REVIEW ARTICLE

• Article No: 16

Turkish Journal of Psychiatry (2026) **37**:138–160
https://doi.org/10.5080/u27872

Psychiatric Association of Türkiye Mood Disorders Section Depression Treatment Guideline – III: Treatment Approach for Depression Subtypes and Special Groups, Psychotherapies, and Psychosocial Interventions

Ömer AYDEMİR[1], Fisun AKDENİZ[2], Burcu ÖZBARAN[3], Ceren Meriç ÖZGÜNDÜZ[4], Hakan KARAŞ[5], Halise DEVRİMCİ ÖZGÜVEN[6], Hazal YAĞMUR YILANCIOĞLU[7], Müge ALKAN[8], Özlem EKER[9], Ömer Faruk UYGUR[10], Safiye Zeynep TATLI[11], Simge UZMAN ÖZBEK[12], Şevin HUN ŞENOL[13], Vesile ŞENTÜRK CANKORUR[14], Yağmur KIR[15], Aslı Ceren HINÇ[16], Beyza ERDOĞAN AKTÜRK[17], İlkay KELEŞ ALTUN[18], Kaan KESKİN[19], Okan GÖRKEM[20], Rukiye TEKDEMİR[21], Ece Özlem ÖZTÜRK[22], İsmail BUÇGÜN[23], Deniz CEYLAN[24], Hidayet Ece ARAT ÇELİK[25], Mehmet Çağdaş EKER[26], Mete ERCİS[27], Şükrü Alperen KORKMAZ[28], Vesile ALTINYAZAR[29], Emre BORA[30]

ABSTRACT

This guideline article comprehensively examines pharmacological approaches and psychosocial interventions for depression subtypes and special patient groups in the treatment of major depressive disorder (MDD), along with their levels of evidence. Among depression subtypes, the approach with the highest level of evidence for psychotic depression is the combination of an antipsychotic with an antidepressant, whereas in atypical depression, despite a lack of new research, monoamine oxidase inhibitors (MAOI) have shown the most prominent efficacy compared to placebo. In melancholic depression, the response to selective serotonin reuptake inhibitors (SSRI) has been found to be low. Tricyclic antidepressants (TCAs) and serotonin noradrenaline reuptake inhibitors (SNRI) stand out, and electroconvulsive therapy (ECT) plays a more important role in this population due to the low antidepressant response. For mild depression in children and adolescents, the first step is evidence-based psychotherapies (cognitive behavioral therapy

How to cite: Aydemir Ö, Akdeniz F, Özbaran B et al. (2026) Psychiatric Association of Türkiye Mood Disorders Section Depression Treatment Guideline – III: Treatment Approach for Depression Subtypes and Special Groups, Psychotherapies, and Psychosocial Interventions. *Turk Psikiyatri Derg* **37**:138–160. https://doi.org/10.5080/u27872

Received: 15.12.2025, **Accepted:** 15.03.2026, **Publication Date:** 20.07.2026

[1]Prof., Manisa Celal Bayar University Faculty of Medicine, Department of Psychiatry, Manisa; [2]Prof., Private Practice, Psychiatry, İzmir; [3]Prof., Ege University Faculty of Medicine, Department of Child and Adolescent Psychiatry, İzmir; [4] Asst. Prof., Acıbadem University Maslak Hospital, Department of Psychiatry, İstanbul; [5]Assoc. Prof., Private Practice, Psychiatry, İstanbul; [6]Prof., Private Practice, Psychiatry, Ankara; [7]M.D., İzmir Bakırçay University Çiğli Training and Research Hospital, Department of Child and Adolescent Psychiatry, İzmir; [8]Dr.,, Private Practice, Psychology, İzmir; [9]M.D., Private Practice, Psychiatry, İzmir; [10]Assoc. Prof., Atatürk University Faculty of Medicine, Department of Psychiatry, Erzurum; [11]M.D., Ankara Etlik City Hospital, Psychiatry Division, Ankara; [12]M.D., Kastamonu Training and Research Hospital, Department of Psychiatry, Kastamonu; [13]M.D., Koç University Hospital, Department of Psychiatry, İstanbul; [14]Prof., Ankara University Faculty of Medicine, Department of Psychiatry, Ankara; [15]Asst. Prof, Ankara University Faculty of Medicine, Department of Psychiatry, Ankara; [16]Psychiatrist, İzmir City Hospital, Psychiatry Division, İzmir; [17]Psychiatrist, Tarsus State Hospital, Psychiatry Division, Mersin; [18]Assoc. Prof., University of Health Sciences Bursa Yüksek İhtisas Training and Research Hospital, Department of Psychiatry, Bursa; [19]Psychiatrist, Ege University Faculty of Medicine, Department of Psychiatry, İzmir; [20]Psychiatry Resident, Ege University Faculty of Medicine Hospital, Department of Psychiatry, İzmir; [21]Asst. Prof., Selçuk University Faculty of Medicine, Department of Psychiatry, Konya; [22]Psychiatrist, Trabzon Kanuni Training and Research Hospital, Department of Psychiatry, Trabzon; Dokuz Eylül University Institute of Health Sciences, Department of Neuroscience, İzmir; [23]Psychiatrist, Private Practice, Psychiatry, Adana; [24]Assoc. Prof., Koç University Faculty of Medicine, Department of Psychiatry; Mayo Clinic, Department of Psychiatry & Psychology, İstanbul; [25]Assoc. Prof., Maltepe University Faculty of Medicine Hospital, Department of Psychiatry, İstanbul; [26]Prof., Ege University Faculty of Medicine, Department of Psychiatry, İzmir; [27]Psychiatrist, Mayo Clinic, Department of Psychiatry & Psychology, Rochester; [28]Assoc. Prof., Çanakkale Onsekiz Mart University Faculty of Medicine, Department of Psychiatry, Çanakkale; [29]Prof., Aydın Adnan Menderes University Faculty of Medicine, Department of Psychiatry, Aydın; [30]Prof., Dokuz Eylül University Faculty of Medicine, Department of Psychiatry, İzmir

Ömer Aydemir, e-mail: soaydemir@gmail.com

[CBT], interpersonal psychotherapy [IPT]). When pharmacotherapy is necessary, the U. S. Food and Drug Administration (FDA)-approved SSRIs are recommended as the first-line agent for those aged 8 and above; however, close follow-up is essential during the first weeks of treatment due to the increased risk of suicidal ideation. In the elderly, antidepressant efficacy decreases after age 65. Cognitive behavioral therapy and life review therapy, along with ECT and transcranial magnetic stimulation (TMS), are important treatment options. For perinatal depression, psychotherapy (CBT) is recommended for mild to moderate depression during pregnancy or lactation, depending on the mother's preference. When deciding on pharmacotherapy, the risk-benefit balance of untreated depression and medications must be carefully considered. Comorbid conditions are another group of depression warranting attention regarding treatment options. In cases of comorbid anxiety disorders, SSRI/SNRIs and CBT stand out as the first choices. For comorbid alcohol/substance use disorder, SSRIs are recommended first-line in most cases. Concurrent psychosocial interventions such as CBT or motivational interviewing should be added to pharmacotherapy. For comorbid physical illnesses, medication selection depends on the affected organ system. Examining psychotherapy options, Cognitive Behavioral Therapy (CBT) and Interpersonal Psychotherapy (IPT) are the approaches with the highest level of evidence in MDD treatment. Cognitive behavioral therapy is similar in efficacy to pharmacotherapy in the acute phase but is more protective in the long term. Cognitive Behavioral Analysis System of Psychotherapy (CBASP) is recommended for chronic depression, and Mindfulness-Based CBT (MB-CBT) is suggested for recurrence prevention. Suicide is the most important issue in depression. The patient's suicide risk should be routinely assessed; antidepressants, proven to reduce suicidal behavior, must be used under close surveillance during the first weeks in young people due to the increased risk. Lifestyle adjustments also support existing treatment. Lifestyle modifications such as the Mediterranean diet, regular exercise, and sleep hygiene are fundamental components of depression treatment. Recently introduced telemedicine applications show similar efficacy to face-to-face treatments and improve access to care.

Keywords: Depression subtypes, major depressive disorder treatment, treatment in comorbid conditions, treatment in special groups, psychotherapy interventions

INTRODUCTION

Although antidepressants have generally been shown to be effective in the treatment of depression (Cipriani et al. 2018), certain medications are more prominent in specific subtypes of depression and in some special clinical populations. The first section of this article discusses the selection of antidepressants for different subtypes of depression, supported by evidence. The treatment of depression in specific groups is then addressed. The second section of the article presents psychotherapies used in depression, along with the supporting evidence. Finally other psychosocial interventions for depression are reviewed.

TREATMENT IN DIFFERENT SUBTYPES OF DEPRESSION

Depression with psychotic features

Although depression with psychotic features is the most extensively studied group among depression subtypes, its treatment has not received sufficient attention in research. A recent meta-analysis reviewed the results of randomized controlled trials in psychotic depression (Oliva et al. 2024). This meta-analysis indicated that the most effective treatment options for psychotic depression may be a combination of selective serotonin reuptake inhibitors (SSRIs) with a second-generation antipsychotic, particularly the combination of fluoxetine and olanzapine. Due to the scarcity of placebo-controlled studies, there is insufficient evidence regarding the efficacy of other treatments. In studies comparing active treatments, the combination of amitriptyline with perphenazine was more effective than perphenazine alone; the combination of fluoxetine with olanzapine was found to be more effective than olanzapine alone. Venlafaxine, as well as the combination of venlafaxine with quetiapine and imipramine, has also been found to be effective compared to other treatment options. In general, combinations of antipsychotics with antidepressants are more effective than the use of antipsychotics or antidepressants alone (Kruizinga et al. 2021, Oliva et al. 2024).

It is known that the presence of psychotic features in depression is a significant predictor of response to electroconvulsive therapy (ECT). A meta-analysis has shown that depression with psychotic features is associated with an increased response to ECT compared to non-psychotic depression (van Diermen et al. 2018).

Table 1. Treatment options in psychotic depression

Efficacy	Treatment
High	Antidepressant + Antipsychotic Fluoxetine + Olanzapine ECT
Medium	Venlafaxine, imipramine
Low	SSRI or antipsychotic monotherapy
Differences in treatment compared to non-psychotic depression	

ECT: electroconvulsive therapy; SSRI: selective serotonin reuptake inhibitor
For optimal treatment, ECT or the combination of antipsychotics and antidepressants are needed.
Venlafaxine, imipramine and other antidepressants might be more important for optimal treatment but further research is needed in this subject.

Table 2. Treatment options in atypical depression

Efficacy	Treatment
Medium	Phenelzine
Low	Sertraline, moklobemid, fluoxetine and imipramine, CBT
Differences in treatment compared to typical depression	

CBT: cognitive behavioral therapy. MAO inhibitors appear to be the preferred option for optimal treatment; however, the lack of studies on newer-generation antidepressants and issues regarding the quality of existing studies mean that the situation remains unclear.

Depression with atypical features

Interest in treatment studies for depression with atypical features has declined in recent years, and the number of newly published studies is limited. A recent meta-analysis reviewed the results of randomized controlled trials for depression with atypical features (Fornaro et al. 2025). In placebo-controlled trials, the most pronounced efficacy was observed for phenelzine. Phenelzine, sertraline, moclobemide, fluoxetine, and imipramine are associated with higher response rates compared to placebo. Phenelzine, moclobemide, isocarboxazid, imipramine, selegiline, sertraline, and fluoxetine were found to be more effective than nortriptyline. However, the quality of existing studies is low. There is a significant lack of studies on newer antidepressants regarding the treatment of depression with atypical features. Cognitive-behavioral therapy (CBT) may also be effective in depression with atypical features, but there are very few studies on this topic (Cuijpers et al. 2017).

Depression with melancholic features

A study involving approximately 4.000 participants, the STAR*D trial, demonstrated that the response rate to citalopram at 4 months was significantly lower in depression with melancholic features (26.9%) compared to non-melancholic depression (53.9%) (Szmulewicz et al. 2024). A meta-analysis conducted by Valerio et al. (2018) demonstrated that the remission rate in depression with melancholic features was significantly lower than in non-melancholic depression. Additionally, findings suggest that patients with depression exhibiting melancholic features respond to ketamine infusion at a lower rate compared to those without such features (Wang et al. 2019).

The same meta-analysis showed that SSRIs are associated with lower remission rates in melancholic depression compared to tricyclic antidepressants (TCAs). A small number of studies have shown that venlafaxine is more effective than fluoxetine in melancholic depression (Clerc et al. 1994, Tzanakaki et al. 2000). It has been suggested that duloxetine may be as effective in depression with melancholic features as it is in non-melancholic depression (Mallinckrodt et al. 2005). Cognitive behavioral therapy may also be effective in depression with melancholic features; however, the number of studies on this topic is quite limited (Cuijpers et al. 2017).

Electroconvulsive therapy is also effective for melancholic depression. However, a meta-analysis of seven studies did not support the notion that melancholic features are associated with an enhanced response to ECT (van Diermen et al. 2018). Nevertheless, given the low response rates to antidepressants in this population, ECT is still considered an important option for melancholic depression.

On the other hand, there are differences among studies regarding how melancholic depression is defined, and this might affect the results.

Table 3. Treatment options in melancholic depression

Efficacy	Treatment
High	ECT
High	Tricyclic antidepressants
Low-Medium	Venlafaxine, Duloxetine, CBT
Low	Antidepressants Citalopram Ketamine
Differences in treatment compared to non-melancholic depression	

ECT: electroconvulsive therapy; CBT: cognitive behavioral therapy. The response to antidepressants is relatively low. ECT, however, is as effective as it is in non-melancholic depression. For this reason, ECT is relatively more important.
Tricyclic and potent antidepressants may offer a relative advantage for optimal treatment. However, further studies are needed for SNRI medications.

TREATMENT OF DEPRESSION IN SPECIAL POPULATIONS

Treatment of depression in children and adolescents

In the diagnostic and treatment processes for depression in children and adolescents, it is of great importance to consider the patients' developmental stages. Unlike in adults, careful review of family and social environment histories is required (Tao et al. 2010). Treatment for depression should not be limited solely to managing depressive symptoms; it must also aim to enhance young people's social and emotional development, thereby improving their academic and social adjustment. For cases of mild depression, first-line interventions should include information provision, guided self-help, psychoeducation, and supportive psychotherapy (Luxton and Kyriakopoulos 2022).

In cases of non-treatment-resistant depression, as no significant superiority has been observed between pharmacotherapy and psychotherapy, evidence-based psychotherapeutic approaches (Cognitive Behavioral Therapy [CBT], Interpersonal Therapy [IPT]) are recommended as the first-line treatment for mild depression (Walter et al. 2023). For children and adolescents with moderate depression, current guidelines present different treatment sequences; therefore, a patient-centered, individualized approach to care should be adopted. While psychotherapeutic interventions are prioritized, pharmacological support may be provided when necessary (MacQueen et al. 2016).

When pharmacological treatment is required, fluoxetine is recommended as the first-line pharmacological agent. It has been shown to be superior to placebo in the pediatric population and is approved by the U. S. Food and Drug Administration (FDA) for use in individuals aged 8 and older (Cipriani et al. 2016). However, due to the risk of increased suicidal

thoughts during the initial weeks of SSRI treatment, close monitoring, ideally on a weekly basis, is essential, particularly during the first four weeks of treatment (Bridge et al. 2007, Hetrick et al. 2012b). Since untreated depression can lead to more serious psychiatric risks, pharmacotherapy should be administered with careful monitoring when indicated. During pharmacotherapy, a minimum of four weeks should elapse before considering dose escalation. If there is no response after 12 weeks of treatment at an adequate dose, a change in the pharmacological agent should be considered. In cases of treatment-resistant or severe depression, Electroconvulsive Therapy (ECT) is recommended as an option that can be used cautiously in adolescents aged 12 and older (Gautam et al. 2019).

It is recommended that treatment for depression be continued for at least 6 to 12 months. Discontinuation of treatment should be gradual and planned during periods when stressors are relatively minimal (NICE, 2019). In cases of treatment resistance, it is necessary to review the current diagnosis, assess for comorbid mental disorders, and address factors such as family dynamics, peer bullying, and concerns related to sexual identity (Walter et al. 2023).

It should be remembered that childhood and adolescence may represent a prodromal phase for psychiatric disorders that can emerge in adulthood. Current depression treatment guidelines do not sufficiently address the possibility that the presenting depression may be the initial episode of a potential bipolar disorder. Furthermore, adolescent depression has been shown to be a strong predictor of depression in early adulthood (MacQueen et al. 2016). Therefore, effectively treating depression and minimizing functional impairment are critically important for enabling adolescents to complete their developmental processes healthily. The transition period from adolescence to adulthood is a phase that must not be overlooked in depression treatment. To prevent treatment interruption and relapse, a personalized treatment plan should be developed for each patient, and the coordination of the treatment process should be tailored to individual needs (NICE 2019, Luxton and Kyriakopoulos 2022).

Old age and the treatment of depression

Depression remains one of the leading causes of morbidity in old age. Since depression in old age is thought to have unique characteristics, it is often described using terms such as "depression in old age," "geriatric depression," and "late-life depression." The concept of depression in the elderly encompasses a heterogeneous clinical group that includes both early-onset and late-onset cases. Early-onset depression in the elderly is not etiologically distinct from adult depression; however, it may require a different approach due to age-specific issues such as coexisting physical illness, loss, grief, and loneliness. Late-onset depression in the elderly may differ etiologically from adult depression. Late-onset depression is frequently associated with vascular changes and neurodegenerative processes and is characterized by more pronounced and persistent cognitive impairment and apathy.

Pharmacological treatments for late-life depression

Evidence from meta-analyses on depression in older adults indicates that antidepressants are effective when the cutoff age in studies is set at 55. Still, their efficacy decreases significantly when the cutoff age is set at 65 (Tedeschini et al. 2011, Mallery et al. 2019). In older adults, only about half of patients experience partial or full recovery following antidepressant treatment (Kok et al. 2012, Gutsmiedl et al. 2020). There is evidence that a long-standing history of depression (early-onset) in older adults is associated with a good response to antidepressants, whereas short-term (new-onset) depression does not respond to antidepressants (Nelson et al. 2013). There is meaningful but weak evidence that ketamine and aripiprazole increase the remission rates of ongoing treatments in treatment-resistant depression (Larsen et al. 2025).

Psychotherapies for late-life depression

Cognitive behavioral therapy and similar approaches, mindfulness therapy, and life review therapy are effective and highly acceptable for treating late-life depression (Ji et al. 2023, Lin et al. 2024). In terms of evidence level, psychotherapies appear to be as effective for late-life depression as they are for depression in adults. The most significant difference specific to older adults is that life review therapy is one of the primary psychotherapies used in this age group. Given that there is a lower response rate to antidepressants in late-life depression and that the risk of side effects from psychopharmacological treatments increases in older adults, psychotherapies should be considered a relatively more prominent option, particularly for mild-to-moderate depression. However, the shortage of trained personnel to provide psychotherapy services in older adults is a practical barrier to implementing this recommendation.

Brain stimulation treatments for late-life depression

Studies indicate that ECT is notably effective in the treatment of late-life depression and is more effective than psychopharmacological treatment. The response to ECT appears to be associated with a better outcome compared to depression in older adults (Meyer et al. 2018, Lisanby et al. 2020). This effect can be partially explained by the presence of psychotic symptoms and psychomotor retardation (Jelovac et al. 2025). Although ECT in older adults is associated with a short-term risk of delirium and cognitive side effects, it is not associated with permanent cognitive impairment in the long term (Osler et al. 2018).

When reviewing meta-analysis-based evidence for depression in older adults, transcranial magnetic stimulation (TMS) treatment was found to be effective and highly tolerable (Zhang et al. 2023). The level of evidence regarding the use of TMS treatment for depression in older adults is comparable to that for depression in adults.

Table 4. Treatment of late-life depression

Efficacy	Treatment
High	ECT
Medium	Antidepressants (in early-onset cases or when cut off age is 55 for late-onset) TMS CBT, Life Review Therapy
Low	Antidepressants (Late-onset cases when cut off age is 65) Ketamine Aripiprazole
Differences in treatment compared to adult depression	
Better response to ECT. Among psychotherapies, life review therapy is relatively more important in older patients. Poorer response to antidepressants (Particularly in late-onset cases).	

Treatment of major depression during pregnancy and breastfeeding

The treatment of major depressive disorder (MDD) in women of reproductive age should be addressed separately across three periods: preconception, during pregnancy, and the postpartum period. Depression during pregnancy and after childbirth is highly significant because it affects both the mother and the fetus/infant. When making treatment decisions, the risks and benefits of untreated depression (including emotional and developmental effects on fetus/infant) must be weighed against the potential effects of treatment interventions. Treatment planning should consider the patient's history, family history, risk factors, support systems, and both mental and obstetric conditions, and may include pharmacotherapy and/or psychotherapy.

Screening and Assessment: During pregnancy and the postpartum period, depression screening is commonly assessed by using the Edinburgh Postnatal Depression Scale and the Patient Health Questionnaire-9 (PHQ-9) (Falek et al. 2022, COPE 2023, Simas et al. 2023, Vigod et al. 2025).

Treatment: Many expecting mothers prefer psychotherapy due to concerns that medications may harm the baby. Clinical guidelines also recommend psychotherapy for mild depression, or regardless of severity if preferred by the mother. Pharmacological treatment is recommended for moderate to severe depression or when psychotherapy is not accessible (ACOG 2023). Tables 5 and 6 summarize data on depression treatment during pregnancy and breastfeeding.

Psychotherapies: According to treatment guidelines, cognitive behavioral therapy (CBT) has the strongest evidence base and is considered first-line treatment (Molenaar et al. 2018, COPE, 2023). CBT, which is the most effective psychological intervention for postpartum depression, can be delivered individually, in groups, or via internet-based formats (Branquinho et al. 2021, Vigod et al. 2025). Other therapies (e.g., interpersonal therapy and third-wave therapies) are not recommended as first-line treatments due to lower levels of evidence (Vigod et al. 2025).

Pharmacological Treatments: The benefits and risks of treatment must be carefully balanced. Abrupt discontinuation of medications in unplanned pregnancies may lead to complications. During pregnancy, medications without teratogenic risk are preferred, and during breastfeeding, medications with minimal or no adverse effects on the infant are recommended. Table 5 provides a detailed analysis of the risks and benefits of antidepressants. The most significant concern is the association between first-trimester exposure to paroxetine and cardiac malformations (Fabiano et al. 2025). The relationship between psychotropic medications and autism is more complex and is generally considered to be more strongly associated with maternal depression itself, as well as genetic and environmental factors, rather than medication use alone (Heuvelmen et al. 2023, Lee et al. 2024).

Synthetic allopregnanolone derivatives such as brexanolone (intravenous) and zuranolone (oral) have been shown to be effective in treating postpartum depression (Oliveira et al. 2024). However, due to insufficient data to date, they are not yet included in treatment guidelines.

Other Treatments: Repetitive transcranial magnetic stimulation (rTMS) is a rapid and safe option for patients who prefer not to use psychotropics; however, as noted in many treatment guidelines, the level of evidence remains limited (Miuli et al. 2023, COPE 2023, Riseup -PPD 2023, Vigod et al. 2025). In cases of severe depression with or without psychotic features, electroconvulsive therapy (ECT) is both rapid and effective and is included in all major depression treatment guidelines to date (NICE 2020, ACOG 2023, COPE 2023, Vigod et al. 2025).

Conclusion: Given the limitations of available evidence, current data should be carefully reviewed in each individual case when evaluating treatment recommendations.

Depression among refugees

Forced migration is a complex stressor that exposes individuals to repeated trauma, significantly affecting their mental health. Depression is among the most common psychiatric disorders in refugee populations, and it frequently co-occurs with anxiety and post-traumatic stress disorder (Bedaso and Duko, 2022). Previous meta-analyses have shown that depressive disorders are much more prevalent among refugees and asylum seekers than in the general population, with global estimates approaching 30% (Bedaso and Duko, 2022).

Table 5. Benefits and risks of antidepressant treatment during pregnancy and breastfeeding (Desaunay et al. 2023, Eleftheriou et al. 2024, Fabiano et al. 2025, Vigod et al. 2025)

Medication	Benefits	Risks
During pregnancy	Lower relapse rates in those who continue antidepressant (AD) treatment during pregnancy Risk of congenital anomalies comparable to those not using medication Long-term follow-up studies have not demonstrated neurodevelopmental problems	It is not possible to conclude that there is no risk based on current data Pregnancy complications: spontaneous abortion, postpartum hemorrhage Congenital malformations: particularly cardiac malformations associated with first-trimester exposure to paroxetine Fetal growth: slight reduction in gestational duration (approximately 1 week) and a decrease in birth weight of less than 100 grams Neonatal complications: rarely observed in third-trimester exposure to SSRIs or SNRIs, including neonatal withdrawal or serotonergic syndrome
During breastfeeding	Infant exposure via breast milk is lower compared to in utero exposure during pregnancy Effective treatment of maternal depression supports healthy mother–infant bonding Considered safe if the milk/plasma ratio is below 1% (e.g., sertraline, fluoxetine, paroxetine, duloxetine)	Higher likelihood of adverse effects in premature infants Possible irritability, sedation, or increased risk of infant colic Case reports associated with fluoxetine Restlessness reported with paroxetine and sertraline Hypotonia reported with venlafaxine Not recommended or requires close monitoring if the relative infant dose (RID) exceeds 10%

SSRI: selective serotonin reuptake inhibitor, SNRI: serotonin noradrenaline reuptake inhibitor

The causes of depression among refugees are complex and involve both pre- and post-migration stressors. Experiences such as violence, displacement, and loss before migration, combined with challenges such as unemployment, discrimination, social marginalization, and ongoing uncertainty after migration, increase vulnerability to depression (Strupf et al. 2023). Sociodemographic and psychosocial factors, including age, sex, and social support, significantly affect the onset and severity of depressive disorders. Evidence indicates that female refugees and those with limited social support have higher rates of depression (Bedaso and Duko, 2022). For younger refugees, educational disruption and exclusion from the labor market are key risk factors, whereas for older refugees, comorbid physical illnesses and social isolation are more strongly linked to depression (Kuittinen et al. 2017, Hodes 2023).

Several evidence-based interventions have been developed to address depression in refugees. Multicenter randomized controlled trials have shown that stepwise care models and group-based psychotherapeutic interventions effectively reduce depressive symptoms (Böge et al. 2022). Group interventions that target social isolation also improve psychological well-being and support social integration (Strupf et al. 2023). The World Health Organization's low-intensity psychological interventions, especially the Problem Management Plus program, are scalable, cost-effective, and adaptable to various settings, including those with limited resources (WHO, 2016). Systematic reviews have confirmed that culturally adapted cognitive behavioral therapies significantly reduce depressive symptoms in refugee populations (Uhr et al. 2025).

In summary, depression among refugees is common, complex, and influenced by cultural factors. Addressing this issue requires the integration of culturally sensitive approaches into mental health services, expanding access to evidence-based psychosocial interventions, and strengthening social support systems. These actions are essential to reduce negative mental health outcomes in this vulnerable population.

TREATMENT OF DEPRESSION IN COMORBID CONDITIONS

Comorbidity of depression and anxiety disorders

Comorbidity of depression and anxiety disorders has been shown to negatively affect several clinical parameters, including suicide risk, treatment adherence, time to response, and overall treatment effectiveness (van Bronswijk et al. 2018).

Table 7 below aims to guide clinicians in developing individualized and stepped-care approaches by classifying interventions according to their order of recommendation. The ranking of recommendations was determined not only by the level of evidence, but also by considerations such as clinical applicability, generalizability, safety profile, and local regulatory approval status. Thus, the approach is grounded not only in scientific evidence but also in considerations of integration into the local healthcare system, ensuring that it remains both realistic and applicable.

For example:

- **Quetiapine (augmentation):** Supported by placebo-controlled randomized controlled trials (RCTs) (level of evidence [LoE]=1); however, due to sedative and metabolic side effects and limited clinical applicability, it was assigned a recommendation level of 2.
- **Pregabalin (augmentation):** Although supported by a high-quality RCT (LoE=1), the evidence is limited to SSRI non-responders and to its use as an augmentation strategy, which restricts its generalizability; therefore, it was assigned a recommendation level of 2.

Table 6. International treatment guidelines for perinatal depression (guidelines published between 2020-2025)

Treatment guidelines	Content	Preparation methods	Preconception recommendations	Recommendations during pregnancy	Recommendations after childbirth
Canadian Network for Mood and Anxiety Disorders (CANMAT) 2024 (Vigod et al. 2025)	Diagnosis, assessment, intervention, and treatment of peripartum depression and anxiety disorders Recommendations regarding the mental health of fathers as well	Canada A treatment guideline developed and refined through discussion by 15 experts	Pregnancy should be planned	Psychotherapy: CBT, behavioral activation, interpersonal therapy and mindfulness based therapies (First line recommendation and the evidence level is high) With moderate and severe depression: pharmacotherapy is recommended. First line: sertraline, citalopram, escitalopram With psychotic features and high risk of suicide ECT is the first line treatment. rTMS: not enough evidence therefore it is not among the treatment options. Even though evidence level is low, yoga is among recommendations.	Medication used during pregnancy should be continued in the postpartum period. First-line pharmacological options are sertraline (higher level of evidence), escitalopram, and citalopram. ECT is indicated in cases with psychotic features or suicide risk; it is not a contraindication to breastfeeding. Repetitive TMS may be considered as an adjunct to antidepressant medication (low level of evidence).
French Society for Biological Psychiatry and Neuropsychopharmacology and French speaking Marce Society guidelines 2024 (Belzeaux et al. 2024)	Preconception, pregnancy, after childbirth	France Expert opion of 61 French psychiatrists	Selecting non-teratogenic medications for both acute and maintenance treatment Providing information to the patient and their partner about contraception methods and medications Pregnancy testing prior to prescribing any medication	Suicide risk and substance use should be assessed Medications with the lowest teratogenic risk should be preferred Medication should not be discontinued abruptly in cases of unplanned pregnancy ECT: first-line in cases of depression with catatonic features or treatment resistant	Medication selection should be based on Hale's lactation risk categories First-line options should be medications in categories L1 and L2 Both mother and father should be informed about the transfer of medications into breast milk
American College of Obstetricians and Gynecologists (ACOG) Clinical Practice Guideline 2023	Screening, assessment, maintenance and treatment of depression, anxiety disorders and bipolar disorder during perinatal period	USA The American College of Obstetricians and Gynecologists Clinical Practice Guideline Development Committee, along with two external subject-matter experts		General principles: use the lowest effective dose, avoid polypharmacy, and exercise caution when switching medications. Evaluate the potential risks of untreated illness. Psychotherapy should be the first-line treatment for mild to moderate depression. For pharmacotherapy, prefer an SSRI that has previously been effective (if initiating treatment for the first time, sertraline or escitalopram).	The mother should be encouraged to breastfeed. When initiating medication, the degree of transfer into breast milk should be considered. Psychotherapy should be the first-line treatment for mild to moderate depression. Medication should be selected based on the RID (relative infant dose). Brexanolone can be used in the last trimester of pregnancy and in the postpartum period.
Centre of Perinatal Excellence (COPE) 2023 Mental health care in perinatal period Australian Clinical Practice Guideline	Pregnancy planning, illness assessment during pregnancy, and treatment for women with depression, anxiety disorders, bipolar disorder, schizophrenia, and borderline personality disorder	Australia Recommendations are presented based on evidence and expert consensus	Preconception screening for depression and anxiety Discussion of the management of pre-existing mental illness before pregnancy	Screening for depression and anxiety during pregnancy Psychoeducation Psychotherapy: CBT and IPT are first-line Omega-3 has no proven benefit An SSRI that has previously been effective should be selected Benzodiazepine use: prefer short-acting agents For hypnotic use: doxylamine	Screening for depression and anxiety at 6–12 weeks postpartum Difficulties in mother–infant bonding should be identified and appropriate guidance provided Suicide risk should be assessed CBT and IPT are first-line treatments SSRIs are the first-line antidepressants ECT: for those not responding to antidepressant treatment, with psychotic features, or at high suicide risk

Table 6 continues. International treatment guidelines for perinatal depression (guidelines published between 2020-2025)

Treatment guidelines	Content	Preparation methods	Preconception recommendations	Recommendations during pregnancy	Recommendations after childbirth
NHS Scotland Perinatal Health Conditions (SIGN) 2023	Care and treatment of women with mental illness during their reproductive years, including pregnancy and the postpartum period Treatment of individuals with depression, anxiety disorders, bipolar disorder, schizophrenia, and borderline personality disorder	Scotland Perinatal and Infant Mental Health Programme Board	Education on effective contraception methods Planning of pregnancy and breastfeeding	Screening for depression and anxiety disorders should be conducted during pregnancy Birth trauma, borderline personality disorder, suicide risk, and psychosocial factors should be assessed Clinicians should keep themselves updated on medication side effects Close collaboration with primary care physicians In medication selection: choose the lowest-risk option, use the lowest effective dose, and prefer monotherapy Infants exposed to medication should be closely monitored at birth	In medication selection, the baby's development and the stage of pregnancy should be taken into account ECT: for severe cases and patients with high suicide risk
PanEuropean Network in Peripartum Depression Disorder (RISEUP-PPD) 2023	Assessment, prevention, and treatment of peripartum depression Neurophysiological and imaging studies	European Union Project Experts in the field from all European Union countries Six working groups	Prevention of depression in high-risk groups	CBT is the first-line treatment with the highest level of evidence Although the level of evidence is low, antidepressants may be used in selected patients In patients with severe and recurrent depression, antidepressants should not be discontinued Prefer monotherapy and low-dose antidepressants Due to low level of evidence, rTMS is a weak recommendation Pregnant patients receiving medication should be monitored closely and thoroughly If depression is severe and life-threatening, ECT is the first-line treatment Bright light therapy is not recommended due to insufficient evidence	CBT is the first-line treatment with the highest level of evidence Antidepressants may be used when necessary with close monitoring Due to the low level of evidence, rTMS is a weak recommendation ECT is the first-line treatment in life-threatening situations Bright light therapy is not recommended due to insufficient evidence
National Institute for Health and Care Excellence (NICE) 2020	Preconception Pregnancy Postpartum Monitoring and treatment of mental disorders Specialist training in the management of mental disorders	United Kingdom Prepared by a group called the National Collaborating Centre for Mental Health	All women with mental illness should be educated about contraception methods	Data on the safety are limited and insufficient Psychotherapy: CBT	Psychotherapy: CBT (first-line) Data on medication safety during breastfeeding are limited

CBT: cognitive behavioral therapy; ECT: electroconvulsive therapy; IPT: interpersonal therapy; RID: relative infant dose; SSRI: selective serotonin reuptake inhibitor; TMS: transcranial magnetic stimulation.

• **Brexpiprazole:** Although supported by Phase 3 RCT data (LoE=1), the available evidence is based on analyses focusing on dimensional anxiety symptoms rather than on patients with a diagnosed comorbid anxiety disorder, resulting in a recommendation level of 2.

• **Cariprazine:** Although supported by level 1 evidence, only individuals with high anxiety symptoms were included in the study, without formal comorbid anxiety disorder diagnoses; therefore, it was assigned a recommendation level of 2.

• **Tandospirone:** Despite evidence from a RCT (LoE=2), it is not licensed or available in Türkiye; therefore, it was assigned a recommendation level of 3.

• **ECT and tDCS:** Direct RCT evidence is lacking in patients with depression and comorbid anxiety disorders. Accordingly, these interventions were classified as LoE=3 and recommendation level=3, and are suggested only as adjunctive options in treatment-resistant and individualized cases.

Conclusion and recommendations

Findings from the literature review indicate that SSRI/SNRI antidepressants and CBT stand out as effective interventions targeting both depressive and anxiety symptoms.

However, in many studies conducted in individuals with depression, anxiety symptoms were either not assessed or were addressed only in subgroup analyses. In some studies, participants with depression and co-occurring anxiety symptoms, rather than those with a formal comorbid anxiety disorder diagnosis, were included. This limits the number

Table 7. Treatment of depression with comorbid anxiety symptoms/anxiety disorders

Recommendation level	Level of evidence (LoE)	Intervention	Tolerability
1	1	Escitalopram	Good
	1	Sertraline	Good
	1	Fluoxetine	Good
	1	Paroxetine	Moderate
	1	Venlafaxine XR	Moderate
	1	Aripiprazole (augmentation)	Good
	1	rTMS	Good
	1	Cognitive Behavioral Therapies (face-to-face, transdiagnostic, rumination-focused, internet-based)	Good
	2	Duloxetine	Moderate
2	1	Bupropion	Good
	1	Quetiapine (augmentation)	Moderate
	1	Pregabalin (augmentation)	Good
	1	Brexpiprazole (augmentation)	Good
	1	Cariprazine (augmentation)	Good
	2	Citalopram	Good
	2	Mirtazapine	Good
	2	Vortioxetine	Good
	2	Agomelatine	Good
	2	Reboksetine	Moderate
	2	Ketamine (monotherapy)	Moderate; monitoring required due to dissociation and cardiovascular effects
	2	Esketamine (augmentation)	Moderate; monitoring required due to dissociation and cardiovascular effects
	2	Benzodiazepines (monotherapy/augmentation)	Good; use with caution due to risk of dependence
	2	Aerobic exercise	Good
	3	Fluvoxamine	Good
	3	Buspirone (augmentation)	Good
	3	Mindfulness-based therapies	Good
3	1	Lavender oil extract (silexan)	Good
	2	Tandospirone (augmentation with SSRI)	Good
	2	Psilocybin and serotonergic psychedelics	Good
	3	Esketamine (monotherapy)	Moderate; monitoring required due to dissociation and cardiovascular effects
	3	tDCS	Good
	3	ECT	Moderate
	3	Yoga/breathing-based relaxation therapies	Good
	-	Chamomile extract (matricaria chamomilla L.)	Good

of studies that explicitly examine comorbid depression and anxiety disorders at the diagnostic level, making it difficult to clearly delineate treatment effects specific to this population.

Treatment of depression in comorbid alcohol and substance use disorders

The co-occurrence of depression and alcohol or other substance use disorders is common in clinical practice, and it is well known that both disorders negatively influence one another. Epidemiological studies have found that 18–31% of individuals with major depressive disorder have experienced a concurrent alcohol or substance use disorder at some point in their lives. When evaluated by substance type, the prevalence of co-occurrence is 20% for alcohol use disorder (Boschloo et al. 2011, Carton et al. 2018), 16–34% for cocaine use (Vergara-Moragues et al. 2012, Alías-Ferri et al. 2021), 13.5–38% for cannabis use disorder, (Cuenca-Royo et al. 2013), and 43.2–61.2% for tobacco use (Jiménez-Treviño et al. 2019). When alcohol and substance use co-occur with depression, the diagnosis and course of the depression require careful assessment to determine whether it is "depression independent of alcohol and substance use." In particular, heavy alcohol or substance use can lead to depressive symptoms, and depressive symptoms that develop as a result of substance use may improve partially or completely once substance use is discontinued. In contrast, in cases where alcohol and substance use disorders co-occur with depression, the course of the illness becomes significantly more severe; the risk of suicidal behavior increases, and chronicity, relapse, treatment resistance, and significant impairment in functioning are observed more frequently. Additionally, it has been reported that exposure to childhood trauma and comorbid anxiety disorders are also significantly higher in this patient group.

In most cases, the treatment of depression and alcohol and substance use disorders should be addressed concurrently.

Assessment and diagnosis

In the treatment of depression, the patient's alcohol and substance use must be systematically assessed during the initial evaluation, and information should be obtained from family members and caregivers when necessary. In clinical practice, reliable screening scales (e.g., the Alcohol Use Disorders Identification Test (AUDIT), CAGE test) should be used, and liver function tests (LFTs) (AST, ALT, GGT, Bilirubin), complete blood count (CBC), renal function tests (RFTs), and TSH levels should be screened. The frequency of follow-up should be determined based on the hepatotoxic potential of the selected medication and the patient's stability. A more rigorous monitoring schedule should be followed, particularly when agents with a high risk of hepatotoxicity (e.g., agomelatine, duloxetine, or tricyclic antidepressants) are used. A detailed history of substance use should be obtained; the type of substances used, duration of use, time of last use, and attempts to quit should be assessed. Additionally, the patient's physical health status should be assessed (particularly liver function in relation to the hepatotoxic effects of alcohol, history of infectious diseases in cases of intravenous substance use, etc.) and risks should be identified. As part of the assessment, the legal, social, and family-related issues that may arise from the diagnosis (e.g., loss of functioning, family conflicts) should also be addressed; the treatment plan should be structured within this broader framework.

Pharmacotherapy

When planning pharmacotherapy for depression in the presence of comorbid alcohol and substance use disorders, treatment choices must take into account both the alleviation of depressive symptoms and the course of alcohol and substance use. SSRIs are among the top recommendations in this group in terms of safety and tolerability. Randomized controlled trials and meta-analyses have shown that antidepressants (particularly SSRIs) reduce the severity of depression to some extent compared to placebo and increase the rate of alcohol abstinence in patients with depression and alcohol dependence (Agabio et al. 2018). The type of co-occurring substance use should also be considered when selecting an antidepressant. For example, a review published in 2022 reported that SSRIs were insufficient in alleviating depressive symptoms in patients with both depression and cocaine use; therefore, antidepressants other than SSRIs (e.g., TCAs, agents with dual mechanisms of action) may be preferred (Torrens et al. 2022). However, due to their high risk of side effects and overdose, antidepressants in the TCA and MAOI classes should generally be considered as a second-line option in patients with comorbid alcohol and substance use disorders. Other antidepressants, such as mirtazapine and bupropion, may also be considered in eligible patients, particularly when there is no response to SSRI/SNRI treatments. Bupropion is also an effective agent in smoking cessation treatment; it can reduce both depression and cigarette use in patients with depression who have severe nicotine dependence. However, it should be noted that bupropion lowers the seizure threshold in patients at high risk of alcohol withdrawal seizures or those using stimulant medications concurrently, and should be used with caution. In addition, a randomized controlled trial has reported that venlafaxine is less effective than placebo in individuals who also use cannabis. (Levin et al. 2013)

In this patient group, drug interactions and specific circumstances may guide the treatment plan. For example, smoking induces the CYP1A2 enzyme in the liver, thereby accelerating the metabolism of certain antidepressants. Serum levels of medications metabolized by CYP1A2, such as duloxetine and mirtazapine, have been found to be significantly lower in patients with depression who smoke compared to those who do not (Fric et al. 2008). Therefore, dose adjustment may be necessary in these patients, as the drug's efficacy may be reduced. The risk of hepatotoxicity should also be taken into account: In patients with liver damage, particularly those with active alcohol use, agents such as duloxetine, agomelatine, and nefazodone should not be preferred or should be used only with frequent monitoring of liver function tests. Similarly, extreme caution is warranted when prescribing benzodiazepines to patients with alcohol use disorder; due to the increased risk of central nervous system depression and respiratory depression, benzodiazepines should be avoided except for short-term, low-dose use. For alcohol use disorder, naltrexone (oral or depot form) and acamprosate are first-line agents for relapse prevention; both are expected to be safely used in patients with comorbid depression and to indirectly support mental well-being by increasing rates of alcohol abstinence. Recent evidence suggests that naltrexone and acamprosate can be safely used in combination with SSRIs such as sertraline and escitalopram, as well as with ketamine (Pettinati et al. 2010, Witte et al. 2012, Yoon et al. 2025).

Monitoring and safety recommendations

The frequency of monitoring should be determined based on the hepatotoxic potential of the selected medication and the patient's stability. A more rigorous monitoring schedule should be followed particularly when using agents with a high risk of hepatotoxicity (e.g., agomelatine, duloxetine, or tricyclic antidepressants). If an increase in liver enzymes (particularly AST/ALT) exceeding 3–5 times the upper limit of normal is detected during monitoring, medications with hepatotoxic potential should be discontinued immediately or the dose reduced, and the patient should be placed on weekly monitoring (SAMHSA 2015, NCBI 2024). In patients with active cirrhosis or chronic liver disease, it is recommended to reduce maintenance doses by 50% and to prefer agents with minimal hepatic metabolism (e.g., escitalopram) or those excreted via the renal route (Menon et al. 2022).

Table 8. Recommended follow-up schedule for co-occurring alcohol use disorder and depression (NCBI 2024, SAMHSA 2015)

Treatment phase	Recommended tests	Frequency of follow up and criteria
Baseline	Liver Function Tests (AST, ALT, GGT, Bilirubin), CBC, Kidney Function Tests, TSH	Before starting treatment (Day 0)
Early treatment / active alcohol use	Liver Function Tests (AST, ALT, GGT)	Every 2 to 4 weeks for the first 2 months
High-risk medication monitoring	Agomelatin, Duloxetine or agents with high hepatic burden	At weeks 6, 12, and 24 (Dodd et al. 2011)
Stabilization phase	Liver Function Tests and metabolic panel	Every 3 to 6 months
Dose increase / relapse	Liver Function Tests	When clinically indicated or when increasing the dose
If there is concurrent alcohol use disorder	Liver Function Tests	Before starting treatment (Day 0), at 1 month after initiation, and every 3 months thereafter. For disulfiram, monitoring should begin in the second week, followed by monthly monitoring for the first 3 months. Renal function should be monitored in patients taking acamprosate. (Mason and Heyser 2010, Winslov et al. 2016)

Psychosocial interventions, psychotherapies, and follow-up

Psychoeducation and psychosocial interventions are essential for effective treatment of depression comorbid with alcohol or other substance use disorders. In this patient group, it is strongly recommended that a psychosocial intervention be implemented in addition to pharmacological treatment. In particular, CBT and motivational interviews can be used to both improve depressive symptoms and reduce substance use (Grant et al. 2021). Adherence to treatment and the course of substance use should be closely monitored. Signs of relapse and triggers related to substance use (e.g., social environment, stressors) should be assessed at every follow-up visit. Because the risk of suicide increases particularly during the early stages of treatment and during the withdrawal phase, it should be assessed at every visit. Changes in the amount of cigarette smoking in patients who smoke should be taken into account due to their pharmacokinetic effects on antidepressant therapy (decrease/increase in CYP1A2 induction).

Approach to depression in medical illness

The prevalence of depression, particularly in association with cardiovascular, neurological, pulmonary, and gastrointestinal diseases, is significantly higher compared to the general population. Findings from a comprehensive systematic review (including 52 meta-analyses covering 27 different physical disease groups) indicate that antidepressants are effective at small to moderate levels in the treatment of comorbid depression. The greatest treatment effects were observed in myocardial infarction, functional chest pain, and coronary artery disease, whereas effectiveness remained limited in chronic low back pain and traumatic brain injury. Tolerability was also found to be lower than placebo (Köhler-Forsberg et al. 2023). These findings highlight that both drug-specific risk–benefit balance and an individualized treatment approach should be fundamental in treatment selection.

Coronary artery disease

Treatment of depression in individuals with cardiovascular disease can reduce depressive and anxiety symptoms in the short term, as well as improving quality of life. SSRIs in particular reduce the risk of myocardial infarction following acute coronary syndrome. However, they have no significant effect on overall mortality or other major cardiac outcomes. Psychological interventions provide short-term benefits but do not appear to have long-term cardiac benefits. The most effective therapeutic approach has yet to be established.

Hypertension

Although SSRIs generally have little effect on blood pressure, they have been shown to reduce diastolic blood pressure in patients with hypertension. Compared with SSRIs and placebo, SNRIs have been associated with more pronounced increases in blood pressure. Psychological interventions, particularly CBT, and algorithm-supported integrated approaches, have demonstrated significant improvements in depressive symptoms, blood pressure, and cardiometabolic parameters. These approaches have been found to be more effective in individuals with hypertension. Combined treatment approaches have been found to be more effective in lowering blood pressure, particularly in younger patients.

Heart failure

SSRIs are generally considered safe. However, the effects of SSRIs on depression and quality of life remain inconsistent and limited. In patients with heart failure and comorbid depression, CBT, particularly when combined with exercise, has been shown to improve depressive symptoms and quality of life and to reduce hospitalisation rates in some studies. Nevertheless, these results should be interpreted with caution due to the heterogeneity of the evidence and the studies' methodological limitations.

Chronic obstructive pulmonary disease (COPD)

Although sertraline has produced some positive results, the evidence concerning SSRIs and tricyclic antidepressants (TCAs) is limited, inconsistent, and of poor quality. Cognitive behavioral therapy and certain psychological interventions have been shown to significantly improve depressive and anxiety symptoms in patients with COPD. However, telehealth interventions have been found to be ineffective in reducing depressive symptoms, though they have been associated with modest reductions in anxiety levels.

Liver failure

SSRIs during antiviral therapy has been shown to reduce the risk of interferon-induced major depression and to improve depressive symptoms; however, in some studies, the prophylactic effect of citalopram has been found to be limited. Although SSRIs are generally well tolerated, their superiority over placebo in terms of treatment adherence and prevention of depression remains unclear. In patients with cirrhosis, social service interventions may have the potential to improve clinical outcomes; however, the lack of detailed information regarding intervention content makes comparisons difficult.

Inflammatory bowel disease (IBD)

In patients with IBD, SNRIs have demonstrated significant improvements in depression, anxiety, and quality of life, and have been associated with reductions in certain inflammatory markers; however, their long-term effects remain uncertain. Psychotherapy, patient education, and relaxation techniques have also shown similar short-term benefits, but the evidence regarding their effects on disease activity is limited and heterogeneous. Cognitive behavioral therapy has likewise been shown to provide short-term improvements in psychological well-being, although its long-term effects have not been adequately evaluated.

Table 9. Treatment of depression in medically ill

Study characteristics	Study type Number of included studies Sample size	Results
Coronary artery disease		
Fernandes et al. 2021	Meta-analysis 8 RCTs n=1148	The use of SSRIs in post–acute coronary syndrome depression significantly reduces the risk of recurrent MI, but does not significantly affect overall cardiac mortality or other clinical outcomes.
Akosile et al. 2023	Systematic review 19 RCTs	CBT, IPT, and SSRIs reduce short-term depressive symptoms in patients with CAD, but do not significantly affect cardiovascular outcomes.
Hypertension		
Wang et al. 2022	Meta-analysis 27 RCTs n=2606	Combined treatment* is associated with greater reductions in blood pressure compared with standard antihypertensive therapy, particularly in patients under 65 years of age.
Zhang et al. 2023	Meta-analysis 6 studies n=149	SSRIs generally do not significantly affect blood pressure, but reduce diastolic blood pressure in patients with HT.
Heart failure		
Das et al. 2019	Meta- analysis 21 RCTs n=4563	Exercise and CBT significantly reduce depressive symptoms, whereas antidepressants show no significant effect.
Ishak et al. 2020	Systematic review 27 studies	SSRIs (except paroxetine) are not superior to placebo; collaborative care including antidepressants and CBT significantly improves depressive symptoms.
Chernoff et al. 2022	Meta-analysis 15 RCTs n=1370	CBT and stress management interventions reduce depression and anxiety; longer CBT duration is associated with greater treatment success.
Chronic obstructive pulmonary disease		
Pollok et al. 2018	Systematic Review 4 RCTs n=201	Nortriptyline reduced depression in a small study; SSRI use did not improve quality of life but increased exercise tolerance.
Zhang et al. 2020	Meta-analysis 10 RCTs n=1278	CBT reduces depression and anxiety in patients with COPD; short-term interventions are more effective for depression, whereas long-term interventions are more effective for anxiety.
Zhang et al. 2025	Meta-analysis 7 RCTs n=1174	Telehealth-based interventions show no effect on depression but produce small yet significant reductions in anxiety.
Liver failure and cirrhosis		
Udina et al. 2014	Meta-analysis 7 RCTs n=591	SSRIs during antiviral therapy reduce interferon-associated depression in chronic hepatitis C but do not affect virological response.
Ufere et al. 2022	Systematic review 6 Studies	Social service–based interventions benefit patients with cirrhosis, particularly in alcohol-related liver disease and transplantation settings; however, results are limited due to poorly defined interventions.

Table 9 continues. Treatment of depression in medically ill

Study characteristics	Study type Number of included studies Sample size	Results
Inflammatory bowel disease		
Liang et al. 2022	RCT n=45	Venlafaxine improves quality of life and disease severity and reduces inflammatory markers at 6 months in patients with IBD, but does not affect endoscopic, biochemical, or relapse outcomes.
Weston et al. 2024	Meta-analysis 11 studies (3 RCTs) n=327	Antidepressants, particularly SNRIs, reduce depression and anxiety and improve quality of life in patients with IBD.
Fibromyalgia		
Bidari et al. 2019	RCT n=66 female patients	Duloxetine and pregabalin similarly reduce depression; duloxetine provides better pain control but has higher discontinuation rates due to adverse effects.
Vilarino et al. 2024	RCT n=69 (38 patients, 31 healthy controls)	Eight weeks of resistance exercise does not reduce depression in patients with fibromyalgia; however, low-intensity training at 4 weeks improves depressive symptoms.
Cojacaru et al. 2024	Meta-analysis 17 RCTs n=1499	CBT and ACT significantly reduce depression and anxiety in patients with fibromyalgia.
Chronic kidney disease		
Palmer et al. 2016	Meta-analysis 4 RCTs n=170 dialysis patients	Fluoxetine, sertraline, citalopram, and escitalopram show limited antidepressant effects in dialysis patients; nausea is more frequent, but other adverse effects and discontinuation rates are similar to placebo.
Ling et al. 2020	Meta-analysis n=479	CBT reduces depression more than standard care and counseling in hemodialysis patients but is less effective than sertraline.
Yang et al. 2024	Meta-analysis 19 RCTs	Psychosocial interventions in patients with CKD show generally limited effects on depression and quality of life; however, significant improvements are observed in HADS and Kidney Disease Quality of Life scores, with no differences detected in other measures.
Cancer		
Li et al. 2017	Meta- analysis 25 RCTs	Collaborative care is more effective than standard care, with benefits maintained at 12 months; pharmacological and psychological interventions provide only short-term benefits.
Serfaty et al. 2020	RCTs n=230	CBT shows limited effectiveness in advanced cancer; further research is needed in specific subgroups and alternative interventions.
Vita et al. 2023	Meta- analysis 14 RCTs n=1364	Antidepressants reduce acute-phase depression vs placebo, with no significant differences between drug classes.
Cerebrovascular events		
Wang et al. 2018	Meta-analysis 23 RCTs n=1973	Most studies are of low quality, but CBT reduces depressive symptoms in PSD; CBT alone or combined with antidepressants increases remission and response rates.
Niu et al. 2022	RCT n=104	ACT significantly reduces depressive symptoms in post-stroke patients, with benefits maintained at 3 months.
Yan et al. 2024	RCT n=60 Sertraline (n=30) vs Escitalopram (n=30)	Both sertraline and escitalopram reduce depressive symptoms in PSD at 8 weeks; escitalopram is superior, and both are similarly well tolerated.
Parkinson's disease, Huntington's disease, and other movement disorders		
Mills et al. 2018	Meta-analysis 20 RCTs n=1893	MAO-B inhibitors, SSRIs, and TCAs are effective for depression in PD, with the greatest efficacy observed with MAO-B inhibitors.
Dobkin et al. 2020	RCT n=72	Telephone-based CBT improves depression, anxiety, and quality of life in PD vs standard care, with benefits maintained up to 6 months.
Zadegan et al. 2024	Systematic review 41 studies	Evidence for depression treatment in Huntington's disease is limited and mostly based on case reports; data are insufficient to determine treatment effectiveness.
Zhang et al. 2024	Meta-analysis 51 studies n=673	DBS improves tic symptoms in Tourette syndrome and has beneficial effects on comorbid obsessive–compulsive symptoms, depression, and anxiety.
Sugar and Richardson, 2025	Systematic review 89 studies	Botulinum toxin injections in dystonia consistently improve depression.

ACT: acceptance and commitment therapy; CAD: coronary artery disease; CBT: cognitive behavioral therapy; CKD: chronic kidney disease; COPD: chronic obstructive pulmonary disease; DBS: deep brain stimulation; HADS: hospital anxiety and depression scale; HT: hypertension; IBD: inflammatory bowel disease; IPT: interpersonal therapy; MAO-B inhibitors: monoamine oxidase-b inhibitors; MI: myocardial infarction; n: sample size; PD: Parkinson's disease; PSD: post-stroke depression; RCTs: randomized controlled trials; SNRI: serotonin-norepinephrine reuptake inhibitor; SSRI: selective serotonin reuptake inhibitor; TCA: tricyclic antidepressant.
* Combined treatment: antihypertensive therapy plus antidepressant treatment and/or psychotherapy.

Fibromyalgia

In patients with fibromyalgia, duloxetine and pregabalin have been shown to reduce depressive symptoms by a similar amount. However, duloxetine is more effective overall, although it is associated with a higher rate of adverse effects. Psychotherapies such as CBT, acceptance and commitment therapy (ACT) and personal construct therapy (PCT) have been shown to significantly reduce depressive and anxiety symptoms, with no clear differences observed between the different approaches. While exercise interventions have generally not been found to effectively reduce depression, low-intensity exercise has demonstrated greater short-term benefits.

Chronic kidney disease (CKD)

Antidepressants (particularly SSRIs) have shown limited effects in reducing depressive symptoms in CKD, supported by low-quality evidence; however, their impact on quality of life remains uncertain. Gastrointestinal adverse effects, such as nausea, have also been reported more frequently. Cognitive behavioral therapy has been found to be effective in reducing depressive and anxiety symptoms and in improving quality of life in CKD. Although CBT has demonstrated superiority over standard care in some studies, it has been reported to be less effective than sertraline when directly compared.

Cancer

Although antidepressants may reduce symptoms in the acute phase, no significant differences have been observed between antidepressant classes and the available evidence is of low certainty. Collaborative care has been shown to have long-term effects on depressive outcomes, whereas pharmacological and psychological interventions generally only provide short-term benefits. In patients with advanced cancer, psychotherapeutic interventions may moderately alleviate depressive symptoms. However, their impact on quality of life remains unclear, and the overall quality of the evidence is low. The CanTalk trial also showed that CBT did not provide any extra clinical benefit for people with advanced cancer.

Cerebrovascular events

In the treatment of post-stroke depression (PSD), antidepressants have been found to be more effective than a placebo at reducing depressive symptoms. However, they have also been associated with an increased risk of adverse effects. CBT, particularly when combined with antidepressants, has been shown to alleviate PSD symptoms and enhance functional outcomes. Acceptance and commitment therapy and SSRIs, particularly escitalopram, have also been shown to significantly reduce depressive symptoms. However, the effects of ACT on functional gains diminish over time.

Parkinson's disease, Huntington's disease and other movement disorders

In treating depression in patients with Parkinson's disease, monoamine oxidase B (MAO-B) inhibitors, SSRIs and TCAs have been found to be effective. The greatest treatment effects have been observed with MAO-B inhibitors. Telephone-based CBT and transcranial magnetic stimulation (TMS) interventions have also been shown to significantly improve depression, anxiety and quality of life. However, evidence regarding the treatment of depression in Huntington's disease is limited and largely based on case reports. Deep brain stimulation (DBS) has been shown to improve motor and psychiatric symptoms in tic disorders. Botulinum toxin treatment for dystonia has also demonstrated consistent benefits for depressive symptoms, but the effects of other treatments are less clear.

PSYCHOTHERAPIES AND PSYCHOSOCIAL INTERVENTIONS IN THE TREATMENT OF MAJOR DEPRESSIVE DISORDER

Psychotherapies are also available for the treatment of major depressive disorder (Malhi et al. 2021, Lam et al. 2024). Among psychotherapy types, CBT and IPT have the highest evidence value and consensus. When applying a psychotherapy, one should work according to needs with "flexibility within the school" instead of a "one size fits all" method (Malhi et al. 2021, Lam et al. 2024).

Cognitive behavioral therapy in the treatment of major depressive disorder

Cognitive behavioral therapy for depression is based on the dominance of negative automatic thoughts and the decrease in reinforcement and participation in pleasurable activities (McQuaid and Thase 2017). Underlying negative thoughts and beliefs become dominant and sustain the depression. While the patient's self-efficacy is increased with CBT, negative thoughts or beliefs are reduced. Some models prioritize social skills and problem-solving skills, while others prioritize increasing positive activities and reducing cognitive symptoms or vulnerabilities.

Effectiveness depends on the collaboration and feedback between the therapist and the patient. Skills should be adapted to life through the implementation of homework (McQuaid and Thase 2017). More than the determined number of sessions is ineffective, and application less frequent than once a week is not recommended (Cuijpers et al. 2013a, Lam et al. 2024). Twice-weekly application is more effective than once a week (Cuijpers et al. 2013b).

Cognitive behavioral therapy is effective regardless of the application format and the characteristics of the patient (Cuijpers et al. 2023). When CBT is compared with other psychotherapies, the difference in effect size disappears (Cuijpers et al. 2023). Individual, group, and self-help

applications of CBT are all effective (Cuijpers 2017). Group therapies are prominent among all applications (Cuijpers et al. 2023). Therapies using Beck's manual are more effective (Cuijpers et al. 2023). No difference was found between the effectiveness of face-to-face CBT and internet-based CBT (iCBT) (Mathiasen et al. 2022). Even unguided iCBT application is effective, inexpensive, and feasible (Zhou et al. 2025). Cognitive behavioral therapy effectiveness is not affected by the characteristics of the therapist (Bergvall et al. 2024). Effectiveness is not affected by sociodemographic or clinical variables (mild, moderate, or severe severity; with melancholic, atypical, or anxious specifiers) (Cuijpers 2017).

While there was no difference in short-term effectiveness between CBT and pharmacotherapy, CBT is more effective in 6–12 month results (Cuijpers et al. 2013b, Cuijpers et al. 2023). While CBT with pharmacotherapy is no different from CBT alone, it is superior to pharmacotherapy alone (Cuijpers et al. 2013a, Cuijpers et al. 2023). The order of adding the other method on top of CBT or pharmacotherapy made no difference (Dunlop et al. 2019). The tolerability of the combination of the two is higher than pharmacotherapy alone (Cuijpers et al. 2020).

Although pharmacotherapy and CBT are equally effective in severe depressions, their combined application is recommended (Cuijpers et al. 2013a, Cuijpers et al. 2020). Cognitive behavioral therapy reduces suicide attempts (Gøtzsche and Gøtzsche 2017). According to a Cochrane Database review, adding psychotherapy to pharmacotherapy is beneficial in the long term, whereas switching to psychotherapy instead of pharmacotherapy is ineffective (Ijaz et al. 2018).

There are two therapies based on CBT for chronic and recurrent depression: Cognitive Behavioral Analysis System of Psychotherapy (CBASP) for chronic depression and Mindfulness-Based CBT (MBCT) against recurrences. Compared to usual treatment and IPT, CBASP is superior in chronic depression; however, it is not superior to pharmacotherapy. Adding CBASP to pharmacotherapy is more effective than antidepressants alone (Negt et al. 2016). The CANMAT (Canadian Network for Mood and Anxiety Disorders) 2023 major depressive disorder treatment update recommends CBASP in chronic depression (Lam et al. 2024).

Mindfulness-based CBT against recurrences gives good results in studies and in real life (Teasdale et al. 2000, Kuyken et al. 2016, Geurts, Compen et al. 2020). Mindfulness-based CBT is also effective during the index period and in difficult-to-treat depression (Goldberg et al. 2019, Lubbers et al. 2024, Barnhofer et al. 2025).

In summary**:**

• CBT is effective in all types of application and sociodemographic or clinical features do not make a difference.

• CBT is more effective in prevention than pharmacotherapy in the long term, and the combined application of CBT and pharmacotherapy is superior to pharmacotherapy alone.

• In chronic depression, CBASP with pharmacotherapy and MBCT for recurrences are effective.

Interpersonal psychotherapy (IPT)

Promising results have been obtained from the addition of psychotherapeutic interventions to psychopharmacological treatments in depression (Ravitz et al. 2019). This is not surprising since depression arises from biopsychosocial factors and therefore a meaningful treatment aims to address both its biological aspects and also its psychosocial components. The foundation of IPT lies in the demonstration to the patient of the reciprocal interaction between interpersonal relationships and depression (Klerman et al. 1984).

The development of IPT can be traced as far back as the 1970's when Gerald Klerman and Eugene Paykel recognized the necessity of adding psychotherapy to medication in the maintenance treatment of depression (Markowitz and Weissman 2012). Among those who inspired this time-limited, supportive therapy model are Harry Stack Sullivan (1953), who focused on the patient's current interpersonal context, Adolph Meyer (1957), who emphasized the importance of social relationships; and John Bowlby (1969), who highlighted the importance of attachment and suggested that separation and the threat of separation trigger stress and therefore depression. Observations by Myrna Weissman and Eugene Paykel (1974) that patients receiving treatment for depression most frequently complained about problems in their social relationships, were also influential in shaping the therapy. After extensive studies, the manualized book on IPT was published under the title *Interpersonal Psychotherapy of Depression* (Klerman et al. 1984).

Basic principle

Interpersonal psychotherapy is based on the idea that depressive symptoms, social relationships, and life events mutually influence one another. Problems in relationships and life events can trigger depressive mood in vulnerable individuals. Depressive mood can, in turn, lead to problems in interpersonal relationships. An effective social support system is protective against depression, and facilitates overall recovery.

Techniques

Interpersonal psychotherapy is held over sixteen sessions and deals with a specific interpersonal problem area. The work focuses on one of four areas: i) grief; ii) assumption of new roles due, for instance, to relocation, divorce, or retirement; iii) role disputes in interpersonal relationships such as conflicts with a spouse, friend, or family member; or iv) general difficulties in establishing and maintaining relationships.

• Although IPT emphasizes social relationships, it views depression as a medical illness and assigns the patient a "sick role" at the beginning of treatment. The purpose of this is to reduce the patient's feelings of guilt due to loss of functioning and to help them focus on recovery by receiving support from close others.

• It focuses on the patient's current social environment and relationships that trigger the depressive episode. While collecting information to create an interpersonal inventory, past relationships and patterns are also reviewed. The therapist is aware of the patient's internal conflicts, personal traits, and relational patterns but does not focus on them during the work.

• IPT focuses on what the patient feels when addressing problems in the context of relationships and helps the patient understand the interaction between their social relationships and mood.

• Some patients have such limited social environments that they appear to have no social problems due to the absence of close relationships. For such patients, role-playing and directive techniques can be used to improve social functioning.

• It uses many therapeutic techniques familiar to therapists practicing psychodynamic and cognitive behavioral therapies, making it a model that experienced therapists can easily grasp. Individuals without psychotherapy experience can visit the following website for training: (https://interpersonalpsychotherapy.org/). Cognitive-behavioral therapists should note that IPT does not focus on distorted thought patterns and cognitions; psychodynamic therapists should note that the therapist takes an active stance and does not focus on dreams or unconscious processes.

• The IPT therapist maintains a supportive, optimistic, and nonjudgmental stance. To prevent regression, the therapist adopts an active role rather than a quiet, passive, neutral stance.

• IPT is not suitable for patients with depression so severe that they cannot focus on psychotherapy, those with suicide risk or psychotic symptoms, or those with alcohol and substance misuse or dependence.

Stages of IPT

The first phase of therapy spans over three sessions. After psycho-education about depression and its treatment, the patient is given the sick role to enhance motivation for therapy. The most important task in this phase is completing the interpersonal inventory, in which close relationships, patterns, and problems in the patient's current and past social network are examined in detail. A formulation is developed by evaluating factors that trigger depression in relationships along with current relational problems; this is shared with the patient, and the problem area to be addressed is determined collaboratively.

In the second phase, consisting of ten sessions, one of the following problem areas is addressed:

1. In the area of **grief**, the focus is on accompanying the patient in processing the loss, addressing especially ambivalent aspects of the lost person, and helping the patient develop new attachments and interests.

2. In the area of **role disputes** in interpersonal relationships, conflicts arising from differing expectations between the patient and a significant other are addressed. First, communication problems are explored, and the patient is supported in clearly expressing their expectations as well as those of the other person. Examining dialogues from a sample conflict and the patient's emotions in detail can be helpful. The patient is helped to recognize and express the emotions that trigger responses such as anger, withdrawal, or distancing; for example, anger may be rooted in fear, sadness, or helplessness (Jones, 1929). Planning ways to resolve the conflict, reassessing expectations, and addressing communication problems are key goals (Alkan and Gökalp, 2008).

3. In the area of **role transitions**, the focus is on issues such as relocation, divorce, retirement, job loss, receiving a diagnosis of a chronic illness, and aging—situations that may lead to the loss of familiar social supports. Work involves expressing emotions while mourning the old role, adapting to the requirements of the new role, and developing new social supports.

4. In the area of **interpersonal deficits**, work is done with patients who lack close relationships and have difficulties forming attachments. Directive techniques and role-playing can be used to develop social skills and reduce isolation; however, IPT may be insufficient for patients with pronounced social skill deficits (Weissman et al. 2018).

The final three sessions are devoted to **termination**. The protective effect of close relationships against depression is emphasized, gains from therapy are reviewed, and the patient's sense of competence is supported. If no improvement in depressive symptoms is observed at the end of IPT, it is explained that this is a limitation of the therapy method rather than the patient, in order to prevent feelings of guilt and inadequacy, and the patient is referred to another therapeutic approach.

Interventions targeting cognitive and motivational deficits

Impairments in attention, memory, and executive functions are common in depression and may adversely affect both treatment response and functioning (Colwell et al. 2022). However, it is difficult to assess the effects of medications on cognitive functioning independently of mood symptoms. Vortioxetine, bupropion, modafinil, and SNRIs have been reported to have beneficial effects on cognitive functioning (Raskin et al. 2007, Herrera-Guzmán et al. 2008, Greer et al. 2014, McIntyre et al. 2014, Kaser et al. 2016, Tian et al. 2016, Mahableshwarkar et al. 2025). Cognitive remediation therapy is a structured

psychosocial intervention aimed at rehabilitating cognitive deficits in depression. It aims to improve cognitive functioning through repeated practice and structured exercises. Meta-analytic findings indicate that cognitive remediation therapy leads to improvements in global cognition, verbal memory, attention/processing speed, working memory, and executive functions (Thérond et al. 2021). However, these findings are limited by the small number of studies, heterogeneity in outcome measures, and the limited ability of these measures to capture real-world functioning.

Anhedonia is one of the core symptoms reflecting the motivational dimension of depression. The consummatory component of anhedonia refers to deriving direct pleasure from an activity, whereas the motivational component reflects reward anticipation and the drive to seek rewards. Among pharmacological approaches targeting anhedonia, agents acting on the dopaminergic system have received particular attention. Studies examining the effects of various pharmacological agents on anhedonia suggest that ketamine, methylphenidate, psilocybin, and some monoaminergic antidepressants may be effective in reducing the severity of anhedonia. The effects of escitalopram and riluzole have been found to be limited (Cao et al. 2019, Kwaśny 2024). However, the number of studies directly examining the effects of pharmacological interventions on anhedonia remains quite limited, and in the vast majority of existing studies, anhedonia has been assessed as a secondary outcome variable; this limits both the strength of the available evidence and its translational value for clinical practice.

Key recommendations for the management of suicidal behaviour in major depressive disorder

Approximately 90% of people who die by suicide have one or more psychiatric disorders, and 59%–87% of these cases involve major depressive disorder (MDD) (Dong et al. 2019). Therefore, the assessment of suicide risk in MDD should be a routine clinical practice. During this assessment, each patient should be directly asked whether they have thoughts of passive death or suicide, the persistence of these thoughts, whether they have made plans, and whether they have previously attempted suicide. Patients who have previously attempted suicide, have had suicidal thoughts for a long time, are making plans for suicide, are considering more lethal methods, are making preparations prior to death, or who speak to or imply to those around them about their suicidal thoughts or that their death would be better for everyone, as well as those with a family history or a close social circle with a history of suicidal behaviour, are at the highest risk.

Discussing life events with patients at risk of suicide is crucial, as crisis intervention approaches targeting these issues can help the patient. It is important to address symptoms that increase the risk of suicide, such as anxiety, hopelessness, impulsivity, anger, psychotic symptoms, insomnia and intense feelings of guilt.

As alcohol/substance misuse, post-traumatic stress disorder, Cluster B personality disorders, chronic and/or terminal illnesses, and chronic severe pain are comorbid conditions that increase the risk of suicide, interventions targeting these conditions alongside depression treatment may reduce the risk of suicide.

Furthermore, identifying the patient's strengths, reasons for living, and other protective factors, and mobilising their social support networks, will be highly beneficial in developing a safety plan.

Hospital admission and electroconvulsive therapy (ECT) should be considered for patients at high risk of suicide. If hospitalization is not feasible, the patient should be closely monitored at frequent intervals, and relatives should be advised not to leave the patient alone, to remove any potential means of suicide, and to provide emotional and practical support.

Suicide risk assessments should be repeated in both inpatient and outpatient settings, as suicide risk may fluctuate over time.

Various studies have shown that suicide contracts with patients are not effective (Rudd et al. 2006, Garvey et al. 2009, Edwards and Sachmann 2010). However, emergency action plans are effective; an emergency action plan should be drawn up with each patient for situations where the risk of suicide increases. This plan should include warning signs, what to do when the risk increases (e.g. not being left alone, informing relatives, etc.), who to contact, and the professionals or organisations to contact (Moscardini et al. 2020).

The evidence supports the view that antidepressants used in MDD treatment reduce suicidal behaviour (Isacsson et al. 2005, Gibbons et al. 2007). However, there are also publications suggesting that antidepressants may increase the risk of suicidal tendencies, particularly in young patients and during the first few weeks of treatment (Bridge et al. 2007, Stone et al. 2009, Hetrick et al. 2012a, Coupland et al. 2015, Li et al. 2022). In 2004, the FDA issued a 'black box' warning regarding suicidal thoughts and behaviours associated with selective serotonin reuptake inhibitors (SSRIs) in children and adolescents, and in 2007, this warning was extended to include young adults (aged 18–24). When an antidepressant is initiated in a patient, it must be ascertained whether suicidal thoughts have emerged, whether they have increased, and, if so, the nature of this increase. Potential warning signs of antidepressant-related suicidal behaviour include agitation, ego-dystonic suicidal thoughts and increased impulsivity (Stübner et al. 2018). Patients should be made aware of this, and in such a situation, they should contact their doctor immediately and the treatment should be reviewed (Stübner et al. 2018). However, it must not be forgotten that avoiding antidepressant use due to a potential side effect may increase the overall risk of suicide, and that a patient with MDD who is at risk of suicide must be treated with a suitable antidepressant.

Lifestyle (diet, exercise, sleep) modifications

Lifestyle modifications have become increasingly important in the management of depression, and treatment guidelines also support lifestyle-based approaches (Malhi et al. 2021, NICE 2020, Marx et al. 2023). The main domains that constitute lifestyle are commonly defined as nutrition, exercise, and sleep (Firth et al. 2019a).

When research on the benefits of dietary changes in depression is considered, there is evidence supporting a "Mediterranean diet," which is particularly rich in vegetables, fruits, fish, and whole grains (Marx et al. 2017, Parletta et al. 2018, Firth et al. 2019b, Bayes et al. 2022). Although further clinical studies are needed in this area, the available evidence suggests that a dietary pattern based on nutrient-dense, minimally processed foods may be effective in reducing depressive symptoms (Marx et al. 2023).

Research also demonstrates the effectiveness of regular exercise in depression while improving quality of life (Carter et al. 2019, Sarris et al. 2020). The World Health Organization recommends 150–300 minutes of moderate-intensity or 75–150 minutes of vigorous-intensity physical activity per week; however, guidelines emphasize that these targets may be difficult to achieve for many individuals with depression, and the best exercise prescription is the one that is sustainable (Bull et al. 2020, Teychenne et al. 2020).

There is a bidirectional relationship between depression and sleep: sleep disturbances contribute to depression, and depression can also lead to sleep disturbances. Maintaining good sleep hygiene habits may help improve sleep quality in depression, and sleep-hygiene modifications can be readily implemented as a first-step intervention (Marx et al. 2023).

In summary, lifestyle-based approaches are recommended as a key component in the management of depression and can be combined with other evidence-based treatments to promote improvements in biopsychosocial recovery and functioning.

Telemedicine and remote treatment delivery

Treatments delivered via telehealth for patients with depression yield outcomes similar to face-to-face treatments in terms of symptom severity, treatment adherence, treatment satisfaction, and quality of life (Zimmerman et al. 2023). Although telehealth encompasses all healthcare services delivered through the use of technology, videoconferencing has become the predominant method in psychiatric treatments today. In depression, the effectiveness of telehealth-delivered treatments—both pharmacotherapy and evidence-based psychotherapy—has been found to be comparable to that of in-person treatments (Scott et al. 2022). Improvements in treatment adherence are even more pronounced when telehealth is integrated with face-to-face care (Ettman et al. 2024). Therefore, telehealth should ideally not be used alone in the treatment of depression but rather in integration with in-person care. In particular, patients should be assessed for suicide risk and self-harm behaviors. Given the possibility of detecting such risks during videoconferencing sessions, an emergency protocol should be in place to ensure patient safety and facilitate referral to the nearest psychiatric center when necessary.

With the increasing availability of technology use, telehealth can reduce treatment costs and improve appointment attendance among patients with depression living in remote areas. In this way, communication disruptions between psychiatrist and patient can be minimized, ensuring continuity of depression treatment (Edwards et al. 2024). In addition to patients living far from treatment centers, telemedicine can be a valuable option for postpartum women—among whom depression is common—as well as for patients with physical disabilities requiring care and elderly patients, helping to reduce the risk of remaining untreated (Stentzel et al. 2023, Şahin et al. 2024). The quality of communication between patient and psychiatrist, as well as the effectiveness of telehealth sessions, is influenced by both parties' ease of using technology and their willingness to engage with it. Psychiatrists should be competent in the technologies they use, keep themselves up to date with technological advancements, and, when necessary, encourage patients to become more comfortable with using these tools.

Table 10. Recommendations for sleep hygiene

Routines and during the day	Before bedtime	In the bedroom
Establish a consistent sleep schedule on weekdays and weekends.	Avoid going to bed unless you feel sleepy.	The sleep environment should be relaxing, dark, quiet, and at a comfortable temperature.
Aim for at least 7 hours of sleep.	Reduce screen time and exposure to bright/artificial light before bedtime.	Keep devices such as televisions, computers, and tablets out of the bedroom; even if a smartphone is kept in the room, it should not be used in bed.
Avoid excessive intake of caffeinated beverages during the day, with particular attention in the evenings.	Add relaxing activities before bedtime (e.g., mindfulness-based meditation).	If needed, use soothing sounds (e.g., ocean sounds) or relaxing oils (e.g., lavender oil).
Avoid napping during the day; if a nap is taken, it should not exceed 20 minutes and should be at least 6 hours before bedtime.	Reduce fluid intake before bedtime, especially alcohol and caffeinated beverages.	If you cannot fall asleep, instead of staying in bed, get up and do a quiet activity (e.g., reading under dim light or listening to music), then return to bed.

This table was developed based on the World Federation of Societies of Biological Psychiatry (WFSBP) and Australasian Society of Lifestyle Medicine (ASLM) clinical practice guideline on lifestyle-based mental health care in major depressive disorder (Marx et al. 2023) and the 2020 Royal Australian and New Zealand College of Psychiatrists (RANZCP) clinical practice guideline for mood disorders (Malhi et al. 2021).

It should not be forgotten that face-to-face psychiatric treatment remains the gold standard in the treatment of depressive disorders. Especially in cases with comorbid alcohol or substance use disorders, or when the psychiatrist concludes that the patient is not benefiting from telehealth-based treatment, this should be discussed with the patient and a transition to in-person treatment should be recommended (Guaiana et al. 2021).

Conflict of Interest: The authors declare no conflicts of interest.

Funding: This research received no external funding.

REFERENCES

ACOG (2023) Treatment and management of mental health conditions during pregnancy and postpartum: ACOG Clinical Practice Guideline No. 5. *Obstet Gynecol* 141:1262–88. https://doi.org/10.1097/AOG.0000000000005202

Agabio R, Trogu E, Pani PP (2018) Antidepressants for the treatment of people with co-occurring depression and alcohol dependence. *Cochrane Database Syst Rev* 4:CD008581. https://doi.org/10.1002/14651858.CD008581.pub2

Akosile W, Tiyatiye B, Colquhoun D et al. (2023) Management of depression in patients with coronary artery disease: A systematic review. *Asian J Psychiatr* 83:103534. https://doi.org/10.1016/j.ajp.2023.103534

Alías-Ferri M, Garcia-Marchena N, Mestre-Pinto JI et al. (2021) Cocaine and depressive disorders: when standard clinical diagnosis is insufficient. *Adicciones* 33:193–200. https://doi.org/10.20882/adicciones.1321

Alkan M ve Gökalp PG (2008) Majör depresyonda ve yineleyici depresyonda kişilerarası ilişkiler terapisi. İçinde Yazıcı O, Oral TE, Vahip S (eds.) (2008) *Depresyon Sağaltım Kılavuzu Kaynak Kitabı*. Türkiye Psikiyatri Derneği Yayınları: Ankara.

Barnhofer T, Dunn BD, Strauss C et al. (2025) Mindfulness-based cognitive therapy versus treatment as usual after non-remission with NHS Talking Therapies high-intensity psychological therapy for depression: a UK-based clinical effectiveness and cost-effectiveness randomised, controlled, superiority trial. *Lancet Psychiatry* 12:433–46. https://doi.org/10.1016/S2215-0366(25)00105-1

Bayes J, Schloss J, Sibbritt D (2022) The effect of a Mediterranean diet on the symptoms of depression in young males (the "AMMEND" study): a randomized control trial. *Am J Clin Nutr* 116(2):572–80. https://doi.org/10.1093/ajcn/nqac106

Bedaso A ve Duko B (2022) Epidemiology of depression among displaced people: a systematic review and meta-analysis. *Psychiatry Res* 311:114493. https://doi.org/10.1016/j.psychres.2022.114493

Belzeaux R, Gressier F, Boudieu L et al. (2024) French Society of Biological Psychiatry and Neuropsychopharmacology and French speaking Marce Society guidelines for the management of mood disorders in women before, during and after pregnancy. *Arch Womens Mental Health* 27:595–605. https://doi.org/10.1007/s00737-024-01440-6

Bergvall H, Linde J, Alfonsson S et al. (2024) Quality of cognitive-behavioural therapy in routine psychiatric care: therapist adherence and competence, and patient outcomes for depression and anxiety disorders. *BMC Psychiatry* 24(1), 887. https://doi.org/10.1186/s12888-024-06328-4

Bidari A, Moazen-Zadeh E, Ghavidel-Parsa B et al. (2019) Comparing duloxetine and pregabalin for treatment of pain and depression in women with fibromyalgia: an open-label randomized clinical trial. *Daru* 27:149–58. https://doi.org/10.1007/s40199-019-00257-4

Boschloo L, Vogelzangs N, Smit JH et al. (2011) Comorbidity and risk indicators for alcohol use disorders among persons with anxiety and/or depressive disorders: findings from the Netherlands Study of Depression and Anxiety (NESDA). *J Affect Disord* 131:233–42. https://doi.org/10.1016/j.jad.2010.12.014

Bowlby J (1969) Vol. 1: Attachment. In *Attachment and Loss*, New York, Basic Books.

Böge K, Karnouk C, Hoell A et al. (2022) Effectiveness and cost-effectiveness for the treatment of depressive symptoms in refugees and asylum seekers: a multi-centred randomized controlled trial. *Lancet Reg Health Eur* 19:100413. https://doi.org/10.1016/j.lanepe.2022.100413

Branquinho M, Rodriguez Munoz MF et al. (2021) Effectiveness of psychological interventions in the treatment of perinatal depression: A systematic review of systematic reviews and meta-analyses. *J Affect Disord* 291:294–306. https://doi.org/10.1016/j.jad.2021.05.010

Bridge JA, Iyengar S, Salary CB et al. (2007) Clinical response and risk for reported suicidal ideation and suicide attempts in pediatric antidepressant treatment: a meta-analysis of randomized controlled trials. *JAMA* 297:1683–96. https://doi.org/10.1001/jama.297.15.1683

Bull FC, Al-Ansari SS, Biddle S et al. (2020) World Health Organization 2020 guidelines on physical activity and sedentary behaviour. *Br J Sports Med* 54:1451–62. https://doi.org/10.1136/bjsports-2020-102955

Cao B, Zhu J, Zuckerman H et al. (2019) Pharmacological interventions targeting anhedonia in patient with major depressive disorder: a systematic review. *Prog Neuropsychopharmacol Biol Psychiatry* 92:109–17. https://doi.org/10.1016/j.pnpbp.2019.01.002

Carter T, Bastounis A, Guo B et al. (2019) The effectiveness of exercise based interventions for preventing or treating postpartum depression: a systematic review and meta-analysis. *Arch Womens Ment Health* 22:37–53. https://doi.org/10.1007/s00737-018-0869-3

Carton L, Pignon B, Baguet A et al. (2018) Influence of comorbid alcohol use disorders on the clinical patterns of major depressive disorder: a general population-based study. *Drug Alcohol Depend* 187:40–7. https://doi.org/10.1016/j.drugalcdep.2018.02.009

Chernoff RA, Messineo G, Kim S et al. (2022) Psychosocial interventions for patients with heart failure and their impact on depression, anxiety, quality of life, morbidity, and mortality: a systematic review and meta-analysis. *Psychosom Med* 84:560–80. https://doi.org/10.1097/PSY.0000000000001073

Cipriani A, Furukawa TA, Salanti G et al. (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. *Lancet* 391:1357–66. https://doi.org/10.1016/S0140-6736(17)32802-7

Cipriani A, Zhou X, Del Giovane C et al. (2016) Comparative efficacy and tolerability of antidepressants for major depressive disorder in children and adolescents: a network meta-analysis. *Lancet* 388:881–90. https://doi.org/10.1016/S0140-6736(16)30385-3

Clerc GE, Ruimy P, Verdeau-Pallès J (1994) A double-blind comparison of venlafaxine and fluoxetine in patients hospitalized for major depression and melancholia. The Venlafaxine French Inpatient Study Group. *Int Clin Psychopharmacol* 9(3):139–43. https://doi.org/10.1097/00004850-199409000-00001

Colwell MJ, Tagomori H, Chapman S et al. (2022) Pharmacological targeting of cognitive impairment in depression: recent developments and challenges in human clinical research. *Transl Psychiatry* 12:484. https://doi.org/10.1038/s41398-022-02249-6

COPE Centre of Perinatal Excellence (2023) *Mental Health Care in the Perinatal Period. Australian Clinical Practice Guideline.* Revision. https://www.cope.org.au/wp-content/uploads/2023/06/COPE_2023_Perinatal_Mental_Health_Practice_Guideline.pdf

Coupland C, Hill T, Morriss R et al. (2015) Antidepressant use and risk of suicide and attempted suicide or self harm in people aged 20 to 64: cohort study using a primary care database. *BMJ* 350:h517. https://doi.org/10.1136/bmj.h517

Cuenca-Royo AM, Torrens M, Sánchez-Niubó A et al. (2013) Psychiatric morbidity among young-adults cannabis users. *Adicciones* 25:45–53. https://doi.org/10.20882/adicciones.71

Cuijpers P (2017) Four decades of outcome research on psychotherapies for adult depression: an overview of a series of meta-analyses. *Can Psychol* 58:7–19. https://doi.org/10.1037/cap0000096

Cuijpers P, Berking M, Andersson G et al. (2013b) A meta-analysis of cognitive-behavioural therapy for adult depression, alone and in comparison with other treatments. *Can J Psychiatry* 58:376–85. https://doi.org/10.1177/070674371305800702

Cuijpers P, Huibers M, Ebert DD et al. (2013a) How much psychotherapy is needed to treat depression? A metaregression analysis. *J Affect Disord* 149:1–13. https://doi.org/10.1016/j.jad.2013.02.030

Cuijpers P, Miguel C, Harrer M et al. (2023) Cognitive behavior therapy vs. control conditions, other psychotherapies, pharmacotherapies and combined treatment for depression: a comprehensive meta-analysis including 409 trials with 52,702 patients. *World Psychiatry* 22:105–15. https://doi.org/10.1002/wps.21069

Cuijpers P, Noma H, Karyotaki E et al. (2020) A network meta-analysis of the effects of psychotherapies, pharmacotherapies and their combination in the treatment of adult depression. *World Psychiatry* 19:92–107. https://doi.org/10.1002/wps.20701

Cuijpers P, Weitz E, Lamers F et al. (2017) Melancholic and atypical depression as predictor and moderator of outcome in cognitive behavior therapy and pharmacotherapy for adult depression. *Depress Anxiety* 34:246–56. https://doi.org/10.1002/da.22580

Das A, Roy B, Schwarzer G et al. (2019) Comparison of treatment options for depression in heart failure: a network meta-analysis. *J Psychiatr Res* 108:7–23. https://doi.org/10.1016/j.jpsychires.2018.10.007

Desaunay P, Eude LG, Dreyfus M et al. (2023) Benefits and risks of antidepressant drugs during pregnancy: a systematic review of meta-analyses. *Paediatr Drugs* 25:247–65. https://doi.org/10.1007/s40272-023-00561-2

Dobkin RD, Mann SL, Gara MA et al. (2020) Telephone-based cognitive behavioral therapy for depression in Parkinson disease: a randomized controlled trial. *Neurology* 94:e1764–73. https://doi.org/10.1212/WNL.0000000000009292

Dodd S, Malhi GS, Tiller J et al. (2011) A consensus statement for safety monitoring guidelines of treatments for major depressive disorder. *Aust N Z J Psychiatry* 45:712–25. https://doi.org/10.3109/00048674.2011.595686

Dong M, Zeng LN, Lu L et al. (2019) Prevalence of suicide attempt in individuals with major depressive disorder: a meta-analysis of observational surveys. *Psychol Med* 49:1691–704. https://doi.org/10.1017/S0033291718002301

Dunlop BW, LoParo D, Kinkead B et al. (2019) Benefits of sequentially adding cognitive-behavioral therapy or antidepressant medication for adults with nonremitting depression. *Am J Psychiatry* 176:275–86. https://doi.org/10.1176/appi.ajp.2018.18091075

Edwards AM, Petitt JC, Sajatovic M et al. (2024) The efficacy of telemental health interventions for Mood Disorders pre-COVID-19: a narrative review. *J Behav Health Serv Res* 51:395–420. https://doi.org/10.1007/s11414-024-09884-5

Edwards SJ ve Sachmann MD (2010) No-suicide contracts, no-suicide agreements, and no-suicide assurances: a study of their nature, utilization, perceived effectiveness, and potential to cause harm. *Crisis* 231:290–302. https://doi.org/10.1027/0227-5910/a000048

Eleftheriou G, Callegher RZ, Butera R et al. (2024) Consensus panel recommendations for the pharmacological management of breastfeeding women with postpartum depression. *Int J Environ Res Public Health* 21:551. https://doi.org/10.3390/ijerph21050551

Ettman CK, Brantner CL, Albert M et al. (2024) Trends in telepsychiatry and in-person psychiatric care for depression in an academic health system, 2017–2022. *Psychiatr Serv* 75:178–81. https://doi.org/10.1176/appi.ps.20230064

Fabiano N, Wong S, Gupta A et al. (2025) Safety of psychotropic medications in pregnancy: an umbrella review. *Mol Psychiatry* 30:327–35. https://doi.org/10.1038/s41380-024-02697-0

Falek I, Acri M, Dominguez J et al. (2022) Management of depression during perinatal period: state of evidence. *Int J Ment Health Syst* 16:21. https://doi.org/10.1186/s13033-022-00531-0

Fernandes N, Prada L, Rosa MM et al. (2021) The impact of SSRIs on mortality and cardiovascular events in patients with coronary artery disease and depression: systematic review and meta-analysis. *Clin Res Cardiol* 110:183–93. https://doi.org/10.1007/s00392-020-01697-8

Firth J, Ward PB, Stubbs B (2019a) Editorial: lifestyle psychiatry. *Front Psychiatry* 26:597. https://doi.org/10.3389/fpsyt.2019.00597

Firth J, Marx W, Dash S et al. (2019b) The effects of dietary improvement on symptoms of depression and anxiety: a meta-analysis of randomized controlled trials. *Psychosom Med* 81:265–80. https://doi.org/10.1097/PSY.0000000000000673

Fornaro M, Caiazza C, Pistone L et al. (2025) Pharmacological treatments for atypical depression: a systematic review and network meta-analysis of randomized controlled trials. *Eur Neuropsychopharmacol* 96:46–57. https://doi.org/10.1016/j.euroneuro.2025.04.003

Fric M, Pfuhlmann B, Laux G et al. (2008) The influence of smoking on the serum level of duloxetine. *Pharmacopsychiatry* 41:151–5. https://doi.org/10.1055/s-2008-1073173

Garvey KA, Penn JV, Campbell AL et al. (2009) Contracting for safety with patients: clinical practice and forensic implications. *J Am Acad Psychiatry Law* 37(3): 363–70.

Gautam S, Jain A, Gautam M, Gautam A, Jagawat T. Clinical practice guidelines for bipolar affective disorder (BPAD) in children and adolescents. Indian J Psychiatry. 2019;61(Suppl 2):294–305. doi: 10.4103/psychiatry.IndianJPsychiatry_570_18.

Geurts DE, Compen FR, Van Beek MH et al. (2020) The effectiveness of mindfulness-based cognitive therapy for major depressive disorder: evidence from routine outcome monitoring data. *BJPsych Open* 6:e144. https://doi.org/10.1192/bjo.2020.118

Gibbons RD, Brown CH, Hur K et al. (2007) Relationship between antidepressants and suicide attempts: an analysis of the Veterans Health Administration data sets. *Am J Psychiatry* 164:1044–9. https://doi.org/10.1176/ajp.2007.164.7.1044

Goldberg SB, Tucker RP, Greene PA et al. (2019) Mindfulness-based cognitive therapy for the treatment of current depressive symptoms: a meta-analysis. *Cogn Behav Ther* 48:445–62. https://doi.org/10.1080/16506073.2018.1556330

Gøtzsche PC ve Gøtzsche PK (2017) Cognitive behavioural therapy halves the risk of repeated suicide attempts: systematic review. *J R Soc Med* 110:404–10. https://doi.org/10.1177/0141076817731904

Grant S, Azhar G, Han E et al. (2021) Clinical interventions for adults with comorbid alcohol use and depressive disorders: a systematic review and network meta-analysis. *PLoS Med* 18:e1003822. https://doi.org/10.1371/journal.pmed.1003822

Greer TK, Sunderajan P, Grannemann BD et al. (2014) Does duloxetine improve cognitive function independently of its antidepressant effect in patients with major depressive disorder and subjective reports of cognitive dysfunction? *Depress Res Treat* 2014:627863. https://doi.org/10.1155/2014/627863

Guaiana G, Mastrangelo J, Hendrikx S et al. (2021) A systematic review of the use of telepsychiatry in depression. *Community Ment Health J* 57:93–100. https://doi.org/10.1007/s10597-020-00724-2

Gutsmiedl K, Krause M, Bighelli I et al. (2020) How well do elderly patients with major depressive disorder respond to antidepressants: a systematic review and single-group meta-analysis. *BMC Psychiatry* 20:102. https://doi.org/10.1186/s12888-020-02514-2

Herrera-Guzmán I, Gudayol-Ferré E, Lira-Mandujano J et al. (2008) Cognitive predictors of treatment response to bupropion and cognitive effects of bupropion in patients with major depressive disorder. *Psychiatry Res* 160:72–82. https://doi.org/10.1016/j.psychres.2007.04.012

Hetrick SE, McKenzie JE, Cox GR et al. (2012a) Newer generation antidepressants for depressive disorders in children and adolescents. *Cochrane Database Syst Rev* 11:CD004851. https://doi.org/10.1002/14651858.CD004851.pub3

Hetrick SE, Parker AG, Robinson J et al. (2012b) Predicting suicidal risk in a cohort of depressed children and adolescents. *Crisis* 33:13–20. https://doi.org/10.1027/0227-5910/a000095

Heuvelmen H, Davies NM, Ben-Shlomo Y et al. (2023) Antidepressants in pregnancy: applying causal epidemiological methods to understand service-use outcomes in women and long-term neurodevelopmental outcomes in exposed children. *Health Technol Assess* 27:1–83. https://doi.org/10.3310/AQTF4490

Hodes M (2023) Thinking about young refugees' mental health following the Russian invasion of Ukraine in 2022. *Clin Child Psychol Psychiatry* 28:3–14. https://doi.org/10.1177/13591045221125639

Ijaz S, Davies P, Williams CJ et al. (2018) Psychological therapies for treatment-resistant depression in adults. *Cochrane Database Syst Rev* 5:CD010558. https://doi.org/10.1002/14651858.CD010558.pub2

Isacsson G, Holmgren P, Ahlner J (2005) Selective serotonin reuptake inhibitor antidepressants and the risk of suicide: a controlled forensic database study of 14,857 suicides. *Acta Psychiatr Scand* 111:286–90. https://doi.org/10.1111/j.1600-0447.2004.00504.x

Ishak WW, Edwards G, Herrera N et al. (2020) Depression in heart failure: a systematic review. *Innov Clin Neurosci* 17:27–38.

Jelovac A, Landau S, Beeley P et al. (2025) Why is electroconvulsive therapy for depression more effective in older age? A causal mediation analysis. *Psychol Med* 55:e110. https://doi.org/10.1017/S0033291725000807

Ji M, Sun Y, Zhou J et al. (2023) Comparative effectiveness and acceptability of psychotherapies for late-life depression: a systematic review and network meta-analysis. *J Affect Disord* 323:409–16. https://doi.org/10.1016/j.jad.2022.11.089

Jiménez-Treviño L, Velasco Á, Rodríguez-Revuelta J et al. (2019) Factors associated with tobacco consumption in patients with depression. *Adicciones* 31:298–308. https://doi.org/10.20882/adicciones.1191

Jones E (1929) Fear, guilt and hate. *Int J Psychoanal* 10:383–97.

Kaser M, Deakin JM, Michael A et al. (2016) Modafinil improves episodic memory and working memory cognition in patients with remitted depression: a double-blind, randomized, placebo-controlled study. *Biol Psychiatry Cogn Neurosci Neuroimaging* 2:115–22.

Klerman G, Weissman M, Rounsaville B et al. (1984) *Interpersonal Psychotherapy of Depression*. New York, Basic Books.

Kok RM, Nolen WA, Heeren TJ (2012). Efficacy of treatment in older depressed patients: a systematic review and meta-analysis of double-blind randomized controlled trials with antidepressants. *J Affect Disord* 141:103–15. https://doi.org/10.1016/j.jad.2012.02.036

Köhler-Forsberg O, Stiglbauer V, Brasanac J et al. (2023) Efficacy and safety of antidepressants in patients with comorbid depression and medical diseases: an umbrella systematic review and meta-analysis. *JAMA Psychiatry* 80:1196–207. https://doi.org/10.1001/jamapsychiatry.2023.2983

Kruizinga J, Lieburg E, Burger H et al. (2021) Pharmacological treatment for psychotic depression. *Cochrane Database Syst Rev* 12:CD004044. https://doi.org/10.1002/14651858.CD004044.pub5

Kuittinen S, Mölssä M, Punamäki RL et al. (2017) Causal attributions of mental health problems and depressive symptoms among older Somali refugees in Finland. *Transcult Psychiatry* 54(2)211–38. https://doi.org/10.1177/1363461516689003

Kuyken W, Warren FC, Taylor RS et al. (2016) Efficacy of mindfulness-based cognitive therapy in prevention of depressive relapse: an individual patient data meta-analysis from randomized trials. *JAMA Psychiatry* 73:565–74. https://doi.org/10.1001/jamapsychiatry.2016.0076

Kwaśny A, Kwaśna J, Wilkowska A et al. (2024) Ketamine treatment for anhedonia in unipolar and bipolar depression: a systematic review. *Eur Neuropsychopharmacol* 86:20–34. https://doi.org/10.1016/j.euroneuro.2024.04.014

Lam RW, Kennedy SH, Adams C et al. (2024) Canadian Network for Mood and Anxiety Treatments (CANMAT) 2023 update on clinical guidelines for management of major depressive disorder in adults: réseau canadien pour les traitements de l'humeur et de l'anxiété (CANMAT) 2023: mise à jour des lignes directrices cliniques pour la prise en charge du trouble dépressif majeur chez les adultes. *Can J Psychiatry* 69:641–87. https://doi.org/10.1177/07067437241245384

Larsen AJ, Teobaldi G, Espinoza Jeraldo RI et al. (2025) Effectiveness of pharmacological and non-pharmacological interventions for treatment-resistant depression in older patients: a systematic review and meta-analysis. *BMJ Ment Health* 28:e301324. https://doi.org/10.1136/bmjment-2024-301324

Lee M-J, Chen Y-L, Wu S-I et al. (2024) Association between maternal antidepressant use during pregnancy and the risk of autism spectrum disorder and attention deficit hyperactivity disorder in offspring. *Eur Child Adolesc Psychiatry* 33:4273–83. https://doi.org/10.1007/s00787-024-02460-4

Levin FR, Mariani J, Brooks DJ et al. (2013) A randomized double-blind, placebo-controlled trial of venlafaxine-extended release for co-occurring cannabis dependence and depressive disorders. *Addiction* 108:1084–94. https://doi.org/10.1111/add.12108

Li K, Zhou G, Xiao Yet et al. (2022) Risk of suicidal behaviors and antidepressant exposure among children and adolescents: a meta-analysis of observational studies. *Front Psychiatry* 13:880496. https://doi.org/10.3389/fpsyt.2022.880496

Li M, Kennedy EB, Byrne N et al. (2017) Systematic review and meta-analysis of collaborative care interventions for depression in patients with cancer. *Psychooncology* 26:573–87. https://doi.org/10.1002/pon.4286

Liang C, Chen P, Tang Y et al. (2022) Venlafaxine as an adjuvant therapy for inflammatory bowel disease patients with anxious and depressive symptoms: a randomized controlled trial. *Front Psychiatry* 13:880058. https://doi.org/10.3389/fpsyt.2022.880058

Lin J, Zhao R, Li H et al. (2024) Looking back on life: an updated meta-analysis of the effect of life review therapy and reminiscence on late-life depression. *J Affect Disord* 347:163–74. https://doi.org/10.1016/j.jad.2023.11.050

Ling C, Evans D, Zhang Y et al. (2020) The effects of cognitive behavioural therapy on depression and quality of life in patients with maintenance haemodialysis: a systematic review. *BMC Psychiatry* 20:369. https://doi.org/10.1186/s12888-020-02754-2

Lisanby SH, McClintock SM, Alexopoulos G et al. (2020) Neurocognitive effects of combined electroconvulsive therapy (ECT) and venlafaxine in geriatric depression: phase 1 of the PRIDE study. *Am J Geriatr Psychiatry* 28:304–16. https://doi.org/10.1016/j.jagp.2019.10.003

Lubbers J, Geurts DEM, Spinhoven P et al. (2024) Rumination and self-compassion moderate mindfulness-based cognitive therapy for patients with recurrent and persistent major depressive disorder: a controlled trial. *Depress Anxiety* 2024:3511703. https://doi.org/10.1155/da/3511703

Luxton R ve Kyriakopoulos M (2022) Depression in children and young people: identification and management NICE guidelines. *Arch Dis Child Educ Pract Ed* 107:36–8. https://doi.org/10.1136/archdischild-2020-320020

MacQueen GM, Frey BN, Ismail Z et al. (2016) Canadian Network for Mood and Anxiety Treatments (CANMAT) 2016 clinical guidelines for the management of adults with major depressive disorder: Section 6. Special populations: youth, women, and the elderly. *Can J Psychiatry* 61:588–603. https://doi.org/10.1177/0706743716659276

Mahableshwarkar AR, Zajecka J, Jacobson W et al. (2015) A randomized, placebo-controlled, active-reference, double-blind, flexible-dose study of the efficacy of vortioxetine on cognitive function in major depressive disorder. *Neuropsychopharmacology* 40:2025–37. https://doi.org/10.1038/npp.2015.52

Malhi GS, Bell E, Bassett D et al. (2021) The 2020 Royal Australian and New Zealand College of Psychiatrists clinical practice guidelines for mood disorders. *Aust N Z J Psychiatry* 55:7–117. https://doi.org/10.1177/0004867420979353

Mallery L, MacLeod T, Allen M et al. (2019) Systematic review and meta-analysis of second-generation antidepressants for the treatment of older adults with depression: questionable benefit and considerations for frailty. *BMC Geriatr* 19:306. https://doi.org/10.1186/s12877-019-1327-4

Mallinckrodt CH, Watkin JG, Liu C et al. (2005) Duloxetine in the treatment of major depressive disorder: a comparison of efficacy in patients with and without melancholic features. *BMC Psychiatry* 5:1. https://doi.org/10.1186/1471-244X-5-1

Markowitz JC ve Weissman MM (2012) Interpersonal psychotherapy: past, present and future. *Clin Psychol Psychother* 19:99–105. https://doi.org/10.1002/cpp.1774

Marx W, Manger SH, Blencowe M et al. (2023) Clinical guidelines for the use of lifestyle-based mental health care in major depressive disorder: World Federation of Societies for Biological Psychiatry (WFSBP) and Australasian Society of Lifestyle Medicine (ASLM) taskforce. *World J Biol Psychiatry* 24:333–86. https://doi.org/10.1080/15622975.2022.2112074

Marx W, Moseley G, Berk M et al. (2017) Nutritional psychiatry: the present state of the evidence. *Proc Nutr Soc* 76:427–36. https://doi.org/10.1017/S0029665117002026

Mason BJ ve Heyser CJ (2010) The neurobiology, clinical efficacy and safety of acamprosate in the treatment of alcohol dependence. *Expert Opin Drug Saf* 9:177–88. https://doi.org/10.1517/14740330903512943

Mathiasen K, Andersen TE, Lichtenstein MB et al. (2022) The clinical effectiveness of blended cognitive behavioral therapy compared with face-to-face cognitive behavioral therapy for adult depression: randomized controlled noninferiority trial. *J Med Internet Res* 24:e36577. https://doi.org/10.2196/36577

McIntyre RS, Lophaven S, Olsen CK (2014) A randomized, double-blind, placebo-controlled study of vortioxetine on cognitive function in depressed adults. *Int J Neuropsychopharmacol* 17:1557–67. https://doi.org/10.1017/S1461145714000546

McQuaid JR ve Thase ME (2017) Mood Disorders: Psychotherapy. In BJ

Sadock, VA Sadock and P Ruiz (Eds.), *Kaplan and Sadock's Comprehensive Textbook of Psychiatry* (ss. 4359–4406). Philadelphia, USA. Lippincott Williams and Wilkins.

Menon V, Ransing R, Praharaj SK (2022) Management of psychiatric disorders in patients with hepatic and gastrointestinal diseases. *Indian J Psychiatry* 64:S379–S393. https://doi.org/10.4103/indianjpsychiatry.indianjpsychiatry_18_22

Meyer JP, Swetter SK, Kellner CH (2018) Electroconvulsive therapy in geriatric psychiatry: a selective review. *Psychiatr Clin North Am* 41:79–93. https://doi.org/10.1016/j.psc.2017.10.007

Meyer A (1957) *Psychobiology. A Science of Man*. Springfield, IL, McGraw-Hill Book Company.

Mills KA, Greene MC, Dezube R et al. (2018) Efficacy and tolerability of antidepressants in Parkinson's disease: a systematic review and network meta-analysis. *Int J Geriatr Psychiatry* 33:642–51. https://doi.org/10.1002/gps.4834

Miuli A, Pettorrosso M, Stefanelli G et al. (2023) Beyond the efficacy of transcranial magnetic stimulation in peripartum depression: a systematic review exploring perinatal safety for newborns. *Psychiatry Res* 326:115251. https://doi.org/10.1016/j.psychres.2023.115251

Molenaar NM, Kamperman AM, Boyce P et al. (2018) Guidelines on the treatment of perinatal depression with antidepressants: an international view. *Aust NZ J Psychiatry* 52:320–7. https://doi.org/10.1177/0004867418762057

Moscardini EH, Hill RM, Dodd CG et al. (2020) Suicide safety planning: clinician training, comfort, and safety plan utilization. *Int J Environ Res Public Health* 17:6444. https://doi.org/10.3390/ijerph17186444

National Center for Biotechnology Information (NCBI) (2024) *Treatment of Alcohol Use Disorder*. NIH, StatPearls Publishing. https://www.ncbi.nlm.nih.gov/books/NBK561234/

National Institute for Health and Care Excellence (NICE) (2022) Depression in adults: treatment and management. https://www.ncbi.nlm.nih.gov/books/NBK583074/

Negt P, Brakemeier E-L, Michalak J et al. (2016) The treatment of chronic depression with cognitive behavioral analysis system of psychotherapy: a systematic review and meta-analysis of randomized-controlled clinical trials. *Brain Behav* 6:e00486. https://doi.org/10.1002/brb3.486

Nelson JC, Delucchi KL, Schneider LS (2013) Moderators of outcome in late-life depression: a patient-level meta-analysis. *Am J Psychiatry* 170:651-9. doi: 10.1176/appi.ajp.2012.12070927

NICE (2019) Depression in children and young people: identification and management. National Institute for Health and Care Excellence (NICE). [Erişim: 2 Şubat 2025]. https://www.nice.org.uk/guidance/ng134

NICE National Institute for Health and Care Excellence (2020) Antenatal and postnatal mental health: clinical management and service guidance. [Clinical guide last updated 11 February 2020] https://www.nice.org.uk/guidance/cg192/resources/antenatal-and-postnatal-mental-health-clinical-management-and- service-guidance-pdf-35109869806789

Niu Y, Sheng S, Chen Y et al. (2022) The efficacy of group acceptance and commitment therapy for preventing post-stroke depression: a randomized controlled trial. *J Stroke Cerebrovasc Dis* 31:106225. https://doi.org/10.1016/j.jstrokecerebrovasdis.2021.106225

Oliva V, Possidente C, De Prisco M et al. (2024) Pharmacological treatments for psychotic depression: a systematic review and network meta-analysis. *Lancet Psychiatry* 11:210–20. https://doi.org/10.1016/S2215-0366(24)00006-3

Oliveira JA, Eskandar K, Freitas MAA et al. (2024) Zuralonone for postpartum depression: a systematic review and meta-analysis of two randomized studies. *Rev Bras Ginecol Obstet* 46:e-rbgo79. https://doi.org/10.61622/rbgo/2024rbgo79

Osler M, Sørensen L, Rozing Met al. (2018) Subclinical depressive symptoms during late midlife and structural brain alterations: A longitudinal study of Danish men born in 1953. *Hum Brain Mapp* 39:1789-1795. doi: 10.1002/hbm.23954

Palmer SC, Natale P, Ruospo M et al. (2016) Antidepressants for treating depression in adults with end-stage kidney disease treated with dialysis. *Cochrane Database Syst Rev* 2016:CD004541. https://doi.org/10.1002/14651858.CD004541.pub3

Pan-European Network in Peripartum Depression Disorder (2023) https://riseupppd18138.com

Parletta N, Zarnowiecki D, Cho J et al. (2019) A Mediterranean-style dietary intervention supplemented with fish oil improves diet quality and mental health in people with depression: a randomised controlled trial (HELFIMED). *Nutr Neurosci* 22:474–87. https://doi.org/10.1080/1028415X.2017.1411320

Pettinati HM, Oslin DW, Kampman KM et al. (2010) A double-blind, placebo-controlled trial combining sertraline and naltrexone for treating co-occurring depression and alcohol dependence. *Am J Psychiatry* 167:668–75. https://doi.org/10.1176/appi.ajp.2009.08060852

Pollok J, van Agteren JE, Carson-Chahhoud KV (2018) Pharmacological interventions for the treatment of depression in chronic obstructive pulmonary disease. *Cochrane Database Syst Rev* 12:CD012346. https://doi.org/10.1002/14651858.CD012346.pub2

Raskin J, Wiltse CG, Siegal A et al. (2007) Efficacy of duloxetine on cognition, depression, and pain in elderly patients with major depressive disorder: an 8-week, double-blind, placebo-controlled trial. *Am J Psychiatry* 164:900–9. https://doi.org/10.1176/ajp.2007.164.6.900

Ravitz P, Watson P, Lawson A et al. (2019) Interpersonal psychotherapy: a scoping review and historical perspective (1974-2017). *Harv Rev Psychiatry* 27:165–80. https://doi.org/10.1097/HRP.0000000000000219

Rudd MD, Mandrusiak M, Joiner TE Jr (2006) The case against no-suicide contracts: the commitment to treatment statement as a practice alternative. *J Clin Psychol* 62:243–51. https://doi.org/10.1002/jclp.20227

Sarris J, Thomson R, Hargraves F et al. (2020) Multiple lifestyle factors and depressed mood: a cross-sectional and longitudinal analysis of the UK Biobank (N=84,860). *BMC Med* 18:354. https://doi.org/10.1186/s12916-020-01813-5

Scott AM, Clark J, Greenwood H et al. (2022) Telehealth v. face-to-face provision of care to patients with depression: a systematic review and meta-analysis. *Psychol Med* 52:2852–60. https://doi.org/10.1017/S0033291722002331

Serfaty M, King M, Nazareth I et al. (2020) Effectiveness of cognitive–behavioural therapy for depression in advanced cancer: CanTalk randomised controlled trial. *Br J Psychiatry* 216:213–21. https://doi.org/10.1192/bjp.2019.207

SIGN 169 (2023) Perinatal mental health conditions. A national clinical guideline. https://www.sign.ac.uk/media/2172/sign-169-perinatal.pdf

Simas TAM, Whelan A, Byatt N (2023) Postpartum depression –new screening recommendations and treatments. *JAMA* 330:2295–6. https://doi.org/10.1001/jama.2023.21311

Stentzel U, Grabe HJ, Schmidt S et al. (2023) Mental health-related telemedicine interventions for pregnant women and new mothers: a systematic literature review. *BMC Psychiatry* 23:292. https://doi.org/10.1186/s12888-023-04790-0

Strupf M, Wiechers M, Bajbouj M et al. (2023) Predicting treatment outcomes of the Empowerment group intervention for refugees with affective disorders: findings from the MEHIRA project. *J Affect Disord* 323:241–50. https://doi.org/10.1016/j.jad.2022.11.050

Stübner S, Grohmann R, Greil W et al. (2018) Suicidal Ideation and Suicidal Behavior as Rare Adverse Events of Antidepressant Medication: Current Report from the AMSP Multicenter Drug Safety Surveillance Project. Int J *Neuropsychopharmacol* 21:814-821. doi: 10.1093/ijnp/pyy048

Substance Abuse and Mental Health Services Administration (SAMHSA) (2015) Medication for the treatment of alcohol use disorder: a brief guide. HHS Publication No. (SMA) 15-4907.

Sugar D ve Richardson SP (2025) Treating non-motor symptoms in dystonia: a systematic review. *Dystonia* 4:14545. https://doi.org/10.3389/dyst.2025.14545

Sullivan HS (1953) The Interpersonal Theory of Psychiatry. Tavistock Publications Limited, New York, Routledge.

Szmulewicz A, Valerio MP, Lomastro J et al. (2024) Melancholic features and treatment outcome to selective serotonin reuptake inhibitors in major depressive disorder: a re-analysis of the STAR*D trial. *J Affect Disord* 347:101–7. https://doi.org/10.1016/j.jad.2023.11.044

Şahin E, Yavuz Veizi BG, Naharci MI. (2024) Telemedicine interventions for older adults: a systematic review. *J Telemed Telecare* 30:305–19. https://doi.org/10.1177/1357633X211058340

Tao R, Emslie GJ, Mayes TL et al. (2010) Symptom improvement and residual symptoms during acute antidepressant treatment in pediatric major

depressive disorder. *J Child Adolesc Psychopharmacol* 20:423–30. https://doi.org/10.1089/cap.2009.0116

Teasdale JD, Segal ZV, Williams JM et al. (2000) Prevention of relapse/recurrence in major depression by mindfulness-based cognitive therapy. *J Consult Clin Psychol* 68:615–23.

Tedeschini E, Fava M, Papakostas GI (2011). Placebo-controlled, antidepressant clinical trials cannot be shortened to less than 4 weeks' duration: a pooled analysis of randomized clinical trials employing a diagnostic odds ratio-based approach. *J Clin Psychiatry* 72:98-113. doi: 10.4088/JCP.09m05725blu

Teychenne M, White RL, Richards J et al. (2020) Do we need physical activity guidelines for mental health: what does the evidence tell us? *Mental Health Phys Act* 18:100315. https://doi.org/10.1016/j.mhpa.2019.100315

Thérond A, Pezzoli P, Abbas M et al. (2021) The efficacy of cognitive remediation in depression: a systematic literature review and meta-analysis. *J Affect Disord* 284:238–46. https://doi.org/10.1016/j.jad.2021.02.009

Tian Y, Du J, Spagna A et al. (2016) Venlafaxine treatment reduces the deficit of executive control of attention in patients with major depressive disorder. *Sci Rep* 6:28028. https://doi.org/10.1038/srep28028

Torrens M, Tirado-Muñoz J, Fonseca F et al. (2022) Clinical practice guideline on pharmacological and psychological management of adult patients with depression and a comorbid substance use disorder. *Adicciones* 34:128–41. https://doi.org/10.20882/adicciones.1559

Tzanakaki M, Guazzelli M, Nimatoudis I et al. (2000) Increased remission rates with venlafaxine compared with fluoxetine in hospitalized patients with major depression and melancholia. *Int Clin Psychopharmacol* 15(1):29–34. https://doi.org/10.1097/00004850-200015010-00004

Udina M, Hidalgo D, Navinés R et al. (2014) Prophylactic antidepressant treatment of interferon-induced depression in chronic hepatitis C. a systematic review and meta-analysis. *J Clin Psychiatry* 75:e1113–21. https://doi.org/10.4088/JCP.13r08800

Ufere NN, Hinson J, Finnigan S et al. (2022) The impact of social workers in cirrhosis care: a systematic review. *Curr Treat Options Gastroenterol* 20:160–76. https://doi.org/10.1007/s11938-022-00381-2

Uhr C, Pawils S, Morina N et al. (2025) Psychological interventions for refugees with depression: a systematic literature review. *BMC Psychiatry* 25:26. https://doi.org/10.1186/s12888-024-06447-y

Valerio MP, Szmulewicz AG, Martino DJ (2018). A quantitative review on outcome-to-antidepressants in melancholic unipolar depression. *Psychiatry Res* 265:100–10. https://doi.org/10.1016/j.psychres.2018.03.088

van Bronswijk SC, Lemmens LH, Huibers MJ et al. (2018) The influence of comorbid anxiety on the effectiveness of cognitive therapy and interpersonal psychotherapy for major depressive disorder. *J Affect Disord* 232:52–60. https://doi.org/10.1016/j.jad.2018.02.003

van Diermen L, van den Ameele S, Kamperman AM et al. (2018) Prediction of electroconvulsive therapy response and remission in major depression: meta-analysis. *Br J Psychiatry* 212:71–80. https://doi.org/10.1192/bjp.2017.28

Vergara-Moragues E, González-Saiz F, Lozano M et al. (2012) Psychiatric comorbidity in cocaine users treated in therapeutic community: substance-induced versus independent disorders. *Psychiatry Res* 200:734–41. https://doi.org/10.1016/j.psychres.2012.07.043

Vigod SN, Frey BN, Clark CT et al. (2025) Canadian network for mood and anxiety treatments in 2024 clinical practice guideline for the management of perinatal mood and anxiety and related disorders: Guide de pratique 2024 du Canadian Network for Mood and Anxiety Treatments pour le traitement des troubles de l'humeur, des troubles anxieux et des troubles connexes périnatals. *Can J Psychiatry* 70:429–89. https://doi.org/10.1177/07067437241303031

Vilarino GT, Coimbra DR, Neiva HP et al. (2024) The impact of exercise intensity on depression in fibromyalgia: a randomized controlled trial. *Front Psychol* 15:1400590. https://doi.org/10.3389/fpsyg.2024.1400590

Vita G, Compri B, Matcham F et al. (2023) Antidepressants for the treatment of depression in people with cancer. *Cochrane Database Syst Rev* 3:CD011006. https://doi.org/10.1002/14651858.CD011006.pub4

Walter HJ, Abright AR, Bukstein OG et al. (2023) Clinical practice guideline for the assessment and treatment of children and adolescents with major and persistent depressive disorders. *J Am Acad Child Adolesc Psychiatry* 62:479–502. https://doi.org/10.1016/j.jaac.2022.10.001

Wang C, Zhou Y, Zheng W et al. (2019) Association between depression subtypes and response to repeated-dose intravenous ketamine. Acta Psychiatr Scand 140:446–57. https://doi.org/10.1111/acps.13096

Wang L, Liu Q, Sun D et al. (2022) Effects of combination treatment in hypertensive patients with depression: a systematic review and meta-analysis of 27 randomized controlled trials. *Ther Clin Risk Manag* 18:197–211. https://doi.org/10.2147/TCRM.S347622

Wang S-B, Wang Y-Y, Zhang Q-E et al. (2018) Cognitive behavioral therapy for post-stroke depression: a meta-analysis. *J Affect Disord* 235:589–96. https://doi.org/10.1016/j.jad.2018.04.011

Weissman MM, Markowitz JC, Klerman GL (2017) *The Guide to Interpersonal Psychotherapy*. New York, Oxford University Press.

Weissman MM ve Paykel ES (1974) *The Depressed Woman: a Study of Social Relationships*. Chicago: University of Chicago Press.

Weston F, Carter B, Powell N et al. (2024) Antidepressant treatment in inflammatory bowel disease: a systematic review and meta-analysis. *Eur J Gastroenterol Hepatol* 36:850–60. https://doi.org/10.1097/MEG.0000000000002768

Winslow BT, Onysko M, Hebert M (2016) Medications for alcohol use disorder. *Am Fam Physician* 93:457–65.

Witte J, Bentley K, Evins AE et al. (2012) A randomized, controlled, pilot study of acamprosate added to escitalopram in adults with major depressive disorder and alcohol use disorder. *J Clin Psychopharmacol* 32:787–96. https://doi.org/10.1097/JCP.0b013e3182726764

World Health Organization (2016) Problem Management Plus (PM+): individual psychological help for adults impaired by distress in communities exposed to adversity. Geneva, WHO. https://www.who.int/publications/i/item/WHO-MSD-MER-18.5

Yan N ve Hu S (2024) The safety and efficacy of escitalopram and sertraline in post-stroke depression: a randomized controlled trial. *BMC Psychiatry* 24:365. https://doi.org/10.1186/s12888-024-05833-w

Yang H, Qi L, Pei D (2024) Effect of psychosocial interventions for depression in adults with chronic kidney disease: a systematic review and meta-analysis. *BMC Nephrol* 25:17. https://doi.org/10.1186/s12882-023-03447-0

Yoon G, Pittman B, Ralevski E et al. (2025) Antidepressant efficacy of ketamine plus naltrexone for major depression comorbid with alcohol use disorder: a randomized controlled trial. *Int J Neuropsychopharmacol* 28:pyaf056. https://doi.org/10.1093/ijnp/pyaf056

Zadegan SA, Ramirez F, Reddy KS et al. (2024) Treatment of depression in Huntington's disease: a systematic review. *J Neuropsychiatry Clin Neurosci* 36:283–99. https://doi.org/10.1176/appi.neuropsych.20230120

Zhang A, Liu T, Xu J et al. (2024) Efficacy of deep brain stimulation for Tourette syndrome and its comorbidities: a meta-analysis. *Neurotherapeutics* 21:e00360. https://doi.org/10.1016/j.neurot.2024.e00360

Zhang M, Mo J, Zhang H et al. (2023) Efficacy and tolerability of repetitive transcranial magnetic stimulation for late-life depression: A systematic review and meta-analysis. *J Affect Disord* 15;323:219-231. doi: 10.1016/j.jad.2022

Zhang X, Yin C, Tian W et al. (2020) Effects of cognitive behavioral therapy on anxiety and depression in patients with chronic obstructive pulmonary disease: a meta-analysis and systematic review. *Clin Respir J* 14:891–900. https://doi.org/10.1111/crj.13226

Zhang Y, Zhao Y, Jiang X et al. (2025) Telehealth approaches for improving depression and anxiety among patients with chronic obstructive pulmonary disease: a systematic review and meta-analysis. *Gen Hosp Psychiatry* 92:28–35. https://doi.org/10.1016/j.genhosppsych.2024.12.009

Zhou W, Chen Y, Wu H et al. (2025) Cost utility analysis of internet-based cognitive behavioral therapy for major depressive disorder: randomized controlled trial. *J Med Internet Res* 27:e67567. https://doi.org/10.2196/67567

Zimmerman M, D'Avanzato C, King BT. (2023) Telehealth treatment of patients with major depressive disorder during the COVID-19 pandemic: comparative safety, patient satisfaction, and effectiveness to prepandemic in-person treatment. *J Affect Disord* 323:624–30. https://doi.org/10.1016/j.jad.2022.12.015

Zimmerman M, Chelminski I, McDermut W (2002) Major depressive disorder and axis I diagnostic comorbidity. *J Clin Psychiatry* 63:187–93. https://doi.org/10.4088/jcp.v63n0303