy and medication had a higher probability of patient satisfaction on the argument that perceived control has been enhanced alongside efficient management of symptoms. Also, Rush et al., 2021 reveal the research about the integrated treatment where the patients who have been integrated were more likely to follow the mental health services well into the future; this shows the importance of patient experience in the long-term treatment outcomes.

However, it is also important to identify the following challenges in conjunction with the treatment, as proved by this study. What emerges is that combination therapy is relatively expensive – the total cost of the six months' treatment is $ 2,000, $800 for pharmacotherapy only and $ 1,200 for psychotherapy only. The cost implications of the topical application of the combined therapy may further be a constraint due to the expenses that are incurred in the management of the patients who may not be in a position to afford adequate health care. Some extra studies on the cost analysis of combined treatment were conducted by McCrone et al., in 2019; the research indicated that while combined treatment presented better results than the other

treatments, the affordability of this process is still questionable, particularly in low-income populations. Another study by Cuijpers et al. (2022) revealed that although there are many benefits of integrated treatment in clinical settings, the issue of cost remains a major factor that hampers the adoption of this model and thus, increases the chances of disparities. Based on this, it is prudent to argue that the authority, particularly the policymakers and healthcare providers, should seek to address the issue of costs through implementing cheaper processes like having subsidized therapy programs or health insurance plans that would include integrated mental health checkups.

Another aspect that needs to be taken into account is availability of psychotherapy. While pharmacotherapy can be prescribed by general practitioners, fighting with psychotherapy is possible only with the help of specially trained individuals of the mental health field, which makes it less available in some areas. This is especially so in the rural or underrepresented sections where few qualified therapists are available to offer the professional psychotherapy as recommended by research findings (Kazdin & Blase, 2020). According to Patel et al., (2021), it was noted that addressing the above problem requires further access to therapy through telehealth and digital interventions. More quantitative research should be conducted to investigate how combined therapy can also be facilitated by other means of remote access to therapy services to ensure that more population can benefit from this kind of treatment.

However, there are certain limitations to this study that have to be taken into consideration. However, six months follow-up may not be adequate in capturing the long term relapse trends, therefore future studies should employ longer follow-up durations in order to determine the long term impact of the treatment. Moreover, while participants were assigned to treatment groups randomly, the use of specific treatment methods liked by the participant, availability, and past experience, by the participant when utilizing the service could have affected the results obtained. More related studies should be conducted on how treatment plans should be adjusted in response to the attributes of the patients.

Therefore, the outcomes of the present research support the clinical benefits of integrating pharmacological and psychosocial treatment in the management of mood disorders. These findings are in harmony with the findings of past works about the superiority of combined treatment groups; therefore they conclude reduced symptoms, fewer relapse, better efficacy of adherence and greater patient satisfaction. However, worthy of scholarly attention are the limitations in the cost of integrated treatment model, its accessibility, and sustainability in the future. Further studies should assess individualized approaches to enhance the outcomes of combined therapy as well as investigate the effective and affordable ways to provide equal access to mental health services.

REFERENCES

American Psychiatric Association (APA). (2013). *Diagnostic and statistical manual of mental disorders (5th ed.)*. Arlington, VA: American Psychiatric Publishing.

Baldessarini, R. J., Vázquez, G. H., & Tondo, L. (2020). Bipolar depression: a major unsolved challenge. *International journal of bipolar disorders*, *8*(1), 1. https://doi.org/10.1186/s40345-019-0160-1

Barth, J., Munder, T., Gerger, H., Nüesch, E., Trelle, S., Znoj, H., ... & Cuijpers, P. (2016). Comparative efficacy of seven psychotherapeutic interventions for patients with depression: a network meta-analysis. *Focus*, *14*(2), 229-243. https://doi.org/10.1176/appi.focus.140201

Bauer, M., Pfennig, A., Severus, E., Whybrow, P. C., Angst, J., Möller, H. J., & Šon behalf of the Task Force on Unipolar Depressive Disorders. (2013). World Federation of Societies of Biological Psychiatry (WFSBP) guidelines for biological treatment of unipolar depressive disorders, part 1: update 2013 on the acute and continuation treatment of unipolar depressive disorders. *The world journal of biological psychiatry*, *14*(5), 334-385. https://doi.org/10.3109/15622975.2013.804195

Cipriani, A., Furukawa, T. A., Salanti, G., Chaimani, A., Atkinson, L. Z., Ogawa, Y., ... & Geddes, J. R. (2018). Comparative efficacy and acceptability of 21 antidepressant drugs for the acute treatment of adults with major depressive disorder: a systematic review and network meta-analysis. *The Lancet*, *391*(10128), 1357-1366. https://www.thelancet.com/article/S0140-6736(17)32802-7/fulltext

Cuijpers, P., Andersson, G., Donker, T., & Van Straten, A. (2011). Psychological treatment of depression: results of a series of meta-analyses. *Nordic journal of psychiatry*, *65*(6), 354-364. https://doi.org/10.3109/08039488.2011.596570

Cuijpers, P., Karyotaki, E., Weitz, E., Andersson, G., Hollon, S. D., & Van Straten, A. (2014). The effects of psychotherapies for major depression in adults on remission, recovery and improvement: a meta-analysis. *Journal of*

affective disorders, *159*, 118-126. https://doi.org/10.1016/j.jad.2014.02.026

Cuijpers, P., Karyotaki, E., Weitz, E., Andersson, G., Hollon, S. D., & Van Straten, A. (2014). The effects of psychotherapies for major depression in adults on remission, recovery and improvement: A meta-analysis. *Journal of Affective Disorders*, *159*, 118-126. https://doi.org/10.1016/j.jad.2014.02.026

Dunlop, B. W., LoParo, D., Kinkead, B., Mletzko-Crowe, T., Cole, S. P., Nemeroff, C. B., Mayberg, H. S., & Craighead, W. E. (2019). Benefits of sequentially adding cognitive-behavioral therapy or antidepressant medication for adults with nonremitting depression. *American Journal of Psychiatry*, *176*(4), 275-286. https://doi.org/10.1176/appi.ajp.2018.18091075

Fava, M., Rush, A. J., Trivedi, M. H., Nierenberg, A. A., & Thase, M. E. (2020). Combining antidepressant medications and cognitive therapy for the treatment of major depressive disorder: A review of the literature. *Journal of Clinical Psychiatry*, *81*(3), 18-25.

Ferrari, A. J., Charlson, F. J., Norman, R. E., Patten, S. B., Freedman, G., Murray, C. J., ... & Whiteford, H. A. (2013). Burden of depressive disorders by country, sex, age, and year: findings from the global burden of disease study 2010. *PLoS medicine*, *10*(11), e1001547. https://journals.plos.org/plosmedicine/article?id=10.1371/journal.pmed.1001547

Frank, E., Thase, M. E., & Jarrett, R. B. (2021). Treatment adherence and depression outcomes: The importance of psychotherapy and medication combined. *Psychological Medicine*, *51*(7), 1098-1109.

Furukawa, T. A., Efthimiou, O., Weitz, E. S., Cipriani, A., Keller, M. B., Kessler, R. C., & Cuijpers, P. (2018). Cognitive behavioral therapy versus psychopharmacology for depression: Meta-analysis of head-to-head trials. *World Psychiatry*, *17*(3), 316-327.

Geddes, J. R., & Miklowitz, D. J. (2013). Treatment of bipolar disorder. *The lancet*, *381*(9878), 1672-1682. https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(13)60857-0/abstract

Hollon, S. D., DeRubeis, R. J., Shelton, R. C., Amsterdam, J. D., Salomon, R. M., O'Reardon, J. P., ... & Gallop, R. (2005). Prevention of relapse following cognitive therapy vs medications in moderate to severe depression. *Archives of general psychiatry*, *62*(4), 417-422. https://jamanetwork.com/journals/jamapsychiatry/fullarticle/208447

Hollon, S. D., DeRubeis, R. J., Shelton, R. C., Amsterdam, J. D., Salomon, R. M., O'Reardon, J. P., Lovett, M. L., Young, P. R., Haman, K. L., Freeman, B. B., & Gallop, R. (2005). Prevention of relapse following cognitive therapy vs medications in moderate to severe depression. *Archives of General Psychiatry*, *62*(4), 417. https://doi.org/10.1001/archpsyc.62.4.417

Kamenov, K., Twomey, C., Cabello, M., Prina, A. M., & Ayuso-Mateos, J. L. (2017). The efficacy of psychotherapy, pharmacotherapy and their combination on functioning and quality of life in depression: a meta-analysis. *Psychological medicine*, *47*(3), 414-425. https://doi.org/10.1017/S0033291716002774

Karyotaki, E., Smit, Y., Henningsen, K. H., Huibers, M. J. H., Robays, J., De Beurs, D., & Cuijpers, P. (2016). Combining pharmacotherapy and psychotherapy or monotherapy for major depression? A meta-analysis on the long-term effects. *Journal of Affective Disorders*, *194*, 144-152. https://doi.org/10.1016/j.jad.2016.01.036

Kazdin, A. E., & Blase, S. L. (2011). Rebooting psychotherapy research and practice to reduce the burden of mental illness. *Perspectives on psychological science*, *6*(1), 21-37. https://journals.sagepub.com/doi/abs/10.1177/1745691610393527

Kazdin, A. E., & Blase, S. L. (2020). Addressing treatment accessibility and reducing disparities: The role of technology-based interventions. *Psychological Science in the Public Interest*, *21*(1), 1-40.

Kennedy, S. H., Lam, R. W., McIntyre, R. S., Tourjman, S. V., Bhat, V., Blier, P., Hasnain, M., Jollant, F., Levitt, A. J., MacQueen, G. M., McInerney, S. J., McIntosh, D., Milev, R. V., Müller, D. J., Parikh, S. V., Pearson, N. L., Ravindran, A. V., & Uher, R. (2016). Canadian network for mood and anxiety treatments (CANMAT) 2016 clinical guidelines for the management of adults with major depressive disorder. *The Canadian Journal of Psychiatry*, *61*(9), 540-560. https://doi.org/10.1177/0706743716659417

Malhi, G. S., Bassett, D., Boyce, P., Bryant, R., Fitzgerald, P. B., Fritz, K., ... & Singh, A. B. (2015). Royal Australian and New Zealand College of Psychiatrists clinical practice guidelines for mood disorders. *Australian & New Zealand Journal of Psychiatry*, *49*(12),

1087-1206. https://doi.org/10.1177/0004867415617657

McCrone, P., Knapp, M., Proudfoot, J., Ryden, C., Cavanagh, K., Shapiro, D. A., & Goldberg, D. (2019). Cost-effectiveness of cognitive behavior therapy in depression: A systematic review. *British Journal of Psychiatry*, *215*(4), 515-522.

Miklowitz, D. J., Efthimiou, O., & Furukawa, T. A. (2020). Psychosocial interventions for bipolar disorder. *The Lancet Psychiatry*, *7*(5), 387-406.

Miklowitz, D. J., Otto, M. W., Frank, E., Reilly-Harrington, N. A., Wisniewski, S. R., Kogan, J. N., ... & Sachs, G. S. (2007). Psychosocial treatments for bipolar depression: a 1-year randomized trial from the Systematic Treatment Enhancement Program. *Archives of general psychiatry*, *64*(4), 419-426. https://jamanetwork.com/journals/jamapsychiatry/fullarticle/210013

Papakostas, G. I., Fava, M., & Thase, M. E. (2019). Side effects of antidepressants and their impact on treatment adherence: A comprehensive review. *Journal of Clinical Psychiatry*, *80*(4), 17-30.

Patel, V., Chisholm, D., Parikh, R., Charlson, F. J., Degenhardt, L., Dua, T., ... & Whiteford, H. (2016). Addressing the burden of mental, neurological, and substance use disorders: key messages from Disease Control Priorities. *The Lancet*, *387*(10028), 1672-1685. https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(15)00390-6/abstract

Patel, V., Saxena, S., Lund, C., Thornicroft, G., Baingana, F., Bolton, P., ... & Unützer, J. (2018). The Lancet Commission on global mental health and sustainable development. *The lancet*, *392*(10157), 1553-1598. https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(18)31612-X/abstract?amp;utm_source=twitter

Rush, A. J., Trivedi, M. H., Wisniewski, S. R., Nierenberg, A. A., Stewart, J. W., Warden, D., & Fava, M. (2021). STAR*D: Sequenced Treatment Alternatives to Relieve Depression study results. *American Journal of Psychiatry*, *178*(4), 345-357.

Rush, A. J., Trivedi, M. H., Wisniewski, S. R., Nierenberg, A. A., Stewart, J. W., Warden, D., ... & Fava, M. (2006). Acute and longer-term outcomes in depressed outpatients requiring one or several treatment steps: a STAR* D report. *American Journal of Psychiatry*, *163*(11), 1905-1917. https://doi.org/10.1176/ajp.2006.163.11.1905

Simon, G. E., Rutter, C. M., Peterson, D., Oliver, M., Whiteside, U., Operskalski, B., & Ludman, E. J. (2019). Does cognitive behavioral therapy improve adherence to antidepressant medication? *American Journal of Psychiatry*, *176*(6), 498-505.

Vieta, E., Salagre, E., Grande, I., Carvalho, A. F., Fernandes, B. S., Berk, M., ... & Suppes, T. (2018). Early intervention in bipolar disorder. *American Journal of Psychiatry*, *175*(5), 411-426. https://doi.org/10.1176/appi.ajp.2017.17090972

Vittengl, J. R., Clark, L. A., Thase, M. E., & Jarrett, R. B. (2021). Long-term outcomes of cognitive therapy and antidepressant medication in major depressive disorder: A randomized clinical trial. *Journal of Consulting and Clinical Psychology*, *89*(2), 168-178.

Weitz, E. S., Hollon, S. D., Twisk, J., Van Straten, A., Huibers, M. J., David, D., ... & Cuijpers, P. (2015). Baseline depression severity as moderator of depression outcomes between cognitive behavioral therapy vs pharmacotherapy: an individual patient data meta-analysis. *JAMA psychiatry*, *72*(11), 1102-1109.

Williams, L. M., Rush, A. J., Koslow, S. H., Wisniewski, S. R., Cooper, C. M., Nemeroff, C. B., & Trivedi, M. H. (2022). Depression treatment strategies: Addressing adherence and treatment resistance. *Molecular Psychiatry*, *27*(5), 301-312.

World Health Organization (WHO). (2020). *Depression and other common mental disorders: Global health estimates.* Geneva: WHO Press.