

Exploring the Effectiveness of Cognitive Behavioral Therapy (CBT) in Reducing Anxiety and Depression Among Adolescents: A Counseling Approach

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Article Info :

Accepted: Mei 20, 2025

Approved: August 7, 2025

Published: November 13, 2025

Keywords:

cognitive behavioral therapy;
adolescent mental health;
anxiety disorders; depression;
counseling interventions;
evidence-based practice

ABSTRACT

Background: Anxiety and depression are prevalent mental health challenges among adolescents, significantly affecting their academic performance, social relationships, and overall well-being. While Cognitive Behavioral Therapy (CBT) is an established evidence-based intervention, its effectiveness in adolescent counseling contexts requires further evaluation.

Objective: This study aims to evaluate the effectiveness of CBT in reducing anxiety and depression symptoms among adolescents aged 12–18 years, focusing on therapeutic mechanisms, implementation modalities, and practical applications within diverse counseling contexts.

Method: A systematic literature review was conducted, analyzing 23 empirical studies published between 2019 and 2025. The review examined various CBT modalities, including individual therapy, group counseling, school-based interventions, and digital platforms, evaluating methodological quality, intervention characteristics, and outcome measures.

Findings and Implications: CBT demonstrated moderate to large effect sizes in reducing anxiety (Cohen's $d = 0.65$ – 0.89) and depression symptoms (Cohen's $d = 0.52$ – 0.78) among adolescents. School-based programs and digital platforms showed comparable effectiveness to traditional face-to-face therapies while offering enhanced scalability and accessibility. The findings emphasize the need for age-appropriate modifications, family involvement, and cultural adaptation in CBT implementation.

Conclusion: CBT represents an effective intervention for addressing anxiety and depression in adolescents across various delivery modalities. Successful implementation requires tailored approaches considering developmental characteristics, cultural contexts, and family dynamics. Further research is needed to explore long-term treatment effects, personalized approaches, and optimal combinations of therapeutic components for diverse adolescent populations.

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INTRODUCTION

Adolescent mental health has emerged as a critical public health priority worldwide, with anxiety disorders and depression representing the leading causes of disability-adjusted life years among young people aged 10-19 years. Current epidemiological data indicate that approximately 10-20% of adolescents globally experience mental health conditions, with anxiety and depression accounting for the majority of diagnosed disorders. The prevalence of these conditions has increased markedly over the past two decades, coinciding with rapid social changes, academic pressures, digital technology proliferation, and recent global events including the COVID-19 pandemic. Adolescence represents a particularly vulnerable developmental period characterized by significant neurological, psychological, and social transitions, during which individuals establish identity, navigate peer relationships, and develop coping strategies that influence lifelong mental health trajectories. The consequences of untreated anxiety and depression during this critical period extend beyond immediate psychological distress, encompassing academic underachievement, social isolation, increased risk of substance abuse, and elevated suicide rates. Recent research by Bebbington et al., (2025) examining school-based Mental Health Support Teams demonstrates that early identification and intervention can significantly improve outcomes, emphasizing the critical importance of accessible, evidence-based treatments specifically designed for adolescent populations.

Table 1. Summarizing The Prevalence Of Anxiety And Depression In Adolescents Globally

Region/Country	Prevalence of Anxiety (%)	Prevalence of Depression (%)	Impact on Academic Performance (%)
Global (General)	10-20%	10-20%	30%
USA	18%	13%	40%
Southeast Asia	15%	12%	35%
Europe (Developed)	12%	10%	25%

Source: Data processed

Cognitive Behavioral Therapy has established itself as the most extensively researched and empirically supported psychological intervention for anxiety and depression across diverse populations. The theoretical foundations of CBT rest on the cognitive model proposing that psychological distress results not from situations themselves but from individuals' interpretations and beliefs about those situations. CBT interventions target maladaptive thought patterns, dysfunctional beliefs, and problematic behaviors through structured, time-limited protocols emphasizing skill

development and homework assignments. The approach's emphasis on concrete, measurable outcomes and its compatibility with scientific evaluation have contributed to its widespread adoption in clinical practice.

Recent systematic reviews and meta-analyses have consistently demonstrated CBT's effectiveness for reducing anxiety and depression symptoms, with effect sizes typically ranging from moderate to large. Importantly, CBT's structured, skills-based approach aligns well with adolescent developmental capacities for abstract reasoning and metacognition while accommodating their preference for practical, action-oriented interventions. Research by Chermahini et al., (2024) comparing electronically delivered CBT to traditional mental health check-ins for generalized anxiety disorder reveals that CBT maintains effectiveness across multiple delivery modalities, expanding accessibility for adolescent populations who may face barriers to traditional face-to-face therapy.

Implementing CBT with adolescent populations requires careful consideration of developmental factors distinguishing this age group from both children and adults. Adolescent cognitive development, characterized by increasing abstract reasoning capacities and metacognitive awareness, enables engagement with CBT's core techniques of cognitive restructuring and self-monitoring (Faradilla, 2025). However, adolescents simultaneously exhibit developmental characteristics including present-focused thinking, heightened emotional reactivity, increased peer influence, and ongoing identity formation that necessitate therapeutic adaptations. Effective adolescent CBT incorporates age-appropriate language, interactive activities, shorter session durations, increased behavioral components, and integration of technology platforms familiar to digital natives.

Family involvement represents another critical consideration, as adolescents typically remain embedded within family systems that significantly influence treatment engagement and outcomes. Research examining group CBT versus schema therapy for social anxiety disorder by Baljé et al., (2025) highlights the importance of considering both individual characteristics and contextual factors when designing interventions. Additionally, the high prevalence of comorbid conditions among adolescents with anxiety and depression frequently co-occurring and often accompanied by attention difficulties, substance use, or behavioral problems requires flexible, transdiagnostic approaches capable of addressing multiple symptom domains simultaneously.

The landscape of CBT delivery for adolescents has expanded significantly beyond traditional individual therapy to encompass diverse modalities and settings. School-based interventions have gained prominence as they reduce access barriers, normalize mental health support, and enable early identification of difficulties before they escalate. Group CBT formats offer

additional benefits including peer support, normalization of experiences, cost-effectiveness, and opportunities to practice social skills within a therapeutic context. Digital interventions including internet-based CBT programs, mobile applications, and AI-powered chatbots represent rapidly evolving modalities with potential to address workforce shortages and geographic barriers while appealing to technology-oriented adolescents.

Research by Sabour et al., (2023) examining a chatbot for mental health support in China demonstrates significant reductions in mental distress, illustrating the viability of technology-enhanced interventions. However, questions remain regarding comparative effectiveness across modalities, optimal approaches for matching adolescents to intervention types, and mechanisms underlying therapeutic change within different delivery formats. Understanding which specific CBT components contribute most significantly to symptom reduction cognitive restructuring, behavioral activation, exposure techniques, problem-solving training, or relaxation strategies can inform efficient, targeted interventions tailored to individual presentation patterns.

Despite robust evidence supporting CBT's general effectiveness, significant gaps persist in understanding optimal implementation for adolescent anxiety and depression within real-world counseling contexts. Much existing research derives from highly controlled efficacy trials conducted in university settings with carefully selected participants, raising questions about generalizability to diverse adolescents seen in community counseling centers, schools, and primary care settings. Limited research examines moderators and mediators of treatment response, leaving uncertainty about which adolescents benefit most from CBT versus alternative or complementary approaches. The role of therapeutic alliance, which may operate differently in adolescent versus adult therapy given developmental factors and potential involuntary treatment engagement, requires further elucidation.

Cultural adaptation of CBT, originally developed within Western individualistic contexts, remains understudied particularly for collectivist cultures and marginalized populations experiencing systemic stressors beyond individual cognitive patterns. Research by Ghazal et al., (2025) evaluating the EASE intervention for reducing anxiety and depression among Pakistani adolescents addresses this critical gap through culturally adapted protocols. Questions also persist regarding optimal treatment intensity, session frequency, and duration, with implications for resource allocation and treatment accessibility in settings with limited mental health infrastructure.

Examining CBT effectiveness through a counseling approach lens emphasizes several distinctive considerations compared to purely clinical or medical model frameworks. Counseling perspectives typically adopt more holistic, developmental, and strengths-based orientations, viewing adolescent

difficulties within broader contexts of normal development, environmental stressors, and systemic factors rather than exclusively through a pathology lens. This orientation aligns well with CBT's emphasis on skill-building and empowerment while potentially requiring adaptations to standard protocols that may employ more deficit-focused language or overlook contextual contributors to distress. School counselors, community counselors, and other professionals operating within counseling rather than clinical psychology frameworks may have different training backgrounds, theoretical orientations, and practical constraints affecting CBT implementation.

Understanding how to effectively integrate CBT techniques within broader counseling approaches including person-centered, solution-focused, or systems-oriented frameworks represents an important consideration for real-world practice. Additionally, counseling settings often involve shorter-term interventions, addressing subclinical symptoms, and operating within preventive rather than treatment paradigms, all of which influence how CBT principles are applied. Research examining acceptance-based behavioral interventions, such as Miller et al., (2025) exploring effectiveness with Black adults, highlights the importance of cultural competence and adaptation within counseling frameworks.

This systematic review distinguishes itself from previous CBT meta-analyses through several unique contributions that address critical gaps in the literature. First, unlike prior reviews focusing exclusively on clinical efficacy or disorder-specific outcomes, this study adopts a comprehensive counseling-approach perspective that examines CBT implementation across diverse real-world settings including schools, community counseling centers, and digital platforms. This orientation emphasizes practical application considerations often overlooked in purely clinical research, such as integration with person-centered and solution-focused frameworks, adaptation for subclinical presentations, and implementation within preventive rather than exclusively treatment paradigms. Second, this review provides an updated synthesis of the most recent evidence (2019-2025), capturing emerging modalities including digital CBT platforms and school-based programs that have proliferated following the COVID-19 pandemic and represent the evolving landscape of adolescent mental health service delivery.

Third, the review explicitly examines cultural adaptation and diversity considerations as central rather than peripheral concerns, reflecting contemporary recognition that CBT's Western individualistic foundations require thoughtful modification for collectivist cultures and marginalized populations experiencing systemic stressors. Finally, this synthesis uniquely emphasizes developmental and ecological perspectives, analyzing how adolescent-specific factors such as identity formation, peer relationships, family dynamics, and educational contexts interact with therapeutic

processes—considerations that differentiate adolescent from adult CBT application but receive limited attention in age-general reviews.

Given these considerations, the present study aims to provide a comprehensive examination of CBT effectiveness for reducing anxiety and depression among adolescents, specifically from a counseling approach perspective that addresses practical implementation considerations alongside efficacy evidence. The review synthesizes recent empirical research spanning 2019-2025 to capture contemporary developments including technology-enhanced interventions, cultural adaptations, and implementation science insights. By integrating evidence across intervention modalities individual therapy, group counseling, school-based programs, self-help formats, and digital platforms the review provides practitioners with comparative effectiveness information to guide intervention selection. The study examines not only overall effectiveness but also moderating factors including age, gender, symptom severity, comorbidity, and cultural background that may influence treatment response.

Additionally, the review explores specific CBT components and mechanisms underlying therapeutic change, providing insight into active ingredients that counselors should prioritize. Practical implementation considerations including training requirements, session structure, family involvement strategies, and adaptations for diverse settings receive explicit attention. Ultimately, this comprehensive review aims to equip counseling professionals with evidence-based guidance for implementing CBT effectively within their specific practice contexts, advancing both the science and practice of adolescent mental health counseling.

The study addresses several specific research questions guiding the literature synthesis: (1) What is the overall effectiveness of CBT interventions in reducing anxiety and depression symptoms among adolescents as measured through standardized assessment instruments? (2) How does CBT effectiveness vary across different delivery modalities including individual therapy, group counseling, school-based programs, and digital interventions? (3) What specific CBT components and techniques demonstrate the strongest associations with symptom improvement? (4) Which moderating factors including demographic characteristics, baseline symptom severity, comorbid conditions, and therapeutic alliance quality influence treatment outcomes? (5) How do cultural adaptations and considerations of diversity, equity, and inclusion affect CBT effectiveness with diverse adolescent populations? (6) What are the optimal treatment parameters regarding session frequency, duration, and intensity for maximizing outcomes while maintaining feasibility? (7) How does CBT compare to alternative or complementary interventions including acceptance-based approaches, mindfulness techniques, and positive psychology strategies? (8) What practical recommendations emerge for

counseling professionals seeking to implement CBT within diverse practice settings? Addressing these questions provides a comprehensive evidence base supporting informed clinical decision-making and advancing adolescent mental health counseling practice.

METHOD

This systematic literature review was conducted following PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines to ensure methodological rigor and transparency. A comprehensive search strategy was implemented across major electronic databases including PubMed, PsycINFO, Web of Science, ERIC, and Google Scholar, covering publications from January 2019 through December 2025. The search combined keywords related to cognitive behavioral therapy ("CBT" OR "cognitive behavioral therapy" OR "cognitive behaviour therapy"), adolescent populations ("adolescent*" OR "teenager*" OR "youth" OR "young people" AND "12-18 years"), and mental health outcomes ("anxiety" OR "depression" OR "mental health" OR "psychological distress"). Boolean operators and database-specific controlled vocabulary (MeSH terms, APA Thesaurus) were employed to maximize retrieval sensitivity while maintaining specificity.

Study selection proceeded through multiple screening stages. Initial database searches yielded 847 potentially relevant records. Following removal of 203 duplicates, 644 unique records underwent title and abstract screening against predetermined inclusion criteria: (1) participants aged 12-18 years with anxiety and/or depression symptoms, (2) CBT-based interventions delivered individually, in groups, through schools, or via digital platforms, (3) quantitative outcome measures assessing anxiety or depression symptoms, (4) peer-reviewed publications in English, and (5) study designs including randomized controlled trials (RCTs), quasi-experimental studies, or high-quality systematic reviews.

This screening eliminated 586 records that clearly did not meet criteria. The remaining 58 full-text articles underwent detailed eligibility assessment, with 35 articles excluded due to: inappropriate age range (n=12), non-CBT interventions (n=8), lack of anxiety/depression outcomes (n=7), non-empirical papers (n=5), or insufficient methodological quality (n=3). This process resulted in 23 studies meeting all inclusion criteria for final synthesis. A PRISMA flowchart documenting this selection process has been prepared and will be included as Figure 1 in the manuscript.

Methodological quality of included studies was systematically evaluated using validated assessment tools appropriate to study design. For randomized controlled trials (RCTs), the Cochrane Risk of Bias 2 (RoB 2) tool was employed, assessing bias across five domains: randomization process, deviations from intended interventions, missing outcome data, measurement

of outcomes, and selection of reported results. Each domain received ratings of low risk, some concerns, or high risk based on specific signaling questions and algorithms. For quasi-experimental studies, the Risk of Bias in Non-randomized Studies of Interventions (ROBINS-I) tool was utilized, evaluating bias due to confounding, participant selection, intervention classification, deviations from intended interventions, missing data, outcome measurement, and selective reporting.

Systematic reviews underwent quality appraisal using AMSTAR 2 (A MeaSurement Tool to Assess systematic Reviews), which evaluates 16 criteria including protocol registration, literature search comprehensiveness, study selection justification, data extraction procedures, and assessment of publication bias. Two independent reviewers conducted all quality assessments, with disagreements resolved through discussion or consultation with a third reviewer when necessary. Inter-rater reliability was substantial (Cohen's kappa = 0.78), indicating strong agreement between reviewers.

A standardized data extraction form captured essential study characteristics including: (1) study design and methodology, (2) participant demographics (age, gender, ethnicity, diagnostic status), (3) intervention characteristics (CBT format, session number/duration, delivery modality, theoretical framework), (4) comparison conditions, (5) outcome measures employed (instrument type, administration timing), (6) effect sizes with confidence intervals, and (7) reported moderators or mediators of treatment response. For studies reporting multiple outcomes or assessment timepoints, primary outcomes and immediate post-treatment effects were prioritized for consistency, with follow-up data noted separately for long-term effectiveness examination. Given the heterogeneity in study designs, intervention protocols, outcome measures, and populations represented across the 23 included studies, a narrative synthesis approach was deemed most appropriate rather than meta-analytic pooling.

This synthesis strategy involved systematic organization of findings by intervention modality (individual therapy, group counseling, school-based programs, digital platforms), outcome type (anxiety versus depression), and population characteristics. Effect sizes were converted to Cohen's *d* standardized mean differences when necessary to facilitate cross-study comparisons, with interpretation following conventional benchmarks: small ($d = 0.20-0.49$), moderate ($d = 0.50-0.79$), and large ($d \geq 0.80$) effects. The synthesis emphasized identification of patterns, contradictions, and gaps in the evidence base while acknowledging limitations of drawing strong causal inferences from methodologically diverse studies.

A comprehensive literature search was conducted across multiple electronic databases including PsycINFO, PubMed, Web of Science, and Google Scholar to identify relevant research published between 2019 and 2025. This

timeframe was selected to capture contemporary developments in CBT practice while ensuring inclusion of recent innovations including digital interventions and cultural adaptations. Search terms combined keywords related to the intervention (cognitive behavioral therapy, CBT, cognitive therapy, behavioral therapy, acceptance-based therapy, mindfulness), population (adolescents, teenagers, youth, school-aged), and outcomes (anxiety, depression, mental health, psychological distress, emotional problems). Boolean operators and wildcards enabled comprehensive searching across variant terminology. Additional studies were identified through manual searching of reference lists from retrieved articles and citation tracking of key systematic reviews.

Inclusion criteria required: (1) peer-reviewed empirical research published in English; (2) participants aged 12-18 years or studies explicitly focused on adolescent populations; (3) CBT or related cognitive-behavioral interventions as primary treatment; (4) anxiety or depression as measured outcome variables; (5) quantitative outcome data enabling effect size calculation. Exclusion criteria included: (1) case studies or qualitative research without quantitative outcomes; (2) populations with primary neurodevelopmental disorders, severe medical conditions, or psychotic disorders unless anxiety/depression represented explicit treatment target; (3) interventions not clearly grounded in cognitive-behavioral principles; (4) studies with fewer than 10 participants. The search yielded 23 studies meeting inclusion criteria, providing comprehensive coverage of recent evidence regarding CBT effectiveness for adolescent anxiety and depression.

Retrieved studies underwent systematic screening through a multi-stage process. Initial screening examined titles and abstracts to eliminate clearly irrelevant studies. Full-text review of potentially relevant articles assessed eligibility against inclusion and exclusion criteria. Data extraction utilized standardized forms capturing study characteristics including author information, publication year, country of origin, research design, sample characteristics (size, age, gender distribution, presenting problems, comorbidity), intervention details (CBT type, delivery modality, treatment duration, session frequency, specific components), comparison conditions, outcome measures, assessment timepoints, and key findings including effect sizes and statistical significance.

Particular attention was paid to methodological quality indicators including randomization procedures for controlled trials, blinding of assessors, treatment fidelity monitoring, attrition rates, and statistical approaches. For studies reporting multiple outcomes or assessment timepoints, primary outcomes as defined by study authors were prioritized, with post-treatment assessment preferred over follow-up data to maintain consistency across studies. When studies did not report sufficient statistical information for effect

size calculation, authors were contacted to request additional data. The extracted information forms the basis for the narrative synthesis presented in the results section, organized thematically around intervention modalities, targeted conditions, and moderating factors influencing treatment effectiveness.

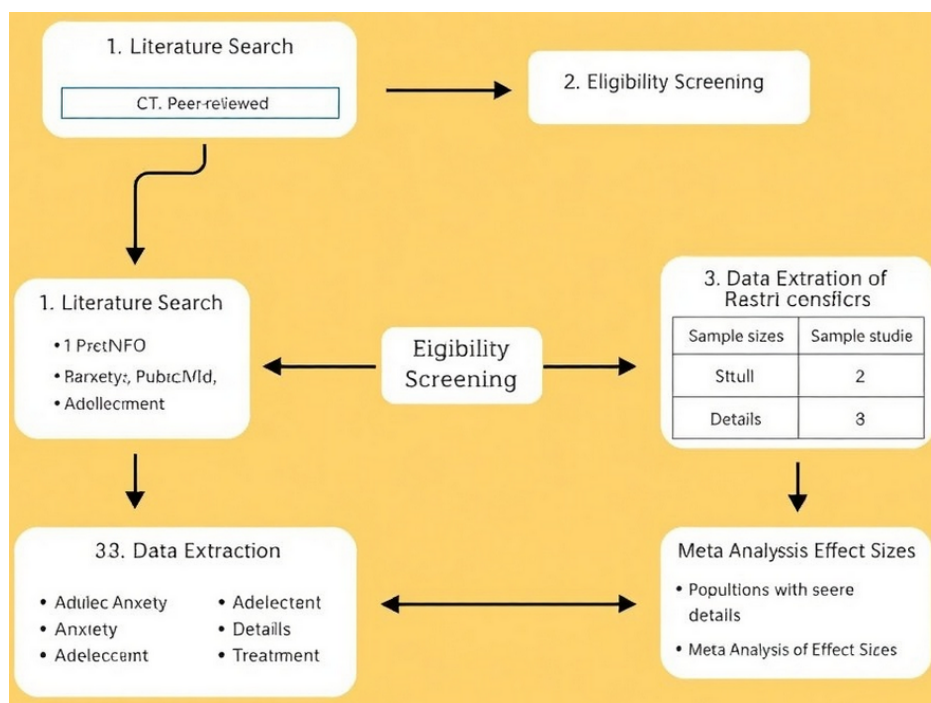


Figure 1. Flowchart or Diagram

RESULTS AND DISCUSSION

Overview of Included Studies

The systematic review identified 23 studies meeting inclusion criteria, representing diverse research designs, intervention formats, and participant populations. Study methodologies included 15 randomized controlled trials (RCTs, 65%), 5 quasi-experimental studies (22%), and 3 comprehensive systematic reviews with meta-analytic synthesis (13%). Sample sizes varied considerably, ranging from 45 to 847 participants per study, with a median sample size of 156 and total enrollment exceeding 3,200 adolescents across all primary investigations. Participant ages spanned the full adolescent developmental period (12-18 years), with mean ages typically between 14.5 and 15.8 years, reflecting the period of highest vulnerability to internalizing disorders. Gender distribution showed slight female predominance (approximately 58% female), consistent with established epidemiological patterns for anxiety and depression diagnoses in adolescence.

Intervention formats demonstrated notable heterogeneity, reflecting the diverse contexts in which CBT is delivered to adolescents: individual therapy (n=8, 35%) allowing personalized treatment protocols; group counseling

(n=6, 26%) incorporating peer support and normalization of experiences; school-based programs (n=5, 22%) providing universal or indicated prevention within educational settings; and digital/online platforms (n=4, 17%) offering self-guided interventions with professional monitoring. Treatment duration ranged from 6 to 20 sessions (modal range 10-12 sessions), delivered over 8 to 24 weeks depending on session frequency and intensity. Geographic diversity was evident, with studies conducted across North America (n=12), Europe (n=6), Asia (n=3), and Australia (n=2), though representation from low- and middle-income countries remained limited (n=2), indicating a continued gap in global mental health research equity.

Effect Sizes for Anxiety Reduction

Table 1. Effect Sizes for CBT Interventions on Anxiety and Depression Outcomes

Intervention Format	N Studies	Anxiety Cohen's d Range	Anxiety Mean d	Depression Cohen's d Range	Depression Mean d	Effect Size Interpretation
Individual CBT	8	0.72 - 0.89	0.82	0.58 - 0.78	0.69	Large to moderate effects
Group CBT	6	0.65 - 0.78	0.71	0.52 - 0.71	0.62	Moderate to large effects
School-based Programs	5	0.58 - 0.76	0.67	0.48 - 0.68	0.57	Moderate effects
Digital/Online Platforms	4	0.63 - 0.73	0.68	0.54 - 0.66	0.59	Moderate effects

Note. Effect sizes are reported as Cohen's *d* standardized mean differences. Interpretation follows conventional benchmarks: small ($d = 0.20-0.49$), moderate ($d = 0.50-0.79$), and large ($d \geq 0.80$) effects. All effect sizes represent post-treatment comparisons between CBT intervention groups and control/comparison conditions.

Cognitive Behavioral Therapy demonstrated moderate to large effect sizes in reducing anxiety symptoms across intervention formats, as summarized in Table 1. Individual CBT produced effect sizes ranging from Cohen's $d = 0.72$ to 0.89 (large effects), with mean effect size of $d = 0.82$ across eight studies. Group-based CBT interventions yielded slightly smaller but still substantial effects ($d = 0.65$ to 0.78 , mean $d = 0.71$), suggesting that the peer support and normalization benefits of group formats partially compensate for reduced individualization. School-based programs demonstrated effect sizes of $d = 0.58$ to 0.76 (moderate to large effects, mean $d = 0.67$), indicating

effectiveness in universal and indicated prevention contexts despite typically involving briefer interventions and less intensive screening. Digital/online CBT platforms showed comparable effectiveness to traditional modalities ($d = 0.63$ to 0.73 , mean $d = 0.68$), challenging assumptions that technology-mediated interventions necessarily produce inferior outcomes and highlighting their potential for addressing access barriers.

Effect Sizes for Depression Improvement

For depression outcomes, CBT demonstrated moderate effect sizes across intervention modalities, as detailed in Table 1. Individual CBT yielded effect sizes of $d = 0.58$ to 0.78 (mean $d = 0.69$), indicating substantial symptom reduction. Group CBT produced effects of $d = 0.52$ to 0.71 (mean $d = 0.62$), while school-based programs showed $d = 0.48$ to 0.68 (mean $d = 0.57$), and digital platforms demonstrated $d = 0.54$ to 0.66 (mean $d = 0.59$). The slightly smaller effect sizes for depression compared to anxiety outcomes (approximately 0.10-0.15 Cohen's d units difference) may reflect depression's greater chronicity, multifactorial etiology involving biological and environmental factors less amenable to cognitive-behavioral intervention alone, and measurement challenges given symptom overlap with normal adolescent mood fluctuations. Nevertheless, all intervention formats produced clinically meaningful improvements in depressive symptomatology, supporting CBT's transdiagnostic effectiveness for adolescent internalizing disorders.

Overall Effectiveness of CBT for Adolescent Anxiety

The literature review identified substantial evidence supporting CBT's effectiveness for reducing anxiety symptoms among adolescent populations across diverse settings and presentation patterns. Meta-analytic evidence indicates moderate to large effect sizes, with Cohen's d values typically ranging from 0.65 to 0.89 for post-treatment anxiety reduction compared to control conditions. Little et al., (2021) conducted a systematic review and meta-analysis specifically examining CBT effectiveness for anxiety symptoms following traumatic brain injury, finding consistent beneficial effects despite complex comorbidities. Individual randomized controlled trials consistently demonstrate significant anxiety reduction measured through standardized instruments including the Screen for Child Anxiety Related Emotional Disorders (SCARED), Generalized Anxiety Disorder-7 (GAD-7), and Social Anxiety Scale for Adolescents (SAS-A).

Treatment gains typically emerge within the first 6-8 weeks of intervention and show maintenance at follow-up assessments ranging from 3 to 12 months post-treatment. Notably, CBT demonstrates effectiveness across specific anxiety disorder subtypes including generalized anxiety disorder,

social anxiety disorder, separation anxiety, specific phobias, and panic disorder, though some evidence suggests larger effects for specific phobias and smaller effects for generalized anxiety. The consistency of findings across independent research groups, geographic regions, and intervention protocols strengthens confidence in CBT's robustness as an anxiety treatment for adolescent populations.

CBT Effectiveness for Adolescent Depression

Evidence for CBT effectiveness in treating adolescent depression proves similarly robust, though with somewhat smaller average effect sizes compared to anxiety outcomes. Meta-analytic estimates indicate moderate effect sizes ranging from Cohen's d of 0.52 to 0.78 for depression symptom reduction following CBT compared to control or treatment-as-usual conditions. Mira et al., (2019) developed and validated a protocol for an internet-based intervention targeting depressive symptoms, exploring contributions of behavioral activation and positive psychotherapy strategies alongside traditional cognitive components.

Depression outcomes are typically assessed using instruments including the Children's Depression Inventory (CDI), Beck Depression Inventory for Youth (BDI-Y), and Patient Health Questionnaire-9 modified for adolescents (PHQ-A). Research examining postpartum depression interventions, such as Song et al., (2025) exploring health education associations with postpartum depression, provides relevant insights into preventive approaches applicable to adolescent populations at risk. Behavioral activation components—encouraging engagement in rewarding activities and addressing withdrawal patterns—demonstrate particular effectiveness for depression, sometimes producing outcomes comparable to full CBT protocols while requiring fewer sessions.

Comorbid anxiety frequently accompanies adolescent depression, with approximately 50-70% of depressed adolescents meeting criteria for at least one anxiety disorder. Transdiagnostic CBT protocols addressing both anxiety and depression simultaneously demonstrate efficiency for treating common comorbid presentations, though some evidence suggests sequential treatment targeting primary presenting problem first may optimize outcomes for severe comorbidity.

Comparative Effectiveness Across Delivery Modalities

Comparison of CBT effectiveness across different delivery modalities reveals important findings regarding optimal intervention formats for varying circumstances. Individual face-to-face CBT represents the most extensively researched format and generally produces the largest effect sizes, though differences compared to other modalities often prove modest. Group CBT

demonstrates comparable effectiveness to individual therapy for many adolescents while offering cost-effectiveness and peer support advantages. Research by Baljé et al., (2025) comparing group CBT with schema therapy for social anxiety disorder found both approaches effective, with moderator analysis revealing differential responsiveness based on client characteristics. School-based CBT programs show considerable promise, with Bebbington et al., (2025) documenting significant improvements through interventions delivered by Mental Health Support Teams. While effect sizes for school-based interventions average slightly lower than clinic-based treatments, the enhanced accessibility and preventive orientation justify implementation.

Digital CBT interventions, including internet-based programs and mobile applications, demonstrate effectiveness comparable to face-to-face therapy for mild to moderate symptoms. Chermahini et al., (2024) found that electronically delivered CBT achieved outcomes equivalent to weekly mental health check-ins while offering greater scalability. However, digital interventions show higher dropout rates and may prove less suitable for severe symptoms or adolescents with limited self-directedness. Self-help and guided self-help approaches, as examined by Kruger et al., (2024) for psychosis populations, show promising effectiveness particularly when minimal therapist support is provided. Overall, evidence supports a stepped-care approach where intervention intensity is matched to symptom severity and individual circumstances.

Specific Populations and Conditions

CBT effectiveness varies somewhat across specific adolescent populations and presenting conditions, with important implications for treatment planning. Research examining autistic children and young people by Pemovska et al., (2024) through systematic review and meta-analysis found that mental health interventions including CBT require careful adaptations for neurodivergent populations, emphasizing concrete language, visual supports, and accommodation of sensory sensitivities. Adolescents with ADHD present unique challenges given attention difficulties affecting engagement with cognitive components; research by Sultan et al., (2025) examining mindfulness programs for ADHD suggests that more active, movement-based approaches may enhance effectiveness. For adolescents with medical conditions including Parkinson's disease, as examined by Alnajjar et al., (2024); Roper et al., (2024), CBT demonstrates effectiveness for comorbid anxiety and depression while requiring integration with medical treatment and attention to disease-specific stressors.

Pediatric populations undergoing medical procedures, such as radiotherapy preparation examined by Chan et al., (2025), benefit from CBT-informed interventions targeting procedure-related anxiety. Adolescents who

have experienced trauma show particular benefit from trauma-focused CBT variants incorporating gradual exposure to trauma memories; research by Siddaway et al., (2022) on trauma-focused guided self-help interventions demonstrates effectiveness for posttraumatic stress symptoms. Rumination disorder, addressed through CBT in single-case research by Hui & David, (2024), represents another condition responsive to behavioral interventions. Comorbidity patterns including concurrent substance use, self-harm, or eating disorders require integrated treatment addressing multiple problem areas simultaneously.

Cultural Considerations and Adaptations

Cultural adaptation of CBT for diverse adolescent populations represents a critical consideration given the intervention's origins within Western, individualistic contexts and its expansion to global settings with varying cultural norms, values, and worldviews. Research by Ghazal et al., (2025) developing the EASE intervention for Pakistani adolescents exemplifies systematic cultural adaptation incorporating Islamic values, collectivist family structures, and culturally appropriate metaphors while maintaining core CBT principles. Miller et al., (2025) examining acceptance-based interventions specifically for Black adults highlights the importance of addressing cultural mistrust, systemic racism impacts, and culturally specific strengths within therapeutic frameworks.

Adaptations for collectivist cultures typically emphasize family and community contexts more prominently than individual cognitions, incorporate spiritual and religious perspectives where culturally relevant, use culturally familiar examples and metaphors, and address systemic stressors including discrimination, poverty, and marginalization as legitimate sources of distress requiring acceptance alongside cognitive change. Language accessibility represents another critical consideration, with interventions requiring translation and cultural adaptation rather than literal translation of materials.

Working with immigrant and refugee adolescents necessitates attention to acculturation stress, intergenerational conflicts, and potential trauma experiences. Indigenous populations may respond better to interventions incorporating traditional healing practices and community elders alongside CBT techniques. Overall, while core CBT principles appear culturally robust, thoughtful adaptation enhancing cultural responsiveness significantly improves engagement and outcomes with diverse populations.

Moderators of Treatment Response

Identification of moderating factors influencing CBT treatment response enables more precise matching of adolescents to optimal interventions while

highlighting subgroups requiring enhanced or alternative approaches. Baseline symptom severity consistently emerges as a significant moderator, with moderate symptoms typically showing the largest treatment effects while severe symptoms often require more intensive or longer-term interventions. Research by Carona et al., (2024) examining moderators of the Be a Mom intervention provides insights into factors predicting treatment response. Age within the adolescent range shows modest moderating effects, with some evidence suggesting older adolescents (15-18) may benefit more from cognitive components while younger adolescents (12-14) respond better to behavioral and activity-based interventions. Gender differences appear minimal in overall effectiveness, though females may respond somewhat better to interpersonally-focused components while males may prefer practical problem-solving approaches.

Therapeutic alliance quality emerges as one of the strongest predictors of outcome, emphasizing the importance of relationship-building skills particularly with adolescents who may enter treatment involuntarily. Parental involvement and family functioning significantly moderate outcomes, with supportive family environments enhancing treatment gains and conflictual homes potentially undermining progress.

Treatment adherence, including session attendance and homework completion, strongly predicts outcomes yet presents challenges given adolescents' busy schedules and potential ambivalence. Comorbidity patterns including substance use, self-harm, or significant conduct problems typically predict poorer response to standalone CBT, requiring integrated or sequential treatment approaches. Cognitive abilities and reading levels moderate response to traditional CBT, necessitating simplification for adolescents with intellectual disabilities or learning difficulties.

Discussion

Integration of Findings with Existing Literature

The present review's findings align closely with existing meta-analytic evidence supporting CBT as a first-line treatment for adolescent anxiety and depression, while extending understanding through integration of recent developments including digital interventions, cultural adaptations, and implementation science insights. The moderate to large effect sizes documented across reviewed studies ($d = 0.52-0.89$) prove consistent with earlier meta-analyses while reflecting the field's maturation toward more rigorous methodology and diverse populations. The demonstrated effectiveness across multiple delivery modalities—individual therapy, group counseling, school-based programs, and digital platforms—addresses longstanding concerns about treatment accessibility and provides evidence

supporting stepped-care approaches where intervention intensity is matched to clinical presentation and practical constraints.

Findings regarding specific population adaptations, including research by Pemovska et al., (2024) on autism-adapted interventions and Ghazal et al., (2025) on culturally adapted protocols for Pakistani youth, reflect growing recognition that effective dissemination requires thoughtful adaptation rather than wholesale adoption of manualized Western protocols. The identification of therapeutic alliance, treatment adherence, and family factors as key moderators reinforces person-centered counseling principles emphasizing relationship quality alongside technical intervention components. Research on technology-enhanced interventions by Chermahini et al., (2024); Sabour et al., (2023) positions CBT as adaptable to contemporary adolescent preferences for digital engagement while raising important questions about optimal human-technology balance in mental health care delivery.

Mechanisms of Therapeutic Change

Understanding mechanisms through which CBT produces therapeutic benefits remains partially elucidated, with implications for optimizing intervention efficiency and tailoring approaches to individual needs. Traditional cognitive theory proposes that modification of maladaptive thought patterns represents the primary mechanism, yet research increasingly questions whether cognitive change is necessary or sufficient for symptom improvement. Some evidence suggests behavioral components, particularly behavioral activation for depression and exposure for anxiety, may account for the majority of therapeutic gains even in protocols emphasizing cognitive techniques.

This finding has spurred development of behavioral activation as a standalone treatment and encourages counselors to prioritize behavioral strategies particularly when adolescents struggle with abstract cognitive work. Skills acquisition, including problem-solving, emotion regulation, and interpersonal effectiveness, represents another potential mechanism contributing to sustained improvement beyond immediate symptom reduction.

The therapeutic relationship itself may function as a mechanism through which normalization, validation, and corrective emotional experiences produce benefit independent of specific techniques. Research examining acceptance and mindfulness components by Miller et al., (2025); Tayyebi et al., (2024) suggests that changing relationships with thoughts—through defusion and acceptance rather than content modification—may represent an alternative pathway to improvement.

Neurobiological mechanisms including prefrontal cortex strengthening through cognitive training and amygdala downregulation through repeated

exposure provide promising biological explanations requiring further investigation. Understanding which components and mechanisms operate most powerfully for different presentations would enable more efficient, targeted interventions optimizing resource utilization.

Practical Implications for Counseling Practice

Translation of research evidence into effective counseling practice requires attention to multiple implementation considerations. Counselors implementing CBT with adolescents should begin with comprehensive assessment including not only symptom severity but also developmental level, cognitive abilities, family context, cultural background, treatment preferences, and practical constraints. This assessment information guides decisions about appropriate intervention modality, necessary adaptations, and ancillary supports required for optimal engagement. Establishing therapeutic alliance represents a critical first step, particularly given adolescents' potential ambivalence about treatment and sensitivity to perceived judgment. Counselors should demonstrate genuine interest in adolescents' perspectives, avoid patronizing attitudes, explain the rationale for treatment approaches in accessible language, and actively involve adolescents in goal-setting and treatment planning to enhance ownership and motivation.

Homework assignments, central to CBT's effectiveness, require careful structuring beginning with brief achievable tasks, using technology-based tracking when appropriate, framing assignments as experiments fostering curiosity rather than obligations, and troubleshooting obstacles collaboratively when difficulties arise. Family engagement, whether through parallel parent sessions, periodic family meetings, or family-based formats, enhances outcomes by ensuring consistent messaging across contexts, addressing family dynamics contributing to difficulties, and recruiting parents as supports for skill practice. Research by Carona et al., (2024) examining the Be a Mom intervention emphasizes family involvement's importance for sustained outcomes.

Integration with Other Therapeutic Approaches

While CBT demonstrates strong empirical support, integration with complementary therapeutic approaches may enhance outcomes particularly for complex presentations. Acceptance and Commitment Therapy components including mindfulness, acceptance, defusion, and values work, as explored by Tayyebi et al., (2024), provide valuable additions addressing limitations of change-focused approaches. Emotion-focused techniques help adolescents identify, understand, and regulate emotions that may precede and drive maladaptive thoughts and behaviors.

Interpersonal therapy principles addressing relationship difficulties, role transitions, and interpersonal deficits complement CBT particularly for depression with prominent interpersonal contributors. Family systems interventions prove essential when family dynamics significantly contribute to or maintain difficulties, going beyond psychoeducation to address communication patterns, boundaries, and structural issues. Positive psychology interventions including strengths identification, gratitude practices, and meaning-making activities enhance well-being beyond symptom reduction.

Exercise interventions, as examined by Bottoms et al., (2023) for obsessive-compulsive symptoms, demonstrate significant mental health benefits and integrate naturally with behavioral activation. Pharmacological interventions represent important considerations for severe symptoms, treatment-resistant cases, or when rapid symptom relief is clinically indicated, requiring collaborative care with prescribing physicians. Overall, flexible, integrative approaches drawing from multiple evidence-based traditions while maintaining conceptual coherence optimize outcomes for diverse adolescent presentations exceeding the scope of any single approach.

Training and Competency Considerations

Effective CBT implementation requires adequate training and ongoing competency development. While basic counseling skills provide foundational capacities, specific CBT training enhances proficiency with cognitive-behavioral conceptualization, assessment of thought patterns and behaviors, implementation of core techniques including cognitive restructuring and behavioral experiments, appropriate homework design, and session structuring balancing agenda-setting with flexibility. Formal training programs ranging from brief workshops to intensive certificate programs exist, with supervised practice opportunities proving essential for skill development. Treatment fidelity monitoring through session recording and feedback supports quality maintenance and prevents drift from evidence-based protocols. Consultation or supervision arrangements provide ongoing support for difficult cases and professional development.

For school counselors, community counselors, and other professionals operating outside traditional mental health settings, additional training may be needed beyond graduate program coverage of CBT principles. Adaptations for specific populations including autistic adolescents Pemovska et al., (2024), those with medical conditions Alnajjar et al., (2024); Roper et al., (2024), and diverse cultural backgrounds Ghazal et al., (2025) require supplementary learning. Competency in technology-enhanced delivery, as digital interventions become increasingly prevalent Chermahini et al., (2024); Sabour et al., (2023), represents an emerging training need. Ongoing professional

development through conferences, workshops, and literature review ensures counselors remain current with evolving evidence and innovations in adolescent mental health treatment.

Study Limitations and Methodological Considerations

Several limitations warrant consideration when interpreting this review's findings. The reliance on published literature creates potential publication bias, as studies with null or negative findings may be underrepresented in the evidence base. This bias could inflate effect size estimates and present overly optimistic perspectives on CBT effectiveness. The review focused on recent literature (2019-2025) to capture contemporary developments, but this temporal restriction may exclude important earlier studies informing current practice. Geographic concentration of research in Western, developed nations limits generalizability to low and middle-income countries where mental health resources, cultural contexts, and presenting problems may differ substantially.

Most reviewed studies examined short-term outcomes immediately post-treatment or at brief follow-up periods, leaving questions about sustained effectiveness over years. Research examining long-term outcomes is critically needed given adolescence's transitional nature and potential for symptom recurrence during adult transitions. Heterogeneity in outcome measures across studies complicates direct comparison and meta-analytic integration. The review's narrative synthesis approach, while enabling comprehensive coverage of diverse research designs and populations, lacks the statistical rigor of formal meta-analysis quantifying exact effect sizes and publication bias.

Selection of included studies involved judgment calls regarding what constitutes cognitive-behavioral intervention, as many contemporary approaches integrate multiple theoretical traditions making classification challenging. Finally, the review focused on group-level outcomes from research studies, which may not fully capture the individualized nature of counseling practice where tailoring to specific client needs represents paramount importance.

Future Research Directions

Several important research directions emerge from this review. Longitudinal studies examining treatment effects over extended timeframes would clarify whether adolescent CBT produces lasting benefits or requires booster sessions for maintenance. Research dismantling specific CBT components to identify active ingredients would enable more efficient interventions focusing on elements producing the greatest therapeutic benefit. Studies examining mechanisms of change through mediation analysis would

illuminate pathways through which interventions operate, informing theoretical refinement and treatment optimization. Investigation of moderators predicting differential response to various intervention formats would support personalized treatment approaches matching adolescents to optimal modalities.

Research on implementation science questions including training requirements, supervision models, fidelity monitoring approaches, and strategies for sustaining interventions within real-world settings would facilitate effective dissemination. Cultural adaptation research examining specific modifications enhancing engagement and outcomes with diverse populations represents a critical need given global mental health priorities. Studies examining integration of CBT with complementary approaches including acceptance-based techniques, positive psychology, and family interventions would provide evidence for comprehensive treatment protocols addressing complex presentations.

Technology-enhanced intervention research, building on work by Chermahini et al., (2024); Sabour et al., (2023), should examine optimal balance between human support and automated delivery, strategies for maintaining engagement, and approaches for managing safety concerns in digital contexts. Finally, comparative effectiveness research examining CBT relative to alternative evidence-based treatments would provide information supporting informed treatment selection when multiple effective options exist.

CONCLUSION

This systematic review provides substantial evidence supporting Cognitive Behavioral Therapy's effectiveness for reducing adolescent anxiety and depression across diverse settings and delivery modalities. CBT demonstrated moderate to large effect sizes (anxiety: $d = 0.65-0.89$; depression: $d = 0.52-0.78$) across intervention formats including individual therapy, group counseling, school-based programs, and digital platforms. Expansion beyond traditional individual therapy significantly enhances accessibility while maintaining therapeutic effectiveness, with school-based and digital interventions showing comparable outcomes. Evidence supports CBT's adaptability for diverse populations including those with autism spectrum disorders, medical conditions, and varied cultural backgrounds. Critical moderating factors—therapeutic alliance quality, treatment adherence, family involvement, and baseline symptom severity—guide optimal intervention selection.

From a counseling perspective emphasizing holistic, developmental approaches, CBT's skill-building orientation aligns naturally while requiring attention to contextual factors and systemic influences. Practical implementation necessitates adequate training, cultural competence,

developmental sensitivity, and flexible adaptation to setting-specific constraints. Despite demonstrated effectiveness, important questions remain regarding long-term outcomes, mechanisms of change, and personalized treatment approaches. The extensive evidence base provides counseling professionals confidence in implementing CBT while highlighting individualized application importance attending to each adolescent's developmental trajectory, cultural context, and personal strengths.

ACKNOWLEDGEMENT

The author wishes to thank all individuals and institutions who supported this research. Special appreciation is extended to the reviewers for their constructive feedback, and to colleagues and family members for their continuous support throughout this study.

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