Integrating Mental Health Services in Primary Care: A Solution to Limited Access

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Abstract

Project Title: Integrating Mental Health Services in Primary Care: A Solution to Limited Access

Purpose: This quantitative DNP project evaluates the effectiveness of COPE, a seven-week cognitive-behavioral therapy (CBT) primary care intervention, in reducing anxiety and depression symptoms among adolescents aged 12-17 in a pediatric clinic setting.

Background and Significance: Anxiety and depression rates among adolescents have significantly increased in recent years, leading to delays in care and exacerbating the shortage of available services. Integrating mental health into primary care settings provides a solution by expanding care access.

Methods: The Health Promotion Model (HPM) by Nola Pender is the theoretical framework that guided the project. Adolescents who met the inclusion criteria outlined by the Arizona State University (ASU) Institutional Review Board (IRB) were recruited during routine visits by the clinic nurse practitioner. The program was delivered by a DNP student and trained team members to seven participants over several months. Anxiety and depression levels were measured using GAD-7 and PHQ-9, which are well-established and validated tools for assessing anxiety and depression at baseline, mid-intervention, and post-intervention. Of the seven participants, five dropped out before completion, leaving three participants who completed the full intervention (n=3).

Outcomes/Results: The average pre-intervention GAD-7 score was 12.00 (SD = 3.46), the average mid-intervention score was 9.00 (SD = 6.24), and the average post-intervention score was 6.67 (SD = 3.79). For the PHQ-9, the average pre-intervention score was 12.00 (SD = 5.57), the average mid-intervention score was 11.33 (SD = 9.24), and the average post-intervention score was 7.67 (SD = 6.03). Given the small sample size, descriptive statistics were used to

display the results instead of inferential statistics. Post-intervention results showed reductions in both GAD-7 and PHQ-9 scores compared to baseline.

Conclusion: COPE demonstrated potential in reducing anxiety and depression symptoms, but the high attrition rate indicates a need for improved retention and recruitment strategies. Future research should explore barriers to program completion and assess the long-term effects of COPE on adolescent anxiety and depression.

Keywords: Cognitive Behavioral Therapy, Creating Opportunities for Personal Empowerment, COPE, COPE2Thrive, Behavioral Health Integration, Primary Care

Integrating Mental Health Services: A Solution to Limited Access

Untreated mental illness and lack of early interventions potentiate detrimental outcomes for children and adolescents, including depression, anxiety, substance abuse, and suicide. The increase in these mental health disorders places a demand on healthcare workers and organizations to provide access to quality care. Currently, the number of individuals who require resources outweighs the services and professionals available to provide treatment or support. Given these circumstances, there is a need for solutions. Throughout the literature, evidence supports the use of behavioral health interventions in primary care settings to address this disparity.

Problem Statement

The need for supportive services among the child and adolescent population in the United States (U.S.) has become critical, as only 20% of those with mental health disorders receive services for their conditions (Centers for Disease Control, 2023b). The young demographic is heavily impacted by untreated mental illness, leading to problems with emotional dysregulation (Motillon-Toudic et al., 2022) and increased social isolation (Benton et al., 2021), which are both risk factors for impaired functioning and suicide. In recent years, suicide has emerged as the second leading cause of death in the U.S. among children and adolescents ages 10-14 (Centers for Disease Control, 2023a; Centers for Disease Control, 2023c). According to data from the Centers for Disease Control (2023b), rates of hopelessness among primarily adolescent females in the U.S. have increased by 60% in the past decade, leading to higher rates of females experiencing suicidal ideation and completing suicide. Furthermore, increases in sexual violence (Centers for Disease Control, 2023a), substance abuse, and worsening mental health conditions

are found to be prevalent among this group (Berryhill et al., 2022; Centers for Disease Control, 2023c) further exacerbating the mental health crisis.

Themes in the literature relating to these obstacles include low socioeconomic status, limited provider availability, and geographical constraints, which contribute to adverse mental health outcomes (Centers for Disease Control, 2023c; Mancini et al., 2022; Melnyk, 2020). Researchers have found that social determinants of health, such as financial status, insurance plans, and living in underserved areas, affect a family's ability to receive therapy and psychiatric care (Mancini et al., 2022; Melnyk, 2020). The Centers for Disease Control's (2023c) practice guidelines emphasize the need for mental health programs, screening tools, and treatment modalities in primary care and school settings, such as Cognitive Behavioral Therapy (CBT), mindfulness-based interventions (MBI), and school-based counseling services. There are several emerging programs designed to provide CBT-based interventions for the young population outside of therapists and psychiatric professionals (Herbst et al., 2020; Mancini et al., 2022; Melnyk, 2020; Purtle et al., 2020).

Purpose and Rationale

Multiple contributing factors make the issue of access to mental health care a top priority. The COVID-19 pandemic resulted in increased isolation and untreated mental health disorders, leading to a greater demand for services among children and adolescents (Herbst et al., 2020; Mancini et al., 2022; Melnyk, 2020; Purtle et al., 2020). The purpose of this paper is to examine the current best practices for integrative care and preventative measures in reducing the adverse outcomes and barriers to mental healthcare in the U.S. When appropriately delivered, integrative behavioral health programs in primary care can improve functioning and quality of life for the

pediatric population (Centers for Disease Control, 2023c; Herbst et al., 2020; Mancini et al., 2022; McCabe et al., 2020 Melnyk, 2020; Moitra et al., 2023).

Background/Significance

Limited access to mental healthcare in the U.S. continues to impact individuals who cannot access these essential resources (Berryhill et al., 2023; Moitra et al., 2023). By the year 2025, an estimated additional 15,000 psychiatric providers and 57,490 psychologists are required to address the issue effectively (Purtle et al., 2020). Additionally, limited care access is pervasive across all ages and backgrounds, as evidenced by the estimated ninety million Americans who live in underserved areas, mostly involving rural towns where resources are scarce (Berryhill et al., 2022). Undertreated mental health disorders will have detrimental future impacts in economic, social, and healthcare domains if the problem continues to escalate (Moitra et al., 2023). This may include loss of productivity in the workforce and increased healthcare costs due to more frequent inpatient hospitalizations and emergency department visits. These adverse effects have negative repercussions on children, especially while they are still developing and more susceptible, creating problems with substance abuse, suicide, and isolation (Berryhill et al., 2022).

Children and Adolescents

In recent years, reports of anxiety and depression among the pediatric population have increased exponentially, with researchers finding they have doubled in frequency since the global pandemic (Berryhill et al., 2022; Macroni et al., 2023; Mancini et al., 2022; Melnyk, 2020). Furthermore, escalating unemployment rates, economic decline, and rising costs in the U.S. create significant stressors on individuals and families. This strain is particularly challenging in lower-income areas, where it exacerbates issues such as food insecurity, safety concerns,

deteriorating health, and domestic violence (Berryhill et al., 2022; Mancini et al., 2022; Purtle et al., 2020). These circumstances amplify stressors within family dynamics and increase the prevalence of depression and anxiety among children due to their vulnerability in the situation (Purtle et al., 2020). Mental health disorders like depression contribute to increased suicides, psychiatric hospitalizations (Melnyk, 2020), substance use disorders (Macroni et al., 2023), and behavioral disturbances such as aggression (Roche et al., 2022). The current mental healthcare needs of individuals in the U.S. place a high demand on healthcare workers by increasing patient ratios and costs for both the patients and the healthcare system (Melnyk, 2020; Purtle et al., 2020).

Several barriers to care exist presently, including limited providers, traveling distance (Mancini et al., 2022), and the continued stigma surrounding care (Berryhill et al., 2022). Additionally, high costs create a barrier to care for families and a financial strain on the U.S. healthcare system, with upwards of 14,000 dollars spent on hospitalizations per patient in a psychiatric emergency (Melnyk, 2020). Mental healthcare costs are significantly higher than other disease processes in the U.S. due to their prevalence and lack of preventative measures, according to Melnyk (2020).

Integrative Approach

Current evidence strongly supports the need for early and effective community-based interventions for the pediatric population struggling with mental health disorders such as Creating Opportunities for Personal Empowerment (COPE) in schools and clinic settings (Berryhill et al., 2022; Carr & Stewart, 2019; Centers for (Disease Control, 2023c; Herbst et al., 2020; Lorentzen et al., 2020; McCabe et al., 2020; Melnyk, 2020; Moitra et al., 2023). The recurrence of mental health disorders is prevalent and worsens over time, but solutions such as

CBT programs in primary care settings demonstrate efficacy in treating these disorders (Berryhill et al., 2022; Purtle et al., 2020). Current research shows that CBT and suicide prevention programs designed for delivery in the primary care setting, such as COPE, improve outcomes such as a reduction in symptoms and mitigate the risk of suicidality (Berryhill et al., 2022; McGovern et al., 2019; Melnyk, 2020; Moitra et al., 2023; Roche et al., 2022).

With the population of young children and adolescents, the most beneficial approach is implementing these programs within schools such as Social-Emotional Learning (SEL) (Mancini et al. (2022) and outpatient clinics with CBT-based programs like COPE (Melnyk, 2020) using a community-based approach (Berryhill et al., 2022; Carr & Stewart, 2019; Centers for Disease Control, 2023c; Herbst et al., 2020; Mancini et al., 2022; McCabe et al., 2020; Melnyk, 2020). In rural areas where specialized mental healthcare is inaccessible, these approaches are beneficial and enable an interdisciplinary approach to comprehensive treatment (Hart et al., 2019; Mancini et al., 2022; Melnyk, 2020; Purtle et al., 2020).

Mancini et al. (2022) discuss how several healthcare facilities are taking steps to address the mental health disparity in primary care; however, without a comprehensive approach with consideration of prevention and social factors, these attempts are operating similarly to a symptom management approach and not addressing the heart of the issue. Furthermore, many primary care providers and school employees report feeling poorly equipped to help fill this gap. Utilizing screening tools for mental health diagnoses, such as Patient Health Questionnaires (PHQ), is beneficial in early intervention but is often not used in primary care due to the lack of resources to address the concerns once they are identified (Melnyk, 2020).

Shortage of Providers

The existing approach for addressing mental health issues among the young population involves making appointments or obtaining referrals to mental health providers where individuals are given resources for medication management and therapeutic services (Mancini et al., 2022). While various therapeutic modalities exist, Cognitive Behavioral Therapy (CBT) stands out as the most utilized gold standard. (Purtle et al., 2020). While the research shows efficacy for a combination of therapy and pharmacological interventions, care may be delayed for months. The wait times further exacerbate the risk of psychiatric hospitalization, as untreated symptoms escalate during this time. Nearly half of all mental health admissions in the U.S. are related to depression and anxiety, comprising $1.33 billion in annual healthcare costs (Melnyk, 2020). As the public health crisis intensifies, there has been a surge in inpatient stays at behavioral health facilities, particularly among youth (Melnyk, 2020). Consequently, health delivery in a primary care setting is often a symptom management approach and medications with referrals to specialists (Mancini et al., 2022).

Improved Outcomes

In the future, the aim is to enhance various facets of mental healthcare for pediatric patients through integrated behavioral interventions. With more programs that implement CBT models integrated into primary care and communities, preventative care could become the forefront of mental healthcare in the U.S. (Carr et al., 2019; Mancini et al., 2022; Melnyk, 2020; Purtle et al., 2020). These programs have other positive implications, such as cost reduction for individuals, families, and the healthcare system with reduced hospitalizations and worsening symptoms of mental illness (Melnyk, 2020). Researchers have found that building increased resilience in children and adolescents improves outcomes for their mental health and well-being

(Mesman et al., 2021). The community-based model will help create a comprehensive look at mental health and allow for reduced stigmatization (Herbst et al., 2020; Mesman et al., 2021).

Internal Evidence

Mental health disturbances among children and adolescents have been on the rise in the U.S. in recent years. Barriers to care identified throughout the literature include inadequate resources, limited providers, low socioeconomic status, stigma, and lack of transportation. Care must be accessible to these individuals to promote prevention and decrease adverse outcomes such as psychiatric hospitalizations and suicide. The trend in current research is to create accessible care through the integration of services in schools and primary care.

A small pediatric clinic in southwest Arizona is working to address this issue in their community of children and adolescents. Their mission is to provide preventative and accessible care to their patient population. They identified that many of their patients are frequently waiting weeks to months to receive care for a psychiatric or behavioral health concern. They understand that immediate treatment and interventions can increase positive outcomes for their patients. To address this disparity, clinic leadership recognized a need for an official pilot of an evidence-based CBT program called COPE (Hart et al., 2019; McGovern et al., 2019; Melnyk, 2020). The aim was to expand the program to reach more patients by distributing the intervention among more members of the team.

PICOT Question

Given the prevalence of anxiety and depression among pediatric patients, there's a need for effective interventions in primary care settings. Exploring the impact of the COPE intervention in these facilities is imperative. This poses the question: In pediatric patients with anxiety and depression, how does piloting the implementation of the COPE intervention within

the primary care setting, compared to no intervention, result in improved mental health outcomes for anxiety and depression?

Search Strategy

A total of three databases were included in the search for appropriate literature: Medline, PubMed, and PsycInfo. Keywords used were *Creating Opportunities for Personal Empowerment, Creating Opportunities, COPE, COPE2Thrive, Cognitive Behavioral Therapy, Primary Care, Children, Pediatrics, Adolescents, Teens, Teenagers, Anxiety, Depression, Mental Health, Outcomes, Efficacy, Limited Access*. Limits applied included clinical trials, systematic reviews, English language, and literature published within the last five years upon the start of the search in February of 2024. Inclusion criteria were studies related to Creating Opportunities for Personal Empowerment (COPE), other Cognitive Behavioral Therapy (CBT) interventions utilized in primary care or with the pediatric population, mental health programs in primary care settings, children and adolescent population, and adult population if relevant to COPE intervention due to limited pediatric results.

PubMed's *similar article search* tool was utilized as another method to find related articles. Reference lists from appropriate studies were reviewed for similar articles on the explored topics. Narrowed searches that were specific to primary care mental health integration and COPE program were chosen.

In each of the three databases, one or two-term searches specific to COPE intervention were used. Since this intervention is referred to by its full name *Creating Opportunities for Personal Empowerment*, *COPE,* and *COPE2Thrive*, these terms were in varying combinations. The terms *COPE* and *Creating Opportunities for Personal Empowerment* used were initial searches that yielded 19,084 results in PubMed, and 2,561 results in Medline. PsycINFO's initial

search was *COPE* or *Creating Opportunities for Personal Empowerment* and *teens* or *adolescents* or *children* and *mental health* yielding 12,475 results. Subsequent searches in each database were done to narrow searches by adding fewer or more terms in different combinations. PubMed yielded a higher number of relevant articles relating to COPE, primary care, and cognitive behavioral therapy; therefore, most of the articles relating to these interventions were found in this database.

In PubMed, other combinations such as *Creating Opportunities* and *Teens* or *COPE* and *COPE2Thrive* narrowed the search results further. *COPE2Thrive* by itself yielded seven results on PubMed that were rapidly appraised for appropriateness. *COPE* or *Creating Opportunities for Personal Empowerment* and *Children* yielded 44 results on PubMed. The term *pediatric* expanded the search to 553 which yielded 12 studies for rapid appraisal. Different combinations were used until saturation of literature was achieved. The studies were reviewed and the final yield for critical appraisal was 19. Of the 19 studies, 10 were chosen based on inclusion criteria. The final 10 studies include four Randomized Control Trials (RCT), five Quasi-Experimental studies, and one cohort study.

Critical Appraisal and Synthesis of Evidence

The ten studies selected in Appendix A were critically evaluated using a rapid appraisal tool developed by Melnyk and Fineout-Overholt (2019). Levels of evidence from the selected studies ranged from levels I- III and included randomized controlled trials, quasi-experimental studies, and systematic reviews with meta-analysis. All studies were published within the last five years in the English language. Apart from the study by Lorentzen et al. (2020), research was conducted in the U.S. The studies involved the child and adolescent population ages 8-18 except

for two studies (see Appendix A, tables 2 and 4) which were chosen to demonstrate the most robust efficacy of CBT and the latest research for the COPE program.

Several themes were identified and explored in the literature. The first is youth struggling with depression and anxiety that has worsened since the COVID-19 pandemic. This theme is ubiquitous throughout the research and emphasized using terms such as *epidemic* and *crisis* among the youth. Many researchers examined the detrimental impacts of mental health-related issues and the effects across the lifespan, including suicide risk and repeat hospitalizations. Furthermore, the scarcity of resources and limited mental health providers were mentioned frequently. Contributing factors such as rural areas, low socioeconomic status, and transportation issues were often mentioned as common barriers to mental healthcare. Lastly, themes such as Behavioral Health Integration (BHI) in primary care or CBT integration within the primary care setting were strong throughout the literature. Integrating mental health care into primary care was frequently discussed as a solution in several studies. The methods of delivery for primary care integration included nurses, nurse practitioners, and support staff in clinics and school settings. Most of the theoretical frameworks guiding research were related to cognitive and behavioral theories. One study used Cognitive Behavioral Skills Building (see Appendix A, table A3) and another used Cognitive Theory of Mental Disorders (see Appendix A, table A10). Various measuring tools were utilized to measure depression and anxiety scores before and after intervention was completed. The tools used in the study were validated using Cronbach's alpha and were otherwise well-established questionnaires used in the mental health field, such as Generalized Anxiety Disorder (GAD-7) or Patient Health Questionnaire (PHQ-9). Most studies demonstrated a statistically significant decrease in one or both scores, indicating a reduction in anxiety or depression symptoms. However, the limiting factors include that many of these

studies had small sample sizes, lacked control groups, and had limited generalizability. Overall, these ten studies provided evidence for the effectiveness of CBT interventions in primary care. Future research with stronger methods and larger sample sizes could enhance this evidence in the future, but the existing evidence provides a promising starting point.

Conclusion and Discussion

Existing evidence supports that the pediatric population is experiencing increased hopelessness, depression, and anxiety. Upon review of the literature, it is apparent that multiple barriers exist for this population to receive the care they need to address their needs, including limited providers in underserved areas and geographical constraints. Within the last five years, researchers have examined the effects of CBT interventions such as COPE on children and adolescents. Interventions surrounding the implementation of CBT administered by nurses and nurse practitioners in primary care settings appear to yield promising results for this age group, as evidenced by a decrease in symptoms post-intervention. This is an ideal setting for a modified CBT intervention since primary care offices are more accessible than mental health clinics and wait times are shorter. Overall, the researchers found these interventions to show significant improvements in anxiety and depression in adolescents. It can be concluded that programs such as COPE are a feasible option to address barriers and provide care to this population due to the existing evidence supporting them.

Theoretical Framework Application

The Health Promotion Model (HPM) by Nola Pender details the synchronistic relationship between individuals and their environment, including the social and psychological factors that impact health outcomes (Aqtam & Darawwad, 2018). The HPM framework was used to guide the implementation of COPE at the project site, as many of its concepts connected well

with the intervention and components of CBT. Furthermore, both health promotion and preventative care are important aspects of this model that aligned well with the goal of the clinic site, as they aimed to prevent the escalation of depression and anxiety in the young population. This organization's goal was to create a supportive and empowering environment for these children using COPE, anticipating that this would lead to positive outcomes.

The HPM identifies how cognition influences behavioral patterns, which directly parallel with the concepts of the COPE program. Additionally, this framework discusses how the examination of individuals' perceptions and motivations relating to health promotion can lead to change. Both models integrate thought pattern restructuring to shape emotions and behaviors, influencing overall health. The HPM emphasizes that self-efficacy is a key component in health promotion and behavioral change. A CBT modality, such as the COPE program at the pediatric clinic, helps empower children to become self-reliant, which fosters resilience due to their ability to work through cognitive distortions that worsen depression and anxiety. The HPM model is utilized to guide current evidence translation into practice, as it supports the incorporation of skill-building interventions as a solution to improve outcomes for these individuals.

Implementation Framework

The Rosswurm and Larrabee Model for change to evidence-based practice provides a structured framework that has the potential to address the existing gaps in mental healthcare. This model was used to guide the gathering of evidence and plan for the implementation of the COPE program in a primary care setting. Through the translation of best evidence to the practice setting, this model is useful in the implementation of CBT programs in primary care. Rosswurm and Larrabee (1999) outline a systematic process that begins with the identification of a gap within an organization by looking at the discrepancies between current practices and desired

outcomes. In the case of the project site, this includes access to mental health care for their pediatric patients. Based on the evaluation, a PICOT question was formed to examine how CBT in primary care can address anxiety and depression in the pediatric population. According to Rosswurm and Larrabee (1999), once robust evidence is gathered and appraised, it can then be synthesized to form a plan to address the gap within an organization. At the project site, this included addressing gaps in resources for the mental health needs of youth.

Implications for Practice Change

Based on the most recent evidence, cognitive behavioral programs such as COPE are instrumental in addressing anxiety and depression disorders in the pediatric population as well as providing preventative care to reduce exacerbations of mental health issues. These programs have often been used in a primary care setting while individuals are waiting to be seen by a mental health professional. The stakeholders at the clinic were nurse practitioners, the operations director, the management team, patients, and their families.

The pilot intervention included the implementation of COPE with the help of approved team members to provide a cost-effective approach to implementing this care, as well as allowing for more patients to be seen throughout the week due to more team member involvement. Patients between the ages of 12 and 17 were screened at the clinic for depression and anxiety using the well-established questionnaires GAD-7 and PHQ-9. Inclusion criteria depended on their score for both screening tools. A mild to moderate score on GAD-7 and a mild to moderate score on PHQ-9 were considered appropriate for intervention. Exclusion criteria included scoring in the “severe category” on both health questionnaires, endorsing suicidal or homicidal ideation, psychosis, or having other mental health issues that require treatment by mental health professionals. All those who met the criteria were able to participate in the 7-week

COPE intervention. GAD-7 and PHQ-9 scores were again measured during week four and week seven to assess changes in scores from baseline. Weekly suicide screening and mood were assessed by the team members to ensure safety. COPE provided access to mental health resources for several adolescents at their clinic who would have otherwise been waitlisted for mental health care.

Ethical Considerations

Ethical considerations were carefully reviewed before the recruitment and implementation of COPE at the clinic in Arizona. The Institutional Review Board (IRB) protocol from Arizona State University's (ASU) official website was drafted and submitted per their guidelines, outlining the important details of the project. This included a detailed explanation of the project's background and objectives, the purpose of the project, and the inclusion criteria. The methods and procedures were explained in detail to ensure transparency. Risks and benefits were included in the outline and documents, including informed consent forms for guardians. The IRB reviewed the protocol three times and sent back clarifying questions. Final approval was given on September 6, 2024, and recruitment began shortly after, in early September.

All adolescent participants and their guardians at the project site were fully informed of the purpose of the project and their rights to withdraw at any time without repercussion. Adolescent participants signed an assent form after meeting with a pediatric nurse practitioner recruiter, and guardians signed informed consent. Participants and their guardians were encouraged to ask clarifying questions and address potential concerns. Safety measures were considered by ensuring all participants were not actively endorsing suicidal ideation, homicidal ideation, self-harm, or psychosis as exclusion criteria. Patients were assessed weekly to maintain the safety guidelines outlined in the IRB protocol. All members of the COPE delivery team were

briefed on the crisis protocol if a patient endorsed suicidal ideation or homicidal ideation or exhibited aggressive behavior.

Setting and Population

The COPE program was implemented at a pediatric outpatient clinic in Arizona. The leadership team at this clinic value comprehensive approaches to care for their population ages 0-17 and their guardians. Given the global mental health crisis, they were experiencing an increase in mental health needs among their patients. The team sought to address this crisis using the preventative mental health program COPE. The evidence-based intervention was officially piloted at the clinic as part of this DNP project to help adolescent patients with mild to moderate anxiety and depression. The focus was providing preventative mental health care strategies for adolescents.

In September of 2024, IRB approved team members were trained to deliver the COPE intervention at the project site and took part in the official pilot of this program. The COPE training was designed by its founder, Dr. Bernadette Melnyk, and is included on the official COPE website (COPE2Thrive, n.d.). COPE is a series of seven half-hour sessions rooted in CBT concepts that teach adolescents to become aware of how their thoughts affect their feelings and behaviors. The manual teaches cognitive restructuring strategies to help the participants learn how to manage their negative thinking and behaviors.

This quality improvement project was built on the work of Erlich et al. (2019), Hart et al. (2019), Hutson & Mazurek Melnyk (2022), and McGovern et al. (2019). In these past studies, quasi-experimental pre-test/post-test designs took place to examine the efficacy of COPE in similar age groups. Like many of the prior studies on COPE, this project utilized valid mental

health assessment tools that measured levels of anxiety and depression at baseline, mid-intervention, and upon completion of the intervention.

Project Intervention Description

The implementation of COPE at the clinic started with the goal to address mental health concerns in the pediatric population and help improve outcomes for patients with anxiety and depression. The project was instrumental in targeting limited access to mental health care for this age group in southwest Arizona. This project explored the question: In pediatric patients with anxiety and depression, how does the implementation of the COPE intervention within the primary care setting, compared to no intervention, result in improved mental health outcomes for anxiety and depression?

The implementation process involved the internal recruitment of participants at the clinic based on their mental health questionnaire scores. Additionally, team members affiliated with ASU helped deliver this intervention. In September of 2024, the team began implementation of the COPE intervention to the selected pediatric participants over seven weeks in 30-minute increments. In a pretest/post-test design, baseline assessments were gathered beforehand in the format of standard mental health questions. Furthermore, scores from the Patient Health Questionnaire (PHQ-9) and Generalized Anxiety Disorder (GAD-7) are collected at the first, fourth, and seventh appointments to assess variance.

Project Timeline

The implementation process involved the internal recruitment of participants at the clinic based on their mental health questionnaire scores, completed by a nurse practitioner and therapist at the clinic. Furthermore, support from ASU was brought in to help deliver the intervention. In September 2024, the COPE intervention was implemented over seven weeks in 30-minute

increments. A deadline was set for implementation to finish in January 2025. In a pre-test/post-test design, baseline assessments were gathered beforehand in the format of standard mental health questions. Additionally, scores from the Patient Health Questionnaire (PHQ-9) and Generalized Anxiety Disorder (GAD-7) were collected at the first, fourth, and seventh appointments to assess variance. Data analytics were conducted in February of 2025 to determine if the COPE intervention influenced depression and anxiety scores for adolescents at the project site.

Plan for Data Collection and Analysis

Data analysis of the COPE intervention for adolescents was guided by the Rosswurm and Larabee Model. This model provided a framework for applying evidence-based research into practice and helped determine if an intervention is effective. The evaluation included the measurement of anxiety and depression severity through two standardized assessment questionnaires: GAD-7 and PHQ-9. Both tests are widely recognized, utilized, and accepted in healthcare. These tools are rooted in the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) and comprehensively assess the severity of symptoms, including sleep, appetite, mood, and motivation.

Previous studies involving COPE utilized the GAD-7 and PHQ-9 screening tools. These authors cited the validity of these tools in their research, finding them instrumental in determining the outcomes of the intervention (see Appendix A). Both PHQ-9 and GAD-7 have undergone rigorous validity testing, reinforcing their reliability. A recent study by Pranckeviciene et al. (2022) confirmed the strong psychometric properties of the PHQ-9 and GAD-7 assessments in mental health screening. The tests demonstrate internal consistency, with Cronbach's alpha scores of 0.86 for PHQ-9 and 0.91 for GAD-7. Confirmatory factor analysis

supported the model's validity, helping determine efficacy in assessing depression and anxiety severity. Sensitivity and specificity analysis distinguished individuals with and without these conditions to further confirm reliability (Pranckeviciene et al., 2022). Furthermore, Fonseca-Pedrero and colleagues (2023) found that the PHQ-9 assessment demonstrated robust criterion validity, sensitivity, and specificity, accurately determining if an adolescent is depressed. The authors confirm that PHQ-9 is an effective screening tool for adolescents, is suitable for initial screening, and can be used for ongoing monitoring of symptoms.

Final scores were calculated to indicate either an increase in symptoms of anxiety and depression, no significant change, or a decrease in symptoms. Statistical testing was conducted using Intellectus software. The initial plan was to conduct a paired t-test to determine significant differences between the scores from baseline, as well as an Analysis of Variance (ANOVA) test to assess changes across all time points in the project. A significance level of $p \leq 0.05$ would have been used to determine if the null hypothesis can be rejected. If results showed significant changes, Cohen's d effect size calculations would have helped determine the magnitude of the change. However, due to the small sample size ($n=3$), the p-value was not statistically significant, so descriptive statistics were used to present the results (See Appendix B).

Project data was gathered from the PHQ-9, and GAD-7 survey papers, including patient scores and demographic data. These records were stored securely and kept through the dissemination of the DNP project. Documents will be appropriately discarded after the spring of 2025. The information was stored at the clinic site, where all patient information was de-identified. Age, gender, and scores were placed into categories on a spreadsheet and later entered in Intellectus software for descriptive statistics and demographic data. The final scores were saved and kept on the computer. Participants and their guardians were informed before the

project that information is confidential, with complete privacy of any documentation relating to the process, and has gone through the IRB process.

Budget and Funding

The initial budget for project implementation and training at the project site was approximately $500. A meeting with team members and the CEO took place in the summer of 2024 to determine overall costs. The COPE delivery training costs $445, according to the official website. However, this was generously discounted to $89 per person by the COPE founder, Dr. Bernadette Melnyk. Her discount helped expand the number of people delivering COPE to participants. Five members of the COPE support team from ASU were trained, and the CEO of the project site agreed to cover the remaining costs, including the manuals for instructors and participants. The clinic covered all other indirect costs, such as writing materials and the private space required for each participant. There are no conflicts of interest to address relating to the funding of the project. All members of the COPE delivery team were volunteers, demonstrating their dedication to helping the adolescent population improve their mental health.

Results

Data were analyzed using Intellectus statistical software (Intellecus, 2023). Descriptive statistics were calculated for both categorical and continuous variables. Frequencies and percentages were used for categorical variables like Gender, Ethnicity, and Education. For continuous variables such as Age, Anxiety, and Depression scores, the mean, standard deviation, minimum, and maximum values were calculated to give a summary of their variability. The observations for Pre_Anxiety had an average of 12.00 (SD = 3.46, Min = 8.00, Max = 14.00). The Mid_Anxiety scores had an average of 9.00 (SD = 6.24, Min = 4.00, Max = 16.00), while the Post_Anxiety scores averaged 6.67 (SD = 3.79, Min = 4.00, Max = 11.00). Similarly, the

Pre_Depression scores had an average of 12.00 (SD = 5.57, Min = 7.00, Max = 18.00), with Mid_Depression scores averaging 11.33 (SD = 9.24, Min = 6.00, Max = 22.00), and Post_Depression scores averaging 7.67 (SD = 6.03, Min = 2.00, Max = 14.00). These statistics demonstrate a decrease in both anxiety and depression symptoms after the seven-week COPE intervention. However, the sample size was too small to suggest significance (n=3), thus no further testing was run. All participants who completed the program were female adolescents of Hispanic ethnicity.

Discussion

McGorry et al. (2025) explore how prevention is a key element in addressing the youth mental health crisis and overcoming the challenge of an imbalanced provider-to-patient ratio. In recent years, the national increase in youth anxiety and depression has prompted expanded access to effective mental health interventions and prevention. This DNP project addressed this need by providing access to a preventative intervention in a primary care setting and helped equip adolescents with the tools to manage their thoughts, behaviors, and emotions.

The COPE intervention was delivered to seven participants from September 2024 to January 2025 at varying timeframes. Of the seven participants, three completed the entirety of the workbook lessons. Those who completed all seven sessions were female adolescents of Hispanic ethnicity, and each experienced a decrease in PHQ-9 and GAD-7 scores from baseline. This suggests that the COPE intervention had a positive impact on these participants; although, no significant conclusions can be drawn due to the small sample size, prompting future projects to develop different approaches for program retention.

Limitations and Barriers/Challenges Encountered

Given the high attrition rate of this project, future projects could focus on uncovering and examining the barriers to completion of the seven-week COPE program, such as transportation, scheduling issues, dropout due to improvement or symptoms, length of program, or feeling the intervention is not effective. Examining these barriers within the context of the social determinants of health may also provide insight into socioeconomic factors and inequities that impact the effectiveness of COPE. Additionally, participation rates could have been impacted by the limited intervention time frame for recruitment. Other times of the year may yield a higher number of participants with increased retention rates and a longer recruitment timeframe. For this project, GAD-7 and PHQ-9 recruitment scores were limited to the mild to moderate category to ensure the intervention was appropriate for the level of care required and to prioritize safety

Connecting Findings to the Existing Literature

Since the start of this project, McKay et al. (2025) have published a ten-year review of research on primary prevention programs grounded in concepts of mindfulness and CBT in school systems. Such interventions show similarities with the framework of COPE and demonstrate efficacy in reducing symptoms of depression and anxiety in the youth. This further supports the positive impact of implementing preventive interventions in primary care settings to address the youth mental health epidemic. Furthermore, policies aimed at improving mental health care access with consideration to the social determinants of health would help support interventions like COPE and ensure equitable treatment for those needing these services. Healthcare organizations should advocate for policies at the local, state, and federal levels to increase access to mental health services, ensuring these interventions are sustained and expanded for future use.

Recommendations for Further Study

Given the challenges encountered in this pilot, future projects could focus on examining the barriers to completion of the COPE program, such as transportation issues, scheduling conflicts, and dropout rates due to either symptom improvement or perceived ineffectiveness of the intervention. The inclusion of a broader sample size by widening the criteria for younger children would result in more participants of all ages, which would add a new dimension of data for comparison. Extending recruitment and intervention periods could also provide more robust data. Additionally, exploring the impact of offering COPE to adolescents with more severe symptoms could yield valuable insights, though appropriate safety protocols would need to be included to ensure patient well-being.

Conclusion

Delayed access to mental health care in adolescents with anxiety and depression leads to worsening symptoms and increased risk of complications such as psychiatric hospitalization and suicide. Throughout the literature, there is evidence for primary care interventions like COPE that help reduce anxiety and depression symptoms in adolescents.

Preliminary findings showed a decrease in depression and anxiety symptoms based on standardized questionnaires among the three participants who completed the program. Although the data was not statistically significant due to the sample size, future studies should explore ways to increase retention by examining existing barriers to these interventions. Overall, this intervention has the potential to bridge the gap in the need for services, and can be implemented in various settings, allowing for increased accessibility. Officially piloting COPE at a small pediatric clinic in southwest Arizona helped provide a sustainable solution for accessible and preventive mental health care in this community.

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Appendix A

Evaluation and Synthesis Tables

Table A1

Evaluation Table for Quantitative Studies

Citation	Theory/ Conceptual Framework	Design/ Method/ Sampling	Sample/ Setting	Variables	Measurement/ Instrumentation	Data Analysis	Results/Findings	Level/ Quality of Evidence; Generalization
Erlich et al., (2019). Outcomes of a brief cognitive skills-based intervention (COPE) for adolescents in the primary care setting **Country: U.S.** **Funding:** funded by individual private donors, Baker-Roberts Family, John & Marcia Goldman Foundation, Wollenberg Foundation, Pearlstein Family	CBT- effective treatment for depression and anxiety. COPE is modeled after this framework. First line treatment for adolescents. Efficacy for improving outcomes in primary care.	**Design:** Quasi-Experimental Design. Pre-test/Post-test **Purpose:** determine if the cognitive behavioral therapy program COPE improved outcomes of anxiety and depression for teens in outpatient setting.	**N=** 37 **Demographics:** 73% female, 27% male. Ages 12-18. **Setting:** Primary care clinic **Exclusion:** Ages <12 or >19, having another PCP outside the clinic, developmental delays/cognitive impairments inhibiting full participation, patient in psychosis or requiring a higher level of care. **Attrition:** 14 patients, 13 female, 1 male. Not included in the reported outcomes.	**IV1:** COPE for teens program **DV1:** PHQ-A depression scores **DV2:** GAD-7 anxiety scores **DV3:** Patient's experience with program evaluation **Definitions:** Creating Opportunities for Personal Empowerment for Teens (COPE for Teens): time-limited, manualized, 30-minute intervention based on	**Tools:** PHQ-A and GAD-7 **Validity/ Reliability:** PHQ-A- High sensitivity and specificity for detecting clinically significant symptoms in the sample population. Used to form accurate diagnoses per the DSM-5.	**Statistical Tests Used:** Paired T-Tests for comparison of pre and posttests, thematic coding done for post-evaluation.	**DV1:** PHQ-A scores by 2.1 (p = 0.0067) **DV2:** GAD-7 scores by 2.3 (p = 0.0081) **DV3:** Demonstrated satisfaction with COPE.	**Level of Evidence:** Level 3-Quasi-Experimental **Strengths:** Simple but effective design, strong relevance to practice, demonstrated statistical significance among participants **Weakness:** small sample size, poor generalizability, concurrent medication use with some study participants possibly biasing results **Feasibility:** Could be utilized for DNP project and replicated among other populations/groups.

Key: **COPE** Creating Opportunities for Personal Empowerment, **CBT** Cognitive Behavioral Therapy, **CBSB** Cognitive Behavioral Skills Building, **CSM** Common Sense Model**, GAD** Generalized Anxiety Disorder, **PHQ** Patient Health Questionnaire, **DV** Dependent Variable, **IV** Independent Variable, **BDI** Beck Depression Inventory, **STAI** State-Trait Anxiety Inventory, **U.S.** United States, **PCP** Primary Care Provider, **DSM** Diagnostic and Statistical Manual of Mental Disorders, **PICOT** Patient, Intervention, Comparison, Outcome, Time, **DNP** Doctor of Nursing Practice

Citation	Theory/ Conceptual Framework	Design/ Method/ Sampling	Sample/ Setting	Variables	Measurement/ Instrumentation	Data Analysis	Results/Findings	Level/ Quality of Evidence; Generalization
Foundation, Palo Alto Foundation Medical Group, and Sutter Health **Bias:** Selection bias. Participants were selected in an affluent area.				evidence-based CBT				**Application:** Can be applied in primary care settings for children and teens struggling with anxiety and depression. Generalizable to other mental health conditions requiring CBT.
Hart et al., (2019). Decreasing depression and anxiety in college youth using the creating opportunities for personal	CBT is based on the theory that an individual's perception affects emotions and behaviors. COPE is	**Design:** Quasi-Experimental Design. Pre-test/Post-test **Purpose:** Determine if the cognitive behavioral therapy program COPE improved outcomes of	**N**= 10 **Demographics:** 19–23-year-old college students. DSM-IV confirmed diagnosis of anxiety	**IV1:** COPE **DV1:** BDI-II **DV2:** STAI **DV3:** Program evaluation **Definitions:** Creating Opportunities	**Tools:** BDI-II and STAI **Validity/ Reliability:** BDI-II: High coefficient alpha .93 for college students and .92 for	**Statistical Tests Used:** Paired T-tests, effect sizes, and p-values	**DV1:** BDI-II: 11.30 + 11.66); paired t (9) = 5.33, $p < .0001$ ($\eta 2 = .79$) **DV2:** STAI (41.70 + 11.66);	**Level of Evidence:** Level 3-Quasi-Experimental **Strengths:** Strong design, relevance to practice, demonstrated statistical significance among participants

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Citation	Theory/ Conceptual Framework	Design/ Method/ Sampling	Sample/ Setting	Variables	Measurement/ Instrumentation	Data Analysis	Results/Findings	Level/ Quality of Evidence; Generalization
empowerment program (COPE). **Country**: U.S. **Funding**: Stated that the authors received no financial support. **Bias**: sampling bias, selection bias, referral bias	modeled after this framework.	anxiety and depression for college students	and/or depressive disorder **Setting:** Recent or prior patients in the Student Health Services—Primary care **Exclusion:** Not explicitly stated **Attrition:** 3 of 13 participants dropped out. The remaining 10 were included.	for Personal Empowerment (COPE)	outpatients. Cronbach's alpha: .94 post-test: .98. STAI: test-retest correlations ranged from 73 to .86, demonstrating consistency and stability over time.		paired t(9) = 6.51, p < .0001) **DV3:** Sessions were helpful, changed how participants thought about themselves, and how they reacted to stressful situations.	**Weakness:** limited diversity, recent engagement in mental health services, small sample size, poor generalizability, no control group **Feasibility:** Feasible to be used for DNP project. **Application:** Can be applied in primary care settings to college students struggling with depression and anxiety. Applicable to PICOT question.
McGovern et al. (2019). COPE for asthma: Outcomes of cognitive behavioral intervention for children with asthma and anxiety. **Country:** U.S.	Embeds CBSB intervention into the CSM of illness representation and cognitive theory.	**Design:** Quasi-Experimental—Pretest/Posttest **Purpose:** assess the feasibility, acceptability, and initial effects of COPE intervention for children with asthma and anxiety.	N= 32 **Demographics:** Children ages 8-12 **Setting:** 3 different elementary schools **Exclusion:** other significant pulmonary conditions, currently receiving treatment from a mental health professional, child or caregiver had	**IV1:** COPE **DV1:** SCARED **DV2:** PROMIS **DV3:** CASE **DV4:** PBS-C **DV5:** CASCL **DV6:** AIRS-C **DV7:** PAQLQ **DV8:** C-ACT **DV9:** PSC **Definitions:**	**Tools:** Assessment scales for Anxiety, Depression, and asthma **Validity/Reliability:** Study mentions that CASE, PBS-C, CASCL, C-ACT, SCARED, PROMIS, AIRS-C, PAQLQ were all reliable tools for the given age	**Statistical Tests Used:** All t-tests were two-tailed. Tests of significance set at p < .10 Effect sizes were computed using Cohen's d.	**DV1:** (t = 2.00, p = .054, Cohen's d = 0.41). **DV2:** (t=-.40, p=0.695, Cohen's d=.09) **DV3:** (t = -2.864, p = .007, Cohen's d = 0.46) **DV4:** (t = -2.01, p = .053,	**Level of Evidence:** Level 3-Quasi-Experimental **Strengths:** relevance, feasibility, use of EBP, detailed reporting **Weakness:** lacks control group, subjective reports, limited generalizability **Feasibility:** Successful enrollment, low attrition, feasible

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Citation	Theory/ Conceptual Framework	Design/ Method/ Sampling	Sample/ Setting	Variables	Measurement/ Instrumentation	Data Analysis	Results/Findings	Level/ Quality of Evidence; Generalization
Funding: not explicitly stated **Bias:** Selection bias, sampling bias, observer bias			learning limitation that interfered with ability to comprehend the survey questions. **Attrition:** 3% - One participant dropped out of the study	SCARED: Screen for Child Anxiety Related Disorders, PROMIS: Patient-Reported Outcomes Measurement Information System CASE: Childhood Asthma Severity and Control Tool AIRS-C: Asthma Impact on Resource Use Scale for Children PAQLQ: Pediatric Asthma Quality of Life Questionnaire C-ACT: Childhood Asthma Control Test PSC: Pediatric Symptoms Checklist	group using Cronbach's alpha.		Cohen's d = 0.36). **DV5:** (t=-.18, p=.856, Cohen's d=.03) **DV6:** (t = -2.86, p = .007, Cohen's d = 0.60) **DV7:** (t = 1.55, p = .13, Cohen's d = 0.26) **DV8:** (t=.38, p=.704, Cohen's d=.07 **DV9:** (t = 1.93, df = 31, p = .063, Cohen's d = 0.22).	within school setting, flexibility **Application:** Intervention can be applied in school settings among the child population struggling with asthma, anxiety, and depression.

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Citation	Theory/ Conceptual Framework	Design/ Method/ Sampling	Sample/ Setting	Variables	Measurement/ Instrumentation	Data Analysis	Results/Findings	Level/ Quality of Evidence; Generalization
Bogucki et al. (2021). Cognitive behavioral therapy for anxiety disorders: Outcomes from a multi-state, multi-site primary care practice. **Country:** U.S. **Funding:** Mayo Clinic **Bias:** selection bias, treatment bias, internal bias	CBT as a framework integrates elements of both cognitive and behavioral psychology with social learning theory. It is rooted in the belief that negative thoughts and feelings are interconnected leading to distress and maladaptive behaviors. Challenging negative beliefs and thought patterns through CBT can lead to improved outcomes.	**Design:** naturalistic study design **Purpose:** analyze CBT outcomes for anxiety disorders in primary care.	N= 1,589 **Demographics:** age, sex, race, relationship status, insurance coverage, and primary care practice location **Setting:** Mayo clinic primary care practices in Minnesota, Arizona and Wisconsin. **Exclusion:** Non-English speaking **Attrition:** 8.62%	**IV1:** CBT **DV1:** GAD-7 **DV2:** PHQ-9 **Definitions:** CBT—therapeutic modality used to help the individual connect thoughts, feelings and behaviors**.** GAD-7—Assessment scale for anxiety symptoms PHQ-9—Assessment scale for depression symptoms	**Tools:** GAD-7 PHQ-9 **Validity/ Reliability:** Both reliable assessment tools. Previous research norms cited.	**Statistical Tests Used:** Paired samples T tests including descriptive statistics and percentage calculations.	**DV1:** CBT across all anxiety disorder categories yielded a $p < 0.05$, Cohen's d ranging from 0.70 to 1.02. **DV2:** CBT across all anxiety disorder categories yielded a $p < 0.05$, Cohen's d=0.39 to 0.61 ($p < 0.05$)	**Level of Evidence:** 2 cohort study **Strengths:** generalizability, large sample size, multiple sites **Weakness:** non-randomized design, subjective reports, no control group **Feasibility:** assessment tools are easily implemented and cost-effective, study design aligns with routine practice, works with available resources **Application:** integrating CBT programs into primary care practices

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Citation	Theory/ Conceptual Framework	Design/ Method/ Sampling	Sample/ Setting	Variables	Measurement/ Instrumentation	Data Analysis	Results/Findings	Level/ Quality of Evidence; Generalization
Lorentzen et al. (2020). A randomized controlled trial of a six-session cognitive behavioral treatment of emotional disorders in adolescents 14-17 years old in child and adolescent mental health services (CAMHS). **Country:** Norway **Funding:** The Regional Centre for Child and Youth Mental Health and Child Welfare-North. Funding body had no role in designing the study or collection, analysis, and interpretation of	CBT as a framework integrates elements of both cognitive and behavioral psychology with social learning theory. It is rooted in the belief that negative thoughts and feelings are interconnected leading to distress and maladaptive behaviors. Challenging negative beliefs and thought patterns through CBT can lead to improved outcomes.	**Design:** RCT **Purpose:** Examine the effectiveness of a short-term, transdiagnostic CBT (SMART) in adolescents with clinically significant emotional symptoms.	N= 163 **Demographics:** Adolescents ages14-17 with emotional disorders indicated by score on the SDQ. **Setting:** 3 outpatient clinics Exclusion: Diagnosis of developmental disorder, psychotic symptoms, use of anxiolytic or anti-depressant medication during the treatment period, and inability to speak the Norwegian language. **Attrition:** 11.66%	**IV1:** SMART **DV1:** DAWBA **DV2:** SDQ **DV3:** CGAS **DV4:** CORE-OM **DV5:** BDI-II **DV6:** MASC **Definitions:** SMART—6-week, transdiagnostic CBT modality for anxiety and depression in adolescents.	**Tools:** Assessment scales for anxiety, depression, development and wellbeing, global functioning, SI risk **Validity/ Reliability:** All tools have demonstrated reliability. Study created a Likert Scale.	**Statistical Tests Used:** Sample size calculation, intention to treat analysis, linear mixed model analysis, effect sizes, ANOVA, Chi Square tests, RCI, descriptive statistics.	SMART treatment showed significant improvements compared to the control group ($p < 0.05$). Hedges' g showed significant differences between group gain scores ($p < 0.05$). RCI analysis indicated significant changes on the SDQ post-treatment.	**Level of Evidence: Level 1** **Strengths:** large sample size, robust assessment tools with comprehensive approach, longitudinal design, RCT **Weakness:** attrition rate, limited generalizability, reporting bias **Feasibility:** feasible CBT intervention, recruitment of participants, assessment tools **Application:** Integrating CBT into primary care settings, monitoring outcomes of CBT.

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data or in writing the manuscript. **Bias**: selection bias, attrition bias, subjective reporting bias								
Hutson & Mazurek Melnyk (2022). An adaptation of the COPE intervention for adolescent bullying victimization improved mental and physical health symptoms. **Country:** U.S. **Funding:** American Psychiatric Nurses Association, the Ohio Chapter of the National Association of Pediatric Nurse	CBT as a framework integrates elements of both cognitive and behavioral psychology with social learning theory. It is rooted in the belief that negative thoughts and feelings are interconnected leading to distress and maladaptive behaviors. Challenging negative beliefs and thought patterns through	**Design:** Quasi-experimental, pre and post-test design. **Purpose:** To examine the effects of MINDSTRONG to Combat Bullying Program on adolescents before and after intervention.	**N=** 20 adolescents, 20 parents = 40 total participants **Demographics:** adolescents ages 12-17 and their parents. Adolescents had hx of bullying, depression, and anxiety. **Setting:** behavioral health outpatient department **Exclusion:** Not explicitly stated; all participants who did not meet inclusion criteria.	**IV1:** MINDSTRONG **DV1:** SCARED **DV2:** PHQ-9 DV3: California Bullying Victimization Scale DV4: McArthur Scale of Subjective Social Status DV5: Children's Somatization Inventory DV6: Personal Beliefs Scale **Definitions:** MINDSTRONG is an adaptation of the COPE program for	**Tools:** Assessment questionnaires to assess anxiety, depression, subjective bullying, somatic symptoms, and personal belief scores before and after intervention. **Validity/ Reliability:** Study mentions that tools have demonstrated reliability validity. Tools are widely accepted and utilized in the psychological field. Study created a Likert scale to assess attitudes of	**Statistical Tests Used:** Repeated measures ANOVA, Bonferroni correction, effect sizes	SCARED: $F(2,28) = 5.17$, $p = .01$, $\eta 2p = .27$. PHQ-9: $F(2,28) = 13.73$, $p = .001$, $\eta 2p = .50$ CSI-24: $F(2,28) = 3.84$, $p = .03$, $\eta 2p = .22$. CBVS total): $F(2,28) = 8.42$, $p = .001$, $\eta 2p = .38$ CBVS count): $F(2,28) = 11.722$, $p = .000$, $\eta 2p = .46$.	**Level of Evidence:** Level 3- Quasi-Experimental **Strengths:** filling a gap in need for mental health interventions in the young population, large effect sizes demonstrating decreases in depression, anxiety, somatic symptoms, and bullying victimization. **Weakness:** small sample size of 20 participants, no control group, subjective reporting **Feasibility:** Strong session attendance from youths and their parents, 80% homework completion,

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Practitioners Foundation, the Ohio Nurses Foundation, and Sigma Theta Tau International Epsilon Chapter. **Bias:** selection bias, subjective reporting bias	CBT can lead to improved outcomes.		**Attrition:** 0%	teens being bullied.	subjective questionnaires.		(PBS): F(2,28) = 5.93, p = .007, η2p= .30. SSS Society: F(2,28) = .160, p = .853, η2p= .01. SSS Society: F(2,28) = 2.46, p = .104, η2p= .15.	positive exit survey responses **Application:** Primary care intervention for bullying, anxiety, and depression promotes family involvement in mental health interventions.
Gray et al. (2024). Effectiveness of an evidenced-based cognitive behavioral therapy intervention for adolescents in a school setting. **Country:** U.S. **Funding:** Not explicitly stated in the research article. Authors deny conflicts of interest.	The Johns Hopkins Evidence-Based Practice (JHEBP)—Involves a question development process that builds upon three key concepts: inquiry, practice, and learning. CBT –is based on the theory that an individual's perception	**Design:** Quasi-experimental, pre and post-test design longitudinal design. **Purpose:** Examine the effects of a COPE on anxiety and depression symptoms among adolescents in a school-based setting, evaluate the sustainability of the effects of COPE at the 2-month follow-up, describe the subjective experiences of students who completed the CBT program	**N=** 22 **Demographics:** 12–13-year-olds, females and males, black, white, Hispanic, pacific islander. Scored positive on annual screen for anxiety and depression. **Setting:** school setting—7th grade health class **Exclusion:** Participants who did	**IV1:** COPE **DV1:** GAD-7 **DV2:** PHQ-A **Definitions:** GAD-7—Assessment scale for anxiety symptoms PHQ-9—Assessment scale for depression symptoms	**Tools:** Assessment questionnaires to assess anxiety and depression. A modified version of the postintervention COPE program evaluation form was utilized to evaluate participants' perceptions. **Validity/Reliability:** GAD-7 and PHQ-A instruments were validated through Cronbach's Alpha.	**Statistical Tests Used:** Shapiro-Wilk Normality Test, ANOVA, Paired Samples T Test, descriptive statistics.	**Shapiro-Wilk: GAD-7 and PHQ-A scores Normally distributed at all time points (p > 0.05).** **ANOVA:** GAD-7: No significant difference across time (p = 0.077). PHQ-A: No significant difference across time (p = 0.489). Paired-sample t-tests: Anxiety	**Level of Evidence: Level 3 Quasi-**Experimental Study **Strengths:** Longitudinal design, using an evidenced-based intervention, clinically significant improvements, high participant satisfaction **Weaknesses:** Small sample size, no control group, limited generalizability due to school-based setting, missed days for participation.

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Bias: Sampling bias, reporting bias, attrition bias	affects emotions and behaviors	**Attrition:** 20%	not meet inclusion criteria. **Attrition:** 0%				and depression symptoms decreased significantly from pre-intervention to 2-month follow-up.	**Feasibility:** School-based setting increases feasibility. **Application:** School-based or primary care setting for adolescents with anxiety and depression.
Carr & Stewart (2019). Effectiveness of school-based health center delivery of cognitive skills building intervention in young, rural adolescents: Potential applications for addiction and mood**.** **Country:** U.S. **Funding:** Supported by	CBT as a framework integrates elements of both cognitive and behavioral psychology with social learning theory. It is rooted in the belief that negative thoughts and feelings are interconnected leading to distress and maladaptive behaviors. Challenging negative beliefs	**Design:** A prospective, quasi-experimental, feasibility design. **Purpose:** Examine the effectiveness of nurse-led COPE program on executive function and mood in adolescents.	**N=** 15 **Demographics:** adolescents ranging from 11-15 years old, positive annual screen for depression and anxiety **Setting:** Rural-based health center **Exclusion:** participants who did not meet inclusion criteria. **Attrition:** 0%	**IV1:** COPE **DV1:** BRIEF-SR **DV2:** BYI-II—BAI and BDI **Definitions:** BRIEF-SR—The Behavior Rating Inventory of Executive Function BYI-II—Beck Youth Inventory	**Tools:** Assessment questionnaires to assess anxiety and depression. **Validity/Reliability:** BYI-II is widely recognized and is established validity and reliability. Validated through Cronbach's Alpha.	**Statistical Tests Used:** ANOVA, Paired Samples T Test, descriptive statistics.	Improvement in (BRI) skills from post-intervention to three-month follow-up ($p = .017$). Significant improvement in BRI skills from pre-intervention to three-month follow-up ($p = .060$) Anxiety: Paired t test: Significant improvement in anxiety ($p = .024$). Effect size (Cohen's d): Medium effect	**Level of Evidence:** Quasi-Experimental—Level III **Strengths:** Conducted in a critical shortage area, used evidence-based intervention, delivered by school nurses **Weaknesses:** Small sample size **Feasibility:** School setting allows access for adolescent participants, utilizes school nurses **Application:** Delivery COPE by school nurses could be an effective piece in addressing addiction and mood in

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funds from the National League for Nursing's Jonas Nurse Scholars Program **Bias:** Selection bias, sampling bias, confounding variables	and thought patterns through CBT can lead to improved outcomes.						size for anxiety (0.5). Depression: Paired t-tests: Borderline significant improvement in depression from pre-intervention to post-intervention (p = .051).	young, rural adolescents.
James et al. (2020) Cognitive behavioral therapy for anxiety disorders in children and adolescents. **Country: U.S.** **Funding:** NIHR **Bias:** reporting bias, selection bias, quality of study bias	CBT as a framework integrates elements of both cognitive and behavioral psychology with social learning theory. It is rooted in the belief that negative thoughts and feelings are interconnected leading to distress and maladaptive	**Design:** Systematic review and Meta-analysis **Purpose:** Examine the effects of CBT on childhood anxiety disorders. Compare effects of CBT with control conditions waitlist/no treatment, treatment as usual, attention control, alternative treatment, and medication	**N=** 87 RCT with 5964 participants **Demographics:** Younger than 19 and met diagnostic criteria for anxiety disorders. **Setting:** University outpatient clinics, inpatient services, community clinics, and schools **Exclusion:**	**IV1:** CBT **DV1:** remission of primary anxiety disorders post-treatment **DV2:** remission of all anxiety disorders post-treatment **DV3:** reduction in depressive symptoms **DV4:** global functioning	**Tools:** Meta-analysis through statistical analysis **Validity/Reliability:** Validated studies, previous research cited for reliability.	**Statistical Tests Used:** Odds Ratios (OR), Z-test, Chi-square test for heterogeneity (Chi²), I² statistics, Meta-Analysis	Compared with waitlist/no treatment: Primary anxiety diagnoses (OR 5.45, 95% CI 3.90 to 7.60; NNTB 3). All anxiety diagnoses: (OR 4.43, 95% CI 2.89 to 6.78). Compared with treatment as usual (TAU): primary anxiety disorder (OR	**Level of Evidence:** Level 1I **Strengths:** Comprehensive review, large sample size, used strong methodological approach. **Weaknesses:** limited quality of evidence, insufficient data for certain comparisons, limited generalizability, limited longitudinal data. **Feasibility:**

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	behaviors. Challenging negative beliefs and thought patterns through CBT can lead to improved outcomes.		None reported, only inclusion criteria reported. **Attrition:** 0%				3.19, 95% CI 0.90 to 11.29). all anxiety disorders (OR 2.74, 95% CI 1.16 to 6.46). Compared with attention control: primary anxiety disorders (OR 2.28, 95% CI 1.33 to 3.89) all anxiety disorders (OR 2.75, 95% CI 1.22 to 6.17). Comparison with alternative treatments: all anxiety disorders (OR 0.89, 95% CI 0.35 to 2.23).	Can be integrated into primary care increases feasibility, need for increased training of therapists may decrease feasibility. **Application:** Use of evidence-based treatment in practice for children with anxiety disorders, collaborative care in primary care settings.
Santilhano M. (2019). Online intervention to reduce pediatric anxiety: An evidence-based review.	Cognitive theory of mental disorders- learning of new cognitive behavior skills, current thoughts,	**Design:** Systematic review with meta-analysis **Purpose:** To examine the effects of nonpharmacological interventions available	**N= 20 studies** **Demographic:** School age children with anxiety disorders	**IV1:** CBT programs (i.e., COPE) reducing symptoms of GAD in children.	**Tools:** Meta-analysis thought qualitative synthesis. **Validity/Reliability:**	**Statistical Tests Used:** Meta-analysis, quantitative systematic reviews. Content	Positive outcomes of improved physiological, social, and cognitive development are	**Level of Evidence:** Level II **Strengths:** Comprehensive review used strong methodological approach, clearly

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Country: U.S. **Funding:** UMKC Women's Council Graduate Assistance Fund **Bias:** Publication bias, selection bias	and feelings (personal beliefs), and chosen lifestyle behaviors	online for a reduction of symptoms of generalized anxiety disorder in school-age youth.	**Setting:** Schools, clinical settings, online **Exclusion: Studies not between 2007-2017.** **Attrition: 0%**	**DV1:** Reduction of GAD symptoms **DV2:** Improvements in psychosocial development **DV3:** Improvements in Cognitive Development	Validation studies, psychometric analysis	synthesis, narrative synthesis	supported in the studies using cognitive behavior therapy such as the Creating Opportunities for Personal Empowerment (COPE) program.	defined inclusion criteria **Weaknesses:** limited quality of evidence, small sample of studies, limited generalizability, limited longitudinal data, lack of statistical analysis **Feasibility:** Can be integrated into primary care increases feasibility. Application: Use of evidence-based treatment in practice for children with anxiety disorders, collaborative care in primary care settings.

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Table A2

Synthesis Table

Study (Author, year)	Erlich et al., (2019)	Hart et al., (2019)	McGovern et al. (2019)	Bogucki et al. (2021)	Lorentzen et al. (2020)	Hutson & Mazurek Melnyk. (2022)	Gray et al. (2024)	Carr & Stewart (2019)	James et al. (2020)	Santilhano M. (2019).
Design	Quasi-experimental	Quasi-experimental	Quasi-experimental	Cohort Study	RCT	Quasi-experimental	Quasi-experimental	Quasi-experimental	Systematic Review	Systematic Review
Sample										
n subjects	37	10	32	1,589	163	20	22	15	87	20
M-Age	15	21	10	57	15	14	12	13	10	10
Medical	x									
Nursing			x				x	x		
Integrated Clinical staff in workforce				x		x			x	x
Students								x		
Therapy Providers		x			x				x	x
Setting										
Universities/Academic										
Online										
USA	x	x	x	x		x	x	x	x	x
International					x					
Measurement Tools										
SCARED			x		x					
GAD-7	x			x			x			
PHQ-9 or PHQ-A	x			x	x		x			
BDI or BDI-II		x						*x*		

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STAI		x								
PROMIS CASE PBS-C CASCL AIRS-C PAQLQ ACT PSC			x x							
DAWBA SDQ CGAS CORE-OM MASC					x					
BRIEF-SR BYI-II BAI								*x*		
Meta-analysis									x	x
Study Created Likert Scale					x	x				
Validity/Reliability	Established through cited research	Cronbach's alpha	Cronbach's alpha	Previous research norms cited			Cronbach's alpha	Cronbach's alpha	Validated studies, previous research cited	Validation studies, psychometric analysis
Major Variables Studied/Interventions										
Anxiety Levels			x	x	x	x	x	x	x	x
Depression Levels	x	x		x	x	x	x	x	x	x

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Subjective Feedback of Interventions	x	x				x				
Global Functioning					x	x			x	
Outcomes/ Themes										
Level of anxiety	⬇	⬇	⬇	⬇	⬇	⬇	⬇	⬇	⬇	⬇
Level of depression	⬇	⬇		⬇	⬇	⬇	⬇	⬇	⬇	⬇
Global functioning	⬆				⬆	⬆				

Key: **COPE** Creating Opportunities for Personal Empowerment, **CBT** Cognitive Behavioral Therapy, **CBSB** Cognitive Behavioral Skills Building, **CSM** Common Sense Model**, GAD** Generalized Anxiety Disorder, **PHQ** Patient Health Questionnaire, **BDI** Beck Depression Inventory, **STAI** State-Trait Anxiety Inventory, **JHEBP** John Hopkin's Evidence-Based Practice **SCARED** Screen for Child Anxiety Related Disorders **PROMIS** Patient-Reported Outcomes Measurement Information System **CASE** Child Asthma Management Self-Efficacy **PBS-C** Personal Beliefs Scale-Child **CASCL** Childhood Asthma Symptom Checklist **AIRS-C** Asthma Illness Representation Scale-Child **PAQLQ** Pediatric Asthma Quality of Life Questionnaire **C-ACT** Childhood Asthma Control Test **PSC** Pediatric Symptom Checklist **BYI** Beck Youth Inventory **ANOVA** Analysis of Variance **RCI** Reliable Change Index **DAWBA** Development of Well-Being Assessment **SDQ** Strengths and Difficulties Questionnaire **CGAS** Children's Global Assessment Scale **CORE-OM** Clinical Outcome in Routine Evaluation **MASC** Multidimensional Anxiety Scale **CSM** Common Sense Model

Appendix B

Participant Demographics and Descriptive Statistics

Figure B1

Descriptive Statistics for GAD-7 and PHQ-9 Scores Across Time Points

Variable	*M*	*SD*	*n*	Min	Max
Pre_Anxiety	12.00	3.46	3	8.00	14.00
Mid_Anxiety	9.00	6.24	3	4.00	16.00
Post_Anxiety	6.67	3.79	3	4.00	11.00
Pre_Depression	12.00	5.57	3	7.00	18.00
Mid_Depression	11.33	9.24	3	6.00	22.00
Post_Depression	7.67	6.03	3	2.00	14.00

Figure B2

Frequency Table for Nominal and Ordinal Variables

Variable	*n*	%
Gender		
Female	3	100.00
Missing	0	0.00
Ethnicity		
Hispanic	3	100.00
Missing	0	0.00
Education		
High School	3	100.00
Missing	0	0.00

Note. Due to rounding errors, percentages may not equal 100%.

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