

MAXIMIZING PEDIATRIC PRIMARY CARE PROVIDER'S KNOWLEDGE OF
ADOLESCENT DEPRESSION MANAGEMENT

by

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DEDICATION

This project is dedicated to any child who has experienced depression to any degree. It is our privilege and duty as health care providers to offer you only the very best practice in our service to you. You are our future, and we honor and respect you.

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ABSTRACT

Purpose

The purpose of this quality improvement project is to improve PCP knowledge of adolescent depression management through evidence-based video education by presenting a video to pediatric primary care providers at El Rio Congress that is endorsed by American Academy of Pediatrics.

Background

More than 1 out of 10 adolescents in the United States suffer from depression, 1 in 6 US high school students report they have genuinely considered suicide, which is a serious risk of untreated depression (Fallucco, 2022). Unfortunately, as few as 15% of youth suffering from MDD receive adequate treatment (Fallucco, 2022; Farley et al., 2020; Kenney et al., 2021). Barriers to depression treatment for adolescent population are becoming increasingly partly due to higher rates of overall depression, and not enough behavioral health providers offer specialty care. While it is in scope of primary care providers to offer treatment for many uncomplicated forms of depression, many primary care providers desire more training and review on topic (Kenny et al., 2021; Bonin & Moreland, 2022).

Methods

This QI project used quantitative, one group study design for implementation and study. The sample of pediatric primary care providers came from El Rio Congress Pediatric Clinic in Tucson, AZ. Data was collected using a pre- and post-questionnaire and offering a video on

management and screening of pediatric depression presented by American Academy of Pediatrics.

Results

Twenty pediatric primary care providers were invited to participate in quality improvement project via email, and total of 7 completed both pre- and post-questionnaire (n=7). Participant scores increased by 31% from pre-questionnaire to post-questionnaire after viewing educational video. The average score of pre-questionnaire was 67%, while average score of post-questionnaire was 98%. Therefore, paired t-test showed value of 0.0019, which is considered very statistically significant.

Conclusions

Pediatric primary care providers play critical role in the identification and management of pediatric depression. It is imperative that primary care providers are knowledgeable with current, evidence-based, best-practice regarding the identification and management of depression in the pediatric population. This study suggests that the evidence-based video education improve knowledge rates of pediatric primary care providers at El Rio Congress pediatric clinic.

INTRODUCTION

Adolescent depression is a prevalent and distressing disorder that places youth at risk for many other behavioral health (BH) concerns including substance use, anxiety, suicidality, and adverse outcomes into adulthood (Farley et al., 2020). In fact, 15.1% of adolescents aged 12-17 years had a major depressive episode between 2018-2019 (CDC, 2022). While effective, evidence-based treatments for adolescent depression exists, only 15-30% of affected youth receive needed care (Kenny et al., 2021). Barriers to depression treatment for the adolescent population are becoming increasingly problematic for a variety of reasons. Currently, the number of children needing care far outweighs the number of mental health specialists currently available (Bonin & Moreland, 2022). With this incongruity, primary care providers (PCPs) are being called upon to treat depressive disorders in children and adolescents at a rate higher than ever before seen (Bonin & Moreland, 2022) Unfortunately, many PCPs find their training, support, and/or reimbursement for managing depressed youth is insufficient and believe current time constraints interfere with obtaining an adequate psychiatric history, ultimately leading to insufficient treatment (Bonin & Moreland, 2022). Additionally, the repercussions of the COVID-19 pandemic have shown adverse mental health effects and are continuing to worsen, expanding the amount of necessary care (Beharry, 2022). The shortage of mental health providers available for timely treatment in correlation to the risks associated with undertreated depression displays the need for maximizing the primary care providers role with depression management by equipping them with depression management resources that are specific to the primary care setting (Walter et al., 2019). The desire for depression management education/review is present among primary care providers, and with primary care providers being the sole contact for half of

all patients with depression, the need for additional resources for pediatric PCP's is imperative (Beharry, 2022; Walter et al., 2019; Bonin & Moreland, 2022).

Background Knowledge and Significance

Adolescents with depression often experience irritability, sadness, hopelessness, change in energy levels, altered sleep patterns, appetite fluctuations, social withdrawal, and difficulties concentrating (Fallucco, 2022). Children and youth are often mislabeled as lazy or “troublemakers” because the process of the disease can go misdiagnosed or misunderstood (CDC, 2022). More than 1 out of 10 adolescents (11.3%) in the United States (US) suffer from depression, while 1 in 6 US high school students report they have genuinely considered suicide – a serious risk of untreated depression (Fallucco, 2022). Approximately 76% of sixteen-year-old youth are screened for depression at their well exams with only 40% of teens who have classified as having mild depression receiving follow-up care (Farley et al., 2020). Unfortunately, according to multiple large-scale studies, only a minority (as low as 15%) of youth suffering from MDD receive adequate treatment (Fallucco, 2022, Farley et al., 2020, Kenney et al., 2021). Next, a definition of depression and an overview of severity classification will be explained, followed by expanding on the risk of untreated depression.

Defining Depression

Unipolar depression (major depressive disorder [MDD]) is characterized by at least one major depressive episode (Bonin et al., 2022). The National Institute of Mental Health (NIMH) defines a major depressive episode congruently with the 5th edition of Diagnostic and Statistical Manual of Mental Health Disorders (DSM-5), which requires a period of at least two weeks when a person experiences depressed mood or loss of interest or pleasure in daily activities and

had a majority of particular symptoms (e.g. problems with sleep, eating, energy, concentration, or self-worth, etc.) and other causes of symptoms were ruled out such as medical illness, substance use, or medications (NIH, 2022).

Severity (intensity) of the disease is established by use of the Patient Health Questionnaire – Nine Item (PHQ-9) along with clinical features and diagnostic interview (Bonin et al., 2022, Costantini et al., 2021). The PHQ-9 has been widely validated for depression screening in the primary care (PC) setting (Constantini et al., 2021). The PHQ-9 can be found in Appendix G. The severity of the disorder can be classified as mild to moderate, or severe (Bonin et al., 2022).

Mild to moderate MDD is characterized by a lack of suicidal or homicidal ideation or behavior, a lack of psychotic features (delusion, hallucinations), little to no aggressiveness, and sound judgement warranting that the patient or others are not at imminent risk of being injured or harmed (Bonin et al., 2022). Complementary to the diagnostic interview of the provider, mild to moderate MDD can be classified by a score less than 20 on the PHQ-9 but at least 10 (Bonin et al., 2022). Severe MDD is the presence of any symptom or symptoms required to be absent for mild-to-moderate criteria or a score of more than 20 on the PHQ-9, with 27 being the highest possible score (Bonin et al., 2022).

The severity of depression is very important because it helps PCP's dictate which patients can be safely managed in the primary care setting (Fallucco, 2022). The American Academy of Pediatrics (AAP) (2022) recommend pediatric primary care providers utilize a stoplight algorithm when deciding which patients to treat in the primary care setting and which patients to refer out. Patients qualifying as "red" should be immediately and safely transferred to an

emergency room. These patients include adolescents with depression who have active suicidal intent or plan, have had a recent attempt at suicide, or are experiencing mania or psychosis actively (AAP, 2022). “Yellow” zone patients are those who have depression plus trauma or a first degree relative with bipolar or psychosis. For these patients, PCPs should manage with caution in the PC setting, refer to therapy, and consult/refer to a psychiatrist for recommendations. For patients with depression, with or without anxiety and in absence of the above features, PCPs should manage in the primary care setting, refer for therapy and consider medication. These patients are considered “green” zone patients (AAP, 2022). The current literature suggest that “green zone” patients comprise most adolescents living with depression and are appropriate for PCP management in the primary care setting (Walkup & Strawn; Kenny, 2021). Particularly, PCPs increasing their knowledge of screening and management with absence of pediatric mental health providers is important until the patient can see a specialist provider or symptom resolution (Walter et al., 2019, Walkup & Strawn, 2020, Kenny, 2021).

Risks of Untreated Adolescent Depression

Adolescents with depression may exhibit undesirable behaviors including feeling sad, irritable, hopeless, and failing to enjoy pleasurable activities (CDC, 2022) In addition, adolescents with depression may have disrupted eating habits, interrupted sleep, feeling of sluggishness, or have a hard time paying attention, feeling worthless, useless, or guilty (CDC, 2022). Youth with depression are more likely to self-harm and exhibit self-destructive behaviors (CDC, 2022). In addition, adolescences who are depressed are also more likely to drop out of school or display academic underachievement, have secondary mental health disorders such as substance use, become pregnant as a teenager, and have impaired parent and peer relationships

(Kenney et al., 2021). Depression also has physical manifestations- for example, adolescents with depression are more likely to be obese, increasing their risk of hypertension, type 2 diabetes mellitus, and hyperlipidemia (Gahagan, 2020). Additionally, the treatment of pediatric mental health disorders, including depression, now ranks most expensive of all pediatric disorders, exceeding the cost of asthma, respiratory illness, and infectious diseases (Kenny et al., 2021). Extreme depression can cause the adolescent to think about, plan, and complete suicide (CDC, 2022). Unfortunately, suicide is consistently one of the leading causes of death in the adolescent population (CDC, 2022). The rate of completed adolescent suicide has doubled during the period of 2008-2015 (Nierengarten, 2018). In fact, suicide was the third leading cause of death for adolescents (aged 15-19 years) in the US in 2021 and 2022 (CDC, 2023).

Local Problem

According to the most current data, for every 10,000 children aged 0-17 there are 6.4 psychiatrists, 8.3 pediatricians, 14.8 family medicine physicians, 20.1 licensed social workers, and 19.2 psychologists in Pima County (CDC, 2022). Of all states in 2020, Arizona ranks 21st in prevalence of youth depression with 13.06% of youth having on major depressive episode in the last year and 8.9% (roughly 47,000 patients) having a severe major depressive episode (Mental Health America, 2022). Of those classified with depression, 60.2% of them did not receive mental health services (Mental Health America, 2022). Hispanic or Latino's make up 44.2% of the Arizona population, which is well above the national average of 18.5% (United States Census Bureau, 2022). This is important considering the ethnic disparities present in the identification and management of pediatric depression with Hispanic youths being less likely than non-Hispanic youth to be identified or treated (Brent et al., 2020).

Intended Improvement

Project Purpose

The purpose of this quality improvement (QI) project is to improve PCP knowledge of adolescent depression management through evidence-based video education. The purpose of this DNP, quality improvement (QI) project is to present an educational presentation on the current recommendations for screening and management of adolescent depression in the primary care setting, presented by the American Academy of Pediatrics (AAP) as part of their “Pediatric Mental Health Minute Series.”

Project Question

Does an evidence-based educational video on screening and current AAP guidelines on adolescent depression management increase pediatric primary care providers knowledge on adolescent depression management?

Project Objectives

The main objective of this project is to improve provider knowledge regarding adolescent depression screening and management in the pediatric primary care setting through video education. The site for this QI project is El Rio Community Health Center (Congress). The aims of the project include:

- Aim 1: Deliver a 20-minute evidence-based educational video to primary care provider on adolescent depression screening and management from the AAP.
- Aim 2: Evaluate the effectiveness of the evidence-based, provider-focused educational intervention through comparison of pre-education and post-education questionnaires.

Theoretical Framework

Theory of Planned Behavior

Theory of planned behavior (TPB) is the theoretical framework that will guide this project and support the purpose of improving provider knowledge levels with adolescent depression management. TPB is an extension of the Theory of Reasoned Action (TRA) which operates under the assumption that people behave in sensible ways and make decisions based upon collecting data and responding rationally (Gass & Seiter, 2016).

Humans understand life from their own situation and perspective, which has undoubtedly shaped their beliefs. Thus, social context is important in understanding behavior formation (Ajzen, 2020). Both injunctive and descriptive normative beliefs will shape how an individual sees subjective norms. Injunctive norms are beliefs that family, friends, spouse, coworkers, etc. will approve of an individual's behavior (Ajzen, 2020). Descriptive normative beliefs are related to the perceived overall social pressure to engage in a behavior (Ajzen, 2020). The theory says the completion or omission of a behavior is determined under the premise that individuals choose to make logical and reasoned decisions by evaluating the information available to them and that the behavior aligns with their intentions (Fishbein & Ajzen, 1975). Additionally, TPB suggests that behavior is determined by a host of influencers including intentions, attitudes, and abilities (Fishbein & Ajzen, 1975 & Fishbein, 1980).

Intentions are influenced by attitudes- which refer to positive or negative thoughts of an individual regarding the decision or behavior at question (Fishbein & Ajzen, 1975). According to TPB theory, the antecedent to a behavior is the intention to perform the behavior at question (Ajzen, 2020). The stronger the intention (motivation), the more likely the behavior will occur,

while the converse is also true (Ajzen, 2020). Beliefs about the consequences of carrying out an action or forgoing the action/decision is an important part of attitude formation (Gass & Seiter, 2016). Intention is also coupled with a person's ability to perform the desired behavior (Fishbein & Ajzen, 1975). The ability of a person to perform a desired behavior is named "behavioral control" by the creators of TPB (Fishbein & Ajzen, 1975). Behavioral control is described as the degree an individual feels the ability to complete a task is within their control (Gass & Seiter, 2016, Fishbein & Ajzen, 1975). This ability can be influenced by the absence or presence of resources in addition to the individual's perception of their ability (Gass & Seiter, 2016; Fishbein & Ajzen, 1975). Said another way, the fewer obstacles a person perceives, the greater incidence of perceived behavioral control, and the stronger the intention to perform behavior/actions, the more likely the task will be completed (Fishbein & Ajzen, 1975).

Theory Applied to Project

It is known that antidepressant medication is efficacious (up to 74% response rate) in the treatment of adolescent depression and we know that primary care providers report hesitancy as they consider prescribing patterns in the pediatric population (Tulisiak et al., 2018). We also know most providers desire more skills in management for pediatric MDD through education and review of content/management techniques (Shahidullah et al., 2020; Tulisiak et al., 2018). It is within the core values of both medicine and nursing (the two groups of providers to whom this project is aimed towards) to avoid harm and offer therapeutic, quality interventions (American Medical Association, 2022; American Nursing Association, 2022). For that reason, and because we cannot concretely account for the individual intentions of each person in this QI project, we must assume that the intentions of PCPs are such that align with the mission of the governing

body they are associated with. With intentions accounted for (as best as possible while remaining in the scope of this QI project), TPB lends insight on the topic of “behavioral control.”

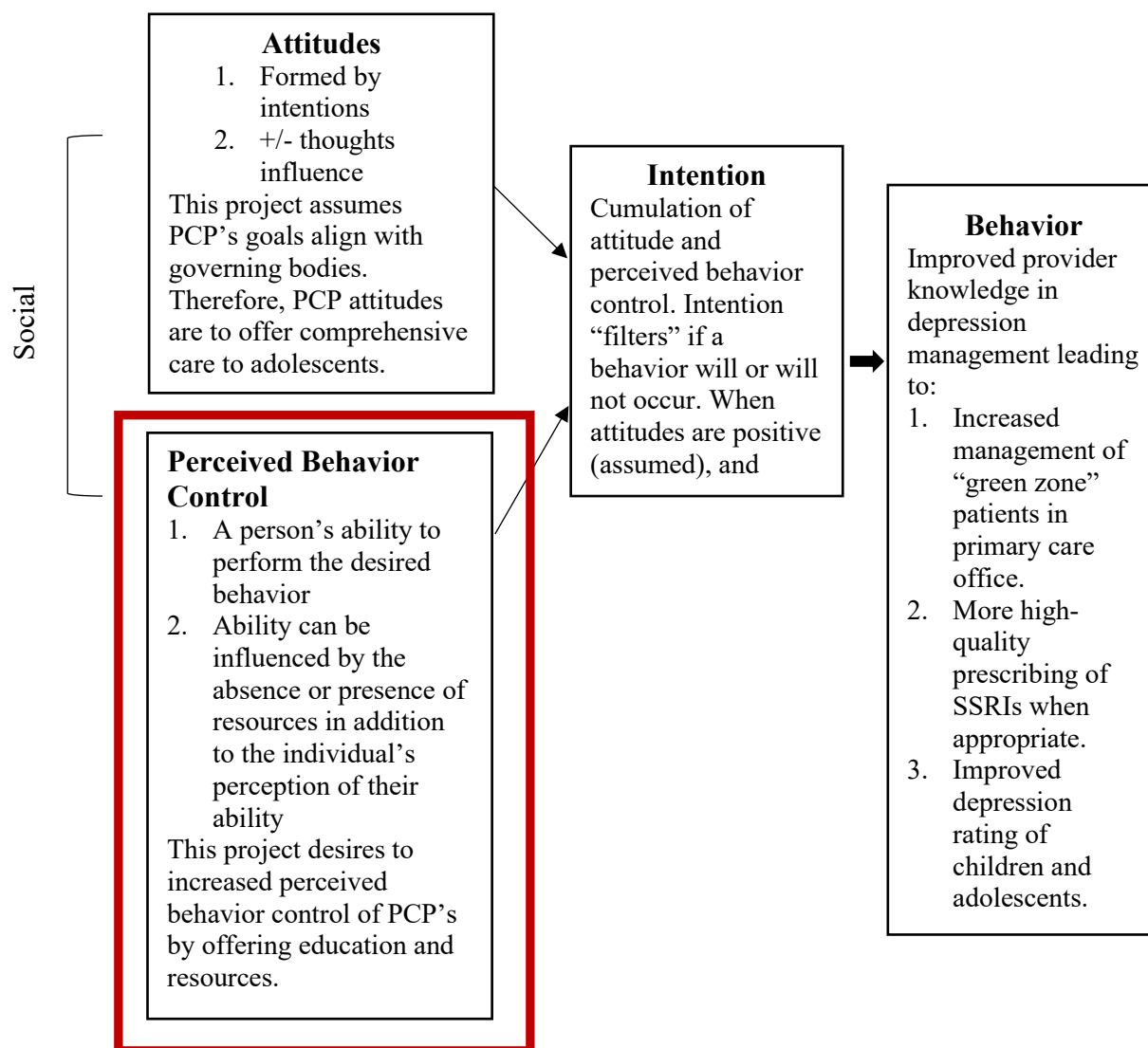
Therefore, according to this theory, the primary care provider must both intend on following best practice (which is offering one or more evidence-based treatments such as psychotherapy or antidepressant medication at the time of a positive screen) in addition to having the resources to do so. Importantly, resources include the comfort and knowledge that leads to high-quality prescribing and thorough behavioral health management, not simply the ability to write the prescription or treatment plan. To assume all PCPs are comfortable with the management of adolescent depression negates the research that shows PCPs feel unsupported and desire education and review of content/best practice (Bonin & Moreland, 2022). Importantly, most providers (94.6%) report discussing depression treatment options with pediatric patients (showing intent), while 43% reports they have “little or some” knowledge on the topic (showing need for increased behavioral control via review of education) (Shahidullah et al., 2020).

Therefore, a natural component of this QI project, according to TBP, is to offer the resources to support PCPs as they maximize their role in adolescent depression management. The diagram below highlights the theory, showing all pertinent relationships. The red square around “perceived behavior control” is showcasing the focus of the project per the framework of the TPB.

Figure 1

Theory of Planned Behavior Model

The Theory of Planned Behavior



Major Concepts Defined

Adolescent

Adolescent is defined as the years of life between 11 and 21; it is considered a transitional period from childhood and adulthood (Alderman et al., 2019). Notably, most of the mortality and morbidity during this phase of life is attributable to unintentional injuries, suicide, and homicide (Alderman et al., 2019).

Depression

A persistent state in which children feel sad, hopeless, or uninterested in things that they have previously enjoyed for at least a period of two weeks (CDC, 2022).

Pediatric Primary Care Provider

A physician (Medical Doctor or Doctor of Osteopathic Medicine), nurse practitioner, clinical nurse specialist, or a physician assistance who provides, coordinates, or helps a patient access a range of health care services as allowed under state law (CDC, 2022). A pediatric primary care provider encompassed the CDC definition while specializing in the care of newborns, infants, children, adolescents, and young adults (CDC, 2022).

Literature Synthesis

Evidence Search

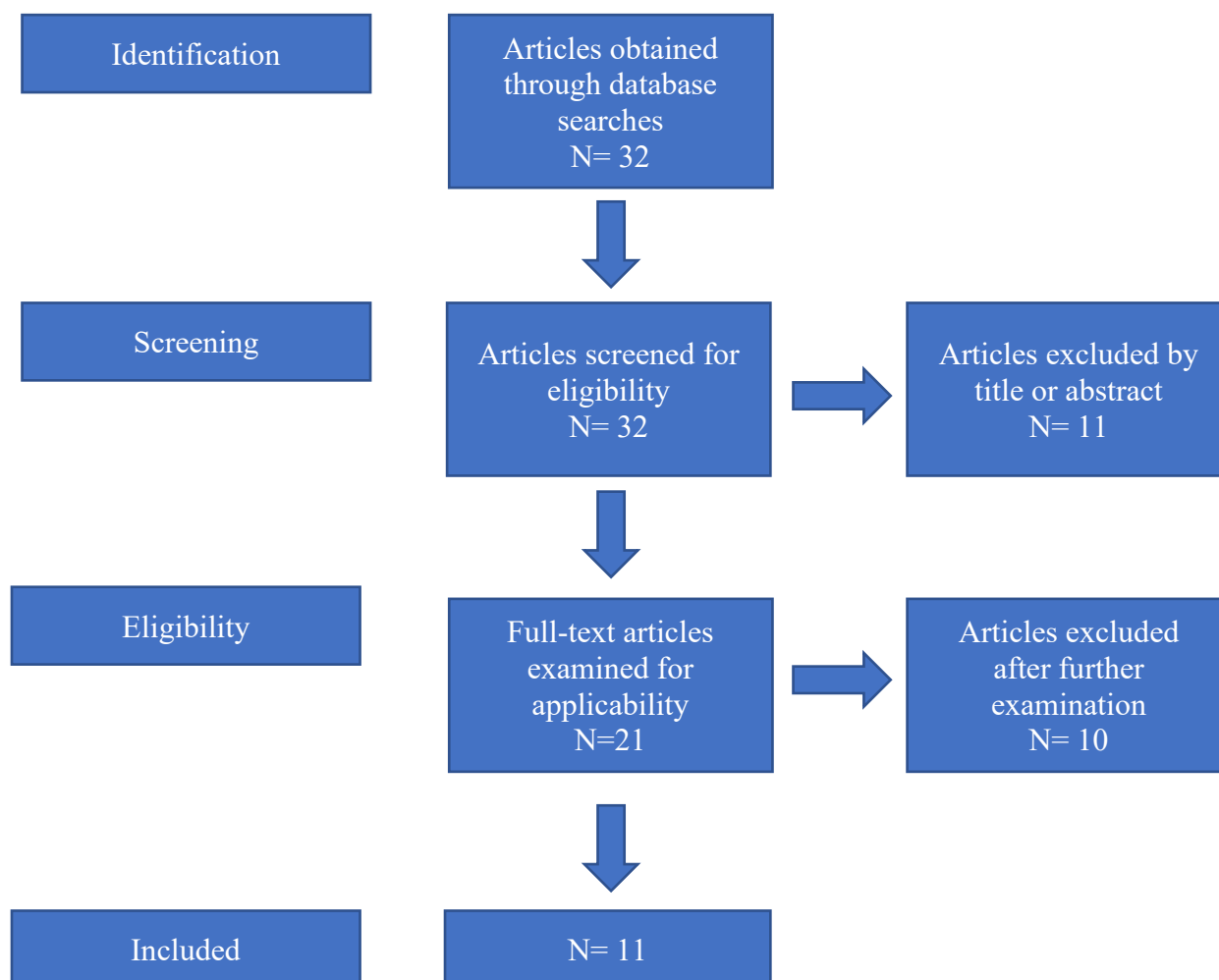
Utilizing Cumulative Index to Nursing and Allied Health Literature (CINHAL), a literature search was preformed to assist this writer in gathering evidence appropriate for a quality improvement (QI) project best suited for the population of El Rio Pediatrics (Congress). Depression can manifest in many ways and affect any age group and demographic and can be applicable to any healthcare setting (CDC, 2022). Therefore, the literature search started by

adding the Boolean terms “pediatric depression” and “primary care.” This search, which limited results to publication dates between 2018-2022 and yielded 32 results: 30 academic journals and 2 periodicals. The importance of screening is well established at the health facility pertinent to this project (El Rio, Congress). El Rio shows their investment of depression screening with routine PHQ-9 screening for all adolescent visits between the age of 11 years and older. Therefore, the texts that focus solely on improving screening rates were removed (n=11; one periodical and ten journals), leaving 21 articles. From these articles, another 6 were removed because they were specific to maternal postpartum depression. Of the 15 remaining articles, another four were removed as outliers (one article specific to pediatric obesity pharmacotherapy, one article specific to paternal depression at well-child visits, one small sample of medical yoga, and one article written for medical residents about maintaining wellness during residency). Eleven articles remained part of the search and show focus on adolescent depression interventions in the primary care setting, and aren’t limited to improving screening rates (Beharry, 2022; Brent 2020; Brent 2021; Farley, 2020; Kenny et al., 2021; Kocolas et al., 2019; Melnyk, 2020; Nierengarten, 2018; Secrest et al., 2019; Shahidullah et al., 2020; Walkup & Strawn, 2020). One article was removed as a duplicate- the updated version was kept and the older version was removed (Brent, 2020). A second article was removed because it was a professional, non-peer reviewed commentary in response to an evidence-based recommendation for treating adolescent depression in England and not pertinent to this project (Walkup & Strawn, 2020). Of the 32 articles initially identified in the literature search- 9 articles from CINHALL were kept for the literature synthesis. Multiple studies reference the “Guidelines for Adolescent Depression in Primary Care (GLAD-PC): Part 1 & 2. GLAD-PC is a clinical guideline for the

management of adolescent depression in the primary care setting and is endorsed by the AAP. A total of 11 articles were retained for the literature of the synthesis on adolescent management in the primary care setting. A literature grid shows the title of each publication with author(s), type of study, main outcome/findings, and support or link to this DNP project. The grid can be found in Appendix F.

Figure 2

Flow Diagram for Inclusion of Articles



Comprehensive Appraisal of Evidence

Common themes of these articles include (a) the prevalence of depression (and often comorbid anxiety) is marked in the adolescent population and the negative effects of COVID-19 on mental health are evident, (b) there is a shortage of qualified mental health providers to meet the need as evidenced by multiple month long waiting periods to establish specialty care, and (c) there are interventions the primary care office/provider can offer beyond screening and referral, but providers don't feel equipped for a variety of reported reasons (Brent 2020, Brent 2021, Farley, 2020, Kocolas et al., 2019, Melnyk, 2020, Nierengarten, 2018, Secrest et al., 2019, Shahidullah et al., 2020, Walkup & Strawn, 2020).

Primary Care Role

Primary care providers are well positioned to meet the mental health needs of their patients for multiple reasons. Firstly, PCPs are more accessible than mental health care specialists and importantly, they are already trusted and respected by family members (Bonin et al., 2022, Farley et al., 2020). Families are already bringing their children into primary care offices for mental health needs. In the United States, up to 50% of pediatric primary care visits are educational, psychosocial, or behavioral health related (Kenny et al., 2021). Recommended primary care interventions include screening, prevention for those at risk (encouragement and monitoring of health behaviors that influence mood such as sleep habits, adequate exercise, support systems), preemptive care for the early symptomatic children, and more high-quality medication prescribing (defined as offering safe, effective, well-monitored, and patient-centered prescriptions to the right children at the right time) (Walkup & Strawn, Cheung et al., 2018, Nierengarten, 2018). Furthermore, 76% of adolescents that have died by suicide saw their PCP in

the month before their death while only 20% saw a mental health professional in the same period (Secrest et al., 2019). Both the AAP and the American Academy of Child and Adolescent Psychiatry propose that mild and moderate presentations of common psychiatric disorders (including depression) can be effectively managed in the pediatric primary care setting (Walter et al., 2019; Secrest et al., 2019). Several studies suggest that many pediatric PCPs do not feel competent in their level of depression literacy or suicide prevention (Foy et al., 2019; Secrest et al., 2019). Additionally, despite the relatively high rates of major depressive disorder in the pediatric population, studies specific to primary care show that youth are under-identified and under-treated in the primary care setting (Cheung et al., 2018; Farley et al., 2020). A study from 2020 showed that 43% of pediatric chief medical residents nationwide report little knowledge of depression treatment and 40.5% did not prescribe first-line pharmacologic treatment (Foy et al., 2019; Shahidullah et al., 2020). Specifically, Shadullah et al. (2020) indicates that pediatric primary care providers feel most knowledgeable about prescribing SSRIs but less so about titrating, monitoring, and discontinuing the medication. Along with the patients, pediatric providers are affected by this lack of comfort. According to LaLonde et al. (2020), primary care providers who report a lack of comfort with depression/mental health management also had increased levels of provider burnout and interpersonal stress.

At current, best-practice is that PCPs follow the GLAD-PC guidelines for adolescent depression by offering one or more evidence-based treatments such as psychotherapy or antidepressant medication at the time of the positive screen (Cheung et al., 2018, Kenny et al., 2021; Bonin et al., 2022). Unfortunately, factors that determine the likelihood of any *individual* clinician choosing to prescribe is poorly understood (Tulisiak et al., 2018). One identifiable

concern that has decreased general pediatric providers likelihood to prescribe antidepressants is the 2004 FDA Black Box Warning regarding increased suicidality in children, adolescents, and young adults who are utilizing anti-depressant pharmacotherapy, especially during initiation of the treatment (Tulisiak et al., 2018). Notably, subsequent studies have failed to replicate the initial effect (increased suicidality) from multiple large-scale studies (Bridge et al., 2009; March et al., 2009; Strawn et al., 2015; Walkup et al., 2015). Regardless, prescribing of antidepressants in the pediatric populations remains a concern for pediatric PCPs (Tulisiak et al., 2018, Secrest et al., 2019). Factors that increased a provider's likelihood to prescribe include (a) collaboration with a mental health practitioner (e.g. therapist, psychologist, psychiatrist) and (b) having a strong patient-parent-provider relationship/alliance (Tulisiak et al., 2018). Given that the antidepressant response rate of 47-69% for youth with anxiety and depression, it is important to increase provider's comfort level with high-quality prescribing in the primary care setting (Cheung et al., 2019; Tulisiak et al., 2018; Walkup & Strawn, 2020).

Approved Treatments for Pediatric Depression

Historically, monoamine oxidase inhibitors and tricyclic antidepressants were used in the management of adolescent depression (Cheung et al., 2018). These are now considered “older antidepressants” and don't hold the same efficacy or safety profiles as “newer” antidepressants such as selective serotonin reuptake inhibitors (SSRIs) and serotonin norepinephrine reuptake inhibitors (SNRIs) (Cheung et al., 2018). A meta-analysis shows that 6 times more teenagers would benefit from pharmacologic treatment than would be harmed (Cheung et al., 2018, Tulisiak et al., 2018). Specifically, fluoxetine (an SSRI) has the most evidence to support its use in the adolescent population and is considered a first-line therapy (Cheung et al., 2018, Bonin &

Moreland, 2022). Approximately 30% of patients will not respond to fluoxetine- for these patients, it is recommended to move to an alternative SSRI treatment with sertraline (escitalopram or citalopram are also reasonable choices) (Bonin & Moreland, 2022; Cheung et al., 2018). Along with pharmacologic treatments, psychotherapy has proven beneficial in the alleviation of depressive symptoms (Beharry, 2022; Bonin & Moreland, 2022; Brent 2020; Brent 2021; Cheun et al., 2018; Farley, 2020; Kenny et al., 2021; Kocolas et al., 2019; Melnyk, 2020; Nierengarten, 2018). Cognitive Behavioral Therapy (CBT) is a type of psychotherapy that aids patients in awareness of negative thinking so they can challenge the unhelpful narrative and respond effectively (Mayo Clinic, 2022). CBT is a very common treatment for adolescent depression and used best in combination of SSRI treatment (Cheung et al., 2018; Farley et al., 2018; Tulisniak et al., 2018; Walter et al., 2019). One benefit of CBT therapy is that the therapeutic effects last beyond the discontinuation of therapy while pharmacology stops when administration stops (Cheung et al., 2018; Walter et al., 2019). CBT therapy is not within the scope of primary care providers, unless there has been specialized training.

Strengths of Evidence

A strength of this literature review was that a good variety of research was included in the synthesis, including meta-analyses, randomized control trials (RCTs), mixed method studies including qualitative and quantitative research, statistical and numerical data, clinical guidelines, and expert opinion. Another strength of literature is the consensus among findings. For example, multiple studies showed that children with depression are undertreated in the PC setting and/or a PCP desire for more support regarding depression management (Bonin & Moreland, 2022, Beharry, 2022, Brent, 2021, Zuckerbrot et al., 2018, Cheng et al., 2018, Farley et al., 2020).

Weaknesses, Gaps, and Limitations of Evidence

The literature review is limited because there are few clinical studies that explore exclusively the addition of educational material on the impact of PCP confidence levels managing adolescent depression. While most research included education for primary care providers, there is a variety of additional interventions that are beyond the scope of this project such as incorporating BH providers into PCP offices, offering brief behavioral therapy (BBT) in the primary office by master level psychiatrists, offering on-demand psychiatric consultation and operational support for practice transformation. Essentially, much of the evidence recommends some level of collaborative care between primary care clinicians and mental/behavioral health clinicians in the treatment of adolescent depressive disorders that is beyond the scope of this project. However, Zuckerbrot et al. (2018) reports that education and training in key topics areas (including the initial management of adolescent depression) can be a feasible and cost-effective way to improve care delivery when broad organizational restructuring is intangible. Additionally, a notable weakness is that studies specific to the pediatric population are limited with much more evidence supporting adult primary care interventions. Lastly, one limitation is the use of only one search engine (CINHAL).

METHODS

Project Design

The quality improvement (QI) project uses a quantitative, single group pre-questionnaire and post-questionnaire. An evidence-based educational video presented from the AAP in which components from the Guidelines for Adolescent Depression in Primary Care (GLAD-PC) are presented. The purpose of this QI project is to improve pediatric providers' knowledge regarding

depression management at El Rio Community Health Center. The project will use pre-education and post-education questionnaires to determine the effect of the education. The same education will be given to all providers at El Rio Community Health Center. However, the knowledge improvement will be unique for each participant.

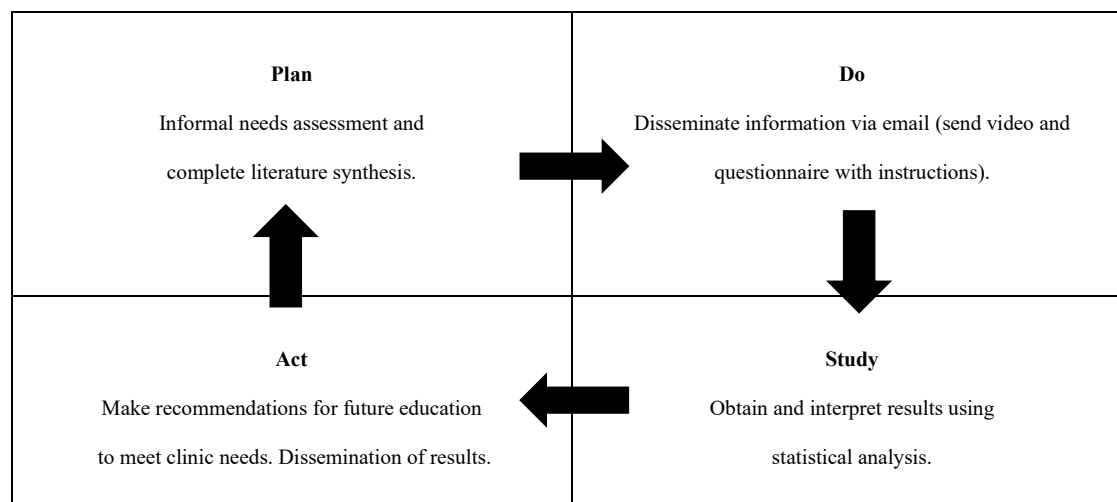
Model for Implementation

The Institute for Healthcare Improvement (IHI) recommends the use of the Plan-Do-Study-Act (PDSA) cycle for implementation of quality improvement projects (IHI, 2022). The PDSA cycle is a four-step process that includes continual refinement until no further interventions are required because the goal is met (IHI, 2022). First, a “plan” is made for which change is desired (IHI, 2022). In this project, the evidence-based education is the intervention to support the goal of the project. The planning process began with the synthesis of literature and doing an informal needs assessment. The informal assessment consisted of a discussion between this DNP student and the site champion. The site champion agreed with the need for improvement in provider education regarding adolescent depression management. The review of the literature guided the understanding of the PCPs current role, expected role, and barriers to maximizing the PCP role. Next in the cycle is the act of carrying out the intervention- this is called the “do” stage (IHI, 2022). For this part of the project, the educational video will be provided via email to all the pediatric PCPs in the El Rio (Congress) Health Center with clear instructions on the completion of the education, including the pre- and post-test questionnaires. The “study” portion of the project will be completed via the statistical analysis of the answers between the pre- and post-test questionnaires. The “study” step for this DNP project will provide data on how efficacious the education was for this group of pediatric primary care providers.

Lastly, the “act” portion of the cycle will be completed by making any changes based on the feedback from participants. The “act” phase will also include dissemination of the results via an executive summary to the clinic.

Figure 3

Plan-Do-Study-Act (PDSA) Model



Setting and Stakeholders

The setting for this project is El Rio Pediatric Community Health Center (Congress) located in Tucson, AZ. The office is in the Menlo Park district of Tucson and borders a major highway (I-10) and a large and recognizable park of Tucson (Sentinel Peak Park) (GoogleMaps, n.d.). El Rio (Congress) is 0.7 miles south of Pima Community College and 3.5 miles west of the University of Arizona. Tucson is second to only Phoenix for being the largest city in Arizona with an estimated population of 542,629 in 2020 (United States Census Bureau [USCB], 2022). Tucson has less than the national average for percentage of people younger than 18 years of age (20.6% and 22.3% respectively) (USCB, 2022). Regarding race, Caucasian alone (not Hispanic or Latino) represent the majority of the population at 51.2%, which is below the national average

of 60.1% (USCB, 2022). Hispanic or Latino's make up 44.2% of the population which is well above the national average of 18.5% (United States Census Bureau, 2022). The median value of owner-occupied housing units from 2016-2020 was \$199,400 and median gross rent was \$931 and the average household size is 2.45 people per housing unit (USCB, 2022).

As a larger system, El Rio has 15 locations in Tucson. This project will be implemented at El Rio's "Congress" location on 839 W. Congress St. Tucson, AZ 85745. The health system includes onsite pediatric primary care, radiology services, laboratory services, dental services, and a pharmacy (El Rio, n.d.). Regarding primary care providers, the El Rio Congress location consists of medical doctors (MD) and pediatric nurse practitioners (PNP) (El Rio, n.d.).

Stakeholders for this project include clinic administration and management, pediatric primary care providers, nurses, medical assistants, patients, and families of patients. Dr. Electine Shirley, DNP-PNP-PC is the site champion for implementation at El Rio. The project is low risk for her, requiring minimal effort to direct or facilitate implementation at the site with the benefits of improved quality improvement on pediatric depression management. Providers will be most directly influenced by the project because the education is geared towards them. With that, they share the most risk because they needed to commit the most time and effort for completing the education.

Planning the Intervention

The concepts of pediatric depression management were discussed with the site champion and provider, Dr. Shirley who agreed with the need for the education. The synthesis of the literature displayed which areas of pediatric depression management are well understood and which areas need further research. The American Academy of Pediatrics (AAP) has multiple

educational videos and content available for pediatric PCPs to access on depression screening and management. The video chosen for implementation of this project is titled “Adolescent Depression: Pediatric Mental Health Minute Series.” It is a 20 minutes and 34 seconds long and is presented by Dr. Elise Fallucco. Dr. Fallucco is the chief and associate professor for child and adolescent psychiatry at the University of Florida College of Medicine in Jacksonville. The video was chosen because it covers a variety of content on adolescent depression management. Additionally, the provider education (video) was chosen because of its congruency with CDC and AAP guidelines for depression management, as well as the findings from the literature search.

The video contains information on depression prevalence, screening, management, and how and when to properly refer. The video discusses different pharmacologic treatment options and offers a variety of scenarios in which one may be recommended over another. The video also discusses and clarifies which patients are appropriate to manage in the primary care setting and which patients should be referred out to psychiatry. The video link and the entirety of its script can be found in Appendix E. The goal of the video education is to consolidate and simplify the current recommendations for management of adolescent depression in the primary care setting. Providers will be able to maintain access to the education after the completion of the project because it is a web-based and funded and maintained by the AAP.

Participants and Recruitment

Participants for this DNP project are pediatric primary care providers at El Rio Congress and they were recruited via email with the assistance of the site champion. The recruitment script can be found in Appendix C.

One week before the education was sent out, an email was sent explaining the purpose of the education and to expect another upcoming email with the links to the prequestionnaire, educational video, and postquestionnaire. The video education will be sent to the participants in the same email, with a link to begin the process. The participants were given three weeks to complete the intervention. The implementation phase of this QI project was considered complete after three weeks of availability to the content.

The project leader obtained approval from the University of Arizona Institutional Review Board (IRB) (Appendix A) and the El Rio IRB board (Appendix A). Participation is voluntary but encouraged and inclusion criteria includes (a) pediatric primary care provider, (b) employed at El Rio (Congress) Community Health Center, and (c) can read, write, comprehend, and speak English. The El Rio clinic president was contacted by email, requesting permission to conduct the QI project at the El Rio Congress location and it was granted, pending the IRB review. The disclosure form can be found in Appendix B.

Consent and Ethical Considerations

A determination of human research form was submitted to the University of Arizona IRB board and the El Rio IRB board and successfully obtained approval of the implementation of this project. The use of IRB boards assure credibility of the project and ensure safety of all human participants are safeguarded, the implementation of the project will begin. A disclosure form was emailed to all participants at the time of the second email (which contains the educational contents) and completion of the prequestionnaire and postquestionnaire surveys signified consent (as explained in the disclosure). The data will be stored on the project leader's password protected computer.

Beneficence, Respect for Human Dignity, Justice

Ethical considerations must always be evaluated when working with people during quality improvement. Ethical demands can sometimes conflict with the production of quality evidence (Polit & Beck, 2017). Any time humans are used as study participants, caution must be taken to protect their rights (Polit & Beck, 2017). The National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research created the Belmont Report to serve as a basis for research regulations (Polit & Beck, 2017). There are three principles included in the Belmont Report that provide standards for ethical conduct in research and those are beneficence, respect for human dignity, and justice (Polit & Beck, 2017).

Beneficence

Beneficence is an obligation in clinical practice and remains a forefront consideration within this DNP project. The ethical decision to seek benefit to the patient's wellbeing and preference is clearly exposed in the aim of this project. Offering video education to the providers who will offer care to patients, serves the patient because the video is evidence-based and supported by literature. All aspects of the project respect the inherent rights of human dignity by offering participants the decision to participate in the education. Justice within the health care setting is defined as a form of fairness that implies an equal distribution of resources (Grace & Uveges, 2022). This DNP projects aim is to offer education to primary care providers who serve a large proportion of Hispanic patients and families. This is an example of justice (distribution of resources) given the data that says the Hispanic population is the least likely to receive adequate depression identification and management (Brent et al., 2020).

Respect for Human Dignity

Respect for human dignity is the participants right to self-determination and the right to full disclosure (Polit & Beck, 2017) . Full disclosure is providing participants with a complete description of the study including risks and benefits, the participant's right to consent or refuse, and the researcher's responsibilities (Polit & Beck, 2017). A consent form outlying these rights was included with the contents of the project.

Justice

Justice within the research setting is defined as a form of fairness that implies an equal distribution of resources (Grace & Uveges, 2022). This DNP projects aim is to offer education to primary care providers who serve a large proportion of Hispanic patients and families. There is an example of justice (distribution of resources) given the data that says the Hispanic population is the least likely to receive adequate depression identification and management (Brent et al., 2020). This DNP project was submitted to the University of Arizona IRB and El Rio approval board prior to implementation.

Data Collection

Data will be collected using the pre- and post-questionnaires between an educational intervention (video). The pretest and posttest was delivered via email using Microsoft Forms. Each participant chose a random six-digit identification number to complete the pre- and post-questionnaires, so that data can be matched to the individual participants without any identifiers. The questions in the test were developed by this DNP student based on content from the educational video. The pre- and post-questionnaires consists of 10 knowledge-based questions and the pre-questionnaire included three demographic questions including job title, years of

experience, and if the participant has specific training in adolescent depression and its management (Appendix D). The questionnaires were estimated to take 5-15 minutes to complete, and no identifiable information was gathered. The postquestionnaire will include the same 10 knowledge questions as the prequestionnaire. The data was exported for statistical analysis and the questionnaires will be deleted and kept only on the University of Arizona College of Nursing's database until 2027.

Data Analysis

No identifying information will be collected from participants for this DNP project. Analysis of the data will be conducted via descriptive statistics and a paired t-test. Descriptive statistics and a paired t-test will compare the data collected from the pretest and posttest. A paired t-test is used to compare two means that are from the same individual, object, or related units (Polit & Beck, 2017). Using the paired t-test, a determination can be made whether there is statistical evidence that the mean difference between paired observations on a specific outcome is significantly different from zero (Polit & Beck, 2017). The paired t-test will assist in determining whether the findings on the pre- and postquestionnaire are statistically significant. The statistical analysis will measure providers' knowledge on adolescent depression management in the pediatric primary care setting before and after the educational intervention.

RESULTS

Outcomes

This purpose of the educational presentation was to assess providers knowledge of current primary care depression screening and management for adolescents. Therefore, the pre

and post-questionnaire measured the knowledge of this topic before and after the 20-minute educational, evidence-based video, to assess for improvement of knowledge rates.

Description of Sample Population

Twenty primary care pediatric providers were invited to participate, with 8 completing the pretest and seven completing the posttest for a total of seven usable data points (n=7) and 35% total participation. The additional pre-questionnaire was discarded to avoid skewing statistical analysis. The testing and video education was available to all participants from 2/1/2023 through 2/21/2023 via email, with link to Google Forms testing and video education. The demographic breakdown of participants is offered below (Table 1), showing a variety of experience, specific training, and professional roles by participants. The largest sample came from medical doctors (63%) and those with 20+ years of experience (38%) (Table 1).

Table 1

Demographics of Participants/PCPs

How many years of experience do you have as a primary care provider?		Have you received extra training specific to adolescent depression and its management beyond what was required to complete your degree?		What is your professional role?	
0-5 years	2 (29%)	Yes	3 (43%)	Medical Doctor	4 (57%)
6-10 years	1 (14%)	No	4 (57%)	Nurse Practitioner	3 (43%)
11-20 years	1 (14%)				
20+ years	3 (42%)				

Survey Responses

The pre-questionnaire and post-questionnaire had identical questions, which assessed the knowledge of current pediatric depression knowledge and management. The average score of the prequestionnaire was 67% with a median of 60% (Table 4). The lowest score on the pre-questionnaire was 50% and the lowest score on the post-questionnaire was 90%. The average

score of the post-questionnaire was 98% with a median of 100% (Table 4). To see improvement in individual questions (analyzed as a group), see Table 2. To view personal improvement in knowledge rates, see Table 3. The first question (“what percentage of adolescent’s experience depression”) showed improvement rates of 86% and only one provider answered the question correctly the first time with all providers correctly answering it on the postquestionnaire. The second question was a true/false question: “adolescent depression is twice as common in females than males.” There was no change in responses for question 2 with all participants answering correctly both times. The 3rd question tested the PCP’s knowledge of interpreting the PHQ, with improvement rates of 29% from the pre- to postquestionnaire. The 4th question states, “what is the minimum length of symptoms required to make a diagnosis of depression.” As with question #3, question #4 showed a 29% improvement. The next question (see Table 2), assesses clinical judgment in a hypothetical scenario of a 17-year-old female reporting passive suicidal ideation and there was no improvement in performance (7 correct answers on the pre-questionnaire with the same results on the post-questionnaire). Next, question #6 showed a 43% improvement rate from pre- to postquestionnaire and stated, “of the following SSRIs, which is the most activating and may be a good option for kids who are hard to get off the couch and require an energy boost?” Four primary care providers correctly answered fluoxetine on the first round, while 100% (7) correctly answered it on the postquestionnaire. The next question was another hypothetical clinical situation regarding a 15-year-old male with a family history of bipolar disorder who is scoring a 15 on his PHQ. The question asks where the child should receive his depression management with the possible answers being emergency room, primary care, or psychiatry. Four of the participants correctly identified psychiatry on the prequestionnaire, while

6 participants (86%) correctly identified psychiatry on the postquestionnaire, for a 30% improvement rate. Question 8 showed an improvement rate of 15% in assessment of which treatment modality is most effective for adolescent depression. Question 9 asked which medication is best for a child with comorbid anxiety with 5 participants answering the question correctly on the pretest and 7 participants correctly answering the question on the prequestionnaire for an improvement rate of 29%. Lastly, question 10 asked how many more teens benefit from antidepressant medication than are harmed and mentioned the black box warning from 2004. This question showed the second most improvement with 72% improvement from prequestionnaire to postquestionnaire. While only 2 participants correctly identified that six times more teens benefit from antidepressant medication on the prequestionnaire, 100% of the participants identified the correct answer on the postquestionnaire. The average time to complete the pre-questionnaire was 5 minutes and 4 seconds, while the average time to complete the post-questionnaire was 2 minutes and 33 seconds. An overview of the questions and differences in pre and postquestionnaire scores is available in Table 2.

Table 2*Surveys and Correct Responses*

Question	Pretest n =7(%)	Posttest n (%)	Difference in Scores
1. What percentage of adolescent's experience depression?	n=1 (14%)	n= 7 (100%)	+ 86%
2. Adolescent depression is twice as common in females than males.	n=7 (100%)	n= 7 (100%)	No change
3. A score of 11 on a PHQ-9 represents what level of depression?	n= 5 (71%)	n= 7 (100%)	+29%
4. What is the minimum length of symptoms required to make a diagnosis of depression?	n= 5 (71%)	n= 7 (100%)	+29%
5. You are seeing a 17-year-old female with a history of mild depression who reports symptoms have worsened in the last month. She is seeing a clinical psychologist for cognitive behavioral therapy and meets twice monthly (she has completed 4 sessions and plans to do 8 more). She does not take an antidepressant. The patient reports, "I want to fall asleep and not wake up." What is the <u>next</u> best action?	n= 7 (100%)	n= 7 (100%)	No change
6. Of the following SSRIs, which is the most activating and may be a good option for kids who are hard to get off the couch and require an energy boost?	n=4 (57%)	n= 7 (100%)	+43%
7. A 15-year-old male presents to clinic to establish care after moving from Salt Lake City, Utah. The dad of the child reports a history of allergic rhinitis, depression, and a family history of hypertension and bipolar disorder. The patient has a PHQ-9 score of 15 today despite taking his max dose of fluoxetine daily. He denies side effects from the medications but says, "it just doesn't help anymore." The patients denies intent to hurt self or others. Curious about his family history, you ask who in the family has bipolar disorder and dad informs you that the patient's biological mother has bipolar disorder but she is no longer in the picture. Given all this information, where should this patient receive his depression management?	n = 4 (57%)	n = 6 (86%)	+30%
8. The AAP Guidelines for Adolescent Depression in Primary Care (GLAD-PC) reports which of the following treatment modalities as most effective in adolescent depression management (with a response rate of 71%)?	n= 6 (85%)	n= 7 (100%)	+15%
9. The four most prescribed SSRIs for adolescents include fluoxetine (Prozac), Sertraline (Zoloft), Citalopram (Celexa), Escitalopram (Lexapro). Which medication is best for a depressed patient with comorbid anxiety?	n=5 (71%)	n= 7 (100%)	+29%
10. There is a black box warning for children/adolescents regarding antidepressant treatment because of potential increased suicidal thoughts and behaviors. How many more teens benefit from antidepressant medication than are harmed?	n = 2 (28%)	n= 7 (100%)	+72%

Table 3*Individual Performance*

Participant (Professional Role)	Pretest Results	Posttest Results	Change in Scores
#1 (NP)	90%	100%	+10%
#2 (MD)	90%	100%	+10%
#3 (MD)	60%	100%	+40%
#4 (NP)	50%	90%	+40%
#5 (MD)	50%	100%	+50%
#6 (MD)	60%	100%	+40%
#7 (NP)	70%	100%	+30%

Table 4*Descriptive Statistics of the Pretest and Posttest Participant Scores (n=7)*

Statistics	Pretest (%) N=7	Posttest (%) N=7
<i>Mean</i>	67	98
<i>Median</i>	60	100
<i>Minimum</i>	50	90
<i>Maximum</i>	90	100

Results of Paired t-Test

The results of the statistical analysis were favorable to the purpose of the project. Participant scores increased by 31% from the pretest to the posttest after viewing the educational video. When comparing the pretest and posttest results, the two-tailed P value equals 0.0019, which by conventional criteria, determined the difference is extremely statistically significant (see Table 5). The mean of pretest minus posttest equals -31.43 with a 95% confidence interval of this difference from -45.81 to -17.05.

Table 5*Descriptive Statistics Paired t-Test*

Pretest		Posttest		<i>n</i>	<i>df</i>	<i>Sig (2-tailed)</i>	<i>t</i>
<i>M (%)</i>	<i>SD</i>	<i>M (%)</i>	<i>SD</i>				
67	15.779	98	3.499	7	6	0.0019	5.2842

DISCUSSION

Summary and Interpretation

With the significant number of children who have unmanaged depression, in correlation with the barriers adolescents face to receive specialty mental health services, primary care has become a common place for families to bring up their mental health concerns (Cheung et al., 2018). Additionally, Hispanic children are the least likely to be correctly diagnosed and managed of any other ethnicity (Brent et al., 2020). Thus, primary care providers who are serving a large Hispanic population, such as at El Rio Congress, are well positioned to discuss the importance of depression management with this population. It is prudent that pediatric primary care providers can counsel, support, manage, and correctly refer patients suffering from depression while in the primary care setting. Supporting primary care providers to improve gaps in clinical knowledge and offering updated recommendations was the foundation of the project. The video education in this QI project met the goal of the project, which was to improve PCP knowledge of adolescent depression management through evidence-based video education. This DNP project adds important information to the current body of literature on the topic and creates notions for future research.

Implications

Practice

The potential for practice improvement is significant given the ability of the intervention to improve knowledge rates of depression management. Only 35% of the available participants completed the QI project, reoffering the intervention to members of the organization later may increase participation and help advanced practice nurses, physician assistants, and physicians

improve knowledge rates of adolescent depression management. Improved management in the primary care setting at El Rio (Congress) could lead to improved depression rates of adolescents in their practice. As nurses are very involved in education, offering the same education to nursing staff may also reap benefits, as they serve their patients through advocacy.

Education

After reviewing the results of the pre- and postquestionnaires, and when considering the PDSA cycle, I believe this QI project could be implemented on a larger scale to more El Rio systems who serve pediatric populations. Additionally, a few questions could be altered to highlight areas that showed need for improvement (medication and clinical management). Questions #2 and #5 scored 12% improvement and “no change” (scoring 100% on pre- and post-test) sequentially, meaning they could be replaced with questions highlighting medication and clinical management instead of demographic questions (which the providers are seemingly well versed). The literature suggests primary care providers desire continued education on depression management and this DNP project addressed the knowledge gap and shows potential for future use.

Research

The current AAP recommendations for pediatric depression management are lengthy and have changed since many providers completed their education (Cheung et al., 2018). This DNP project took the first step in providing video education about updated management techniques and recommendations. Research questions created by this project could include: are all pediatric primary care providers better at demographic knowledge for depression compared to medication

management? Do years of practice effect how well providers score on management questions?

Further research is needed on the topic.

Policy

Offering the content of this QI project could improve pediatric primary care providers knowledge of depression management beyond El Rio Congress. Potential policy changes include improved higher screening rates, better transfer of care when appropriate, and increased provider job satisfaction (Beharry, 2022; Bonin & Moreland, 2022).

Theoretical Framework

The theory of planned behavior was an effective theoretical framework for this project. Within the theory, the principal investigator (PI) was able to understand that primary care providers (PCP) act in sensible ways and any deviation from best practice was due to a lack of knowledge on current, evidence-based literature. This is especially important for the topic of depression management, which has not historically been managed in the primary setting to the capacity which is currently expected. Thirty-eight percent of the participants in this project have been in the field for more than 20 years, while the expectation of increased PCP role was only initiated in 2007 (Cheung et al., 2018).

Strengths

Using a methodological framework for this QI project was a strength and offers insight into future use of this content. Additionally, using a pretest-posttest design has been declared a successful way to measure the effectiveness of an intervention (Polit & Beck, 2017). In this case, we can be confident that the intervention was successful at improving knowledge rates for pediatric primary care providers at El Rio Congress. An adequate sample size was obtained for

measurement and the El Rio point of care representative agreed with the usefulness of the content for the practice. The information was easily available for providers to complete whenever they had the availability because it was given via email (they did not have to schedule time away from patients, lunch, or other commitments but rather could participate at their leisure). Another strength of the electronic nature of the content was that the participants now have unlimited access to the intervention to review as desired. In fact, since the data was calculated, 2 more providers have utilized the content of the project; opening the content was at the request of providers who missed the eligibility period.

Limitations

There were limitations present while completing this project. One limitation was that providers did not respond quickly to participate. In fact, the first week there was zero participants and so the window for participating was opened one week longer in hopes of gaining more interest. However, even with the extension, only 35% of available participants completed the intervention. While the above convenience of electronic communication (listed above in “strengths”) are valid, an in-person event potentially may have reaped higher participation rates.

DNP Essentials Addressed

DNP Essential II – Organizational and Systems Leadership for Quality Improvement and Systems Thinking

The goal of essential II is to promote patient safety and excellence in practice, as well as the ongoing improvement of health outcomes in practice (American Associate of Colleges of Nursing [AACN], 2006). This DNP project aligned well with this goal because its foundation is to improvement knowledge rates of evidence-based best practice. Additionally, offering video

education, which can later be referenced, is a way to offer providers a way to balance productivity with quality of care (allowing no interruption to patient-care time and maintaining work-life balance for providers), which is another cornerstone of DNP Essential II (AACN, 2006).

Conclusions

In summary, this DNP project addressed a current need in pediatric healthcare while successfully improving pediatric primary care providers knowledge rates of depression management at El Rio Congress. An evidence-based video was offered to providers at El Rio Congress and measured improvement rates from pre- and post-questionnaire questions. The role of primary care involvement in depression management has changed since many providers have completed their education, so it is important for all providers to receive updated, evidence-based guidelines at regular intervals. With this increased knowledge, providers are better equipped to counsel parents and adolescents on effective depression screening, management, and referral.

Plan for Sustainability

The biggest recommendation for sustainability is that the content be made available for all pediatric primary care providers at El Rio Congress and other El Rio facilities. A provider emailed this writer after the testing period was closed and the content was opened for them, explaining their results will no longer be used for data collection while encouraging their participation given the benefits of the educational video. Because the video remains available through the American Academy of Pediatric “Mental Health Series,” any provider (or parent/student/patient- there are no restrictions on the website), can use the information for redistribution. Given the web-based formula, delivery to a wide variety of schools, clinics, and

organizations would be very easy. Currently, all providers at El Rio Congress have unlimited access to this video and all others within the AAP mini-series.

Plan for Dissemination

As agreed, upon through the El Rio IRB, an executive summary of this DNP project was given to Marcia Ortega-Haro, LPN, who is the El Rio Clinical Quality Manager (CQM). The CQM who will disseminate the findings to the entirety of the clinic.

APPENDIX A

EL RIO SITE APPROVAL/THE UNIVERSITY OF ARIZONA INSTITUTIONAL REVIEW

BOARD AUTHORIZATION LETTER

El Rio Health- Congress
839 W. Congress Street
Tucson, AZ 85745

6/30/2022

University of Arizona Institutional Review Board
c/o Office of Human Subjects
1618 E Helen St
Tucson, AZ 85721

Please note that Ms. Courtney Smith, UA Doctor of Nursing Practice student, has permission of the El Rio Health- Congress Clinic to conduct a quality improvement project at our facility for her project, "Maximizing Primary Care Provider's Scope in Adolescent Depression Management Through Video Education."

Ms. Smith will conduct a survey of health care providers at El Rio Health- Congress Clinic. She will recruit providers through email. The email will provide a description of the project, what they will be asked to do, the time involved, and a link to the online video and survey. Ms. Smith's activities will be completed by 04/01/2023.

Ms. Smith has agreed to provide to my office a copy of the University of Arizona Determination before she recruits participants. She will also will present aggregate results to the providers at their monthly staff meeting.

If there are any questions, please contact my office.

Signed,


Dr. Andrew Arthur, Clinic President

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[EXT]Research Approval: PCP Knowledge of Adolescent Depression Management

External Inbox x

23  **Erin Dougherty** <ErinD@elrio.org> Wed, Jan 18, 12:44 PM
to me, Electine, MD, Marisa, Marcia ▾

+

External Email

Hi Courtney,

Your study passed final approval this morning and you may begin your project.

As this was designated as QI, you will need to work closely with the Manager of Clinical Quality, Marcia Ortega-Haro (copied on this email).

Please keep me updated on the progress of your project and reach out if you have any questions!

Thanks,
Erin
Erin L. Dougherty, PhD, MPH She/Her
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"Your Health is Our Passion"



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NOT HUMAN RESEARCH

November 18, 2022

Courtney Smith

Dear Courtney Smith:

On 11/18/2022, the IRB reviewed the following submission:

Type of Review:	Initial Study
Title:	Maximizing Pediatric Primary Care Provider's Knowledge of Adolescent Depression Management
Investigator:	Courtney Smith
IRB Submission ID:	STUDY00002155
Sponsor:	None
Prime Sponsor:	None
IND, IDE, or IDE:	None
Documents Reviewed:	<ul style="list-style-type: none"> • Courtney Smith IRB Submission, Category: IRB Protocol; • Disclosure Form 11.12.pdf, Category: Consent Form; • DNPprojectScript.docx, Category: Participant Material; • post-test.docx, Category: Data Collection Tool; • Pre-test.docx, Category: Data Collection Tool; • RecruitmentEmail.docx, Category: Recruitment Materials; • siteauthorizationwithsig.pdf, Category: Institutional Approval; • Smith_Advisor Attestation.pdf, Category: Other;

The IRB determined that the proposed activity is not research involving human subjects as defined by DHHS and FDA regulations.

IRB review and approval by this organization is not required. This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made and there are questions about whether these



APPENDIX B

CONSENT DOCUMENT (DISCLOSURE AND CONSENT FORM)

MAXIMIZING PRIMARY CARE PROVIDER'S KNOWLEDGE IN ADOLESCENT DEPRESSION MANAGEMENT THROUGH DIDACTIC EDUCATION

Courtney M. I. Smith

The purpose of this quality improvement (QI) project is to improve PCP knowledge and available resources about adolescent depression management through video education. The purpose of this DNP QI project is to present an evidence-based educational video on the current recommendations for screening and management of adolescent depression in the primary care setting.

If you choose to participate in this project, you will be asked to complete a questionnaire, watch a 20-minute video, and then take a post-video questionnaire. It will take an appropriate 30 minutes to complete all tasks. There are no foreseeable risks to you for participating in this project. Your responses are anonymous, and your name will not be linked to the answers you provide. By participating, you agree to have your responses used for data collection.

Participation in this project is completely voluntary and refusal to participate will be free from penalty. You may withdraw from the project at any point in the process of completion, and for any reason. Additionally, you may opt out of answering any questions by simply leaving them blank. By participating, you are not giving up any legal rights you have as a participant in this project.

For questions, concerns, complaints, or clarifications, you may call the Principal Investigator Dr. Electine Shirley at 520-670-3909 or this writer at 715-418-1905.

With Gratitude,

Courtney Smith

APPENDIX C

RECRUITMENT MATERIAL (RECRUITMENT EMAIL)

Recruitment email

Hello,

My name is Courtney Smith, and I am a DNP student at the University of Arizona. You are receiving this email because you are a pediatric primary care provider at El Rio Congress.

More than 1 out of 10 adolescents (11.3%) in the United States suffer from depression while 1 in 6 high school students in the United States report they have genuinely considered suicide (Fallucco, 2022). Unfortunately, according to multiple large-scale studies, only a minority (as low as 15%) of youth suffering from MDD receive adequate treatment (Fallucco, 2022, Farley et al., 2020, Kenney et al., 2021).

I am conducting a quality improvement project with the goal to improve provider knowledge on the assessment and management of pediatric depression specific to the primary care setting.

Attached is a link to a 20-minute educational video on the topic in addition to a pre- and post-questionnaire. To get started, please click on the link to begin. You will be asked to start by completing the pretest, then prompted to watch the video, and lastly you will take the posttest.

Please email me with any questions or concerns regarding the process to participate or the project in general. Thank you for your time and investment in the betterment of pediatric depression management in the primary care setting.

With gratitude,

Courtney Smith

APPENDIX D

EVALUATION INSTRUMENTS (DEMOGRAPHIC, PRE- AND POST-QUESTIONNAIRES)

Pre- and Post-Questionnaires

1. What percentage of adolescent's experience depression?
 - A. 6.3%
 - B. 8.9%
 - C. 11.3%
 - D. 15.9%
2. Adolescent depression is twice as common in females than males.
 - A. True
 - B. False
3. A score of 11 on a PHQ-9 represents what level of depression?
 - A. Absent
 - B. Low
 - C. Moderate
 - D. High
4. What is the minimum length of symptoms required to make a diagnosis of depression?
 - A. 2 weeks
 - B. 2 months
 - C. 3 months
 - D. 6 months
5. You are seeing a 17-year-old female with a history of mild depression who reports symptoms have worsened in the last month. She is seeing a clinical psychologist for cognitive behavioral therapy and meets twice monthly (she has completed 4 sessions and plans to do 8 more). She does not take an antidepressant. The patient reports, "I want to fall asleep and not wake up." What is the next best action?
 - A. Any report of suicidal thoughts requires immediate referral to the emergency room- I will ensure a safe transfer to emergency care.
 - B. I will explain the risks/benefits of antidepressant medication and recommend an SSRI.
 - C. I will assess if she has a plan for falling asleep and never waking up again, including previous attempts to do so.
 - D. I will ask her parents if they knew she was struggling so much.
6. Of the following SSRIs, which is the most activating and may be a good option for kids who are hard to get off the couch and require an energy boost?
 - A. Fluoxetine
 - B. Sertraline
 - C. Citalopram
 - D. Escitalopram
7. A 15-year-old male presents to clinic to establish care after moving from Salt Lake City, Utah. The dad of the child reports a history of allergic rhinitis, depression, and a family history of hypertension and bipolar disorder. The patient has a PHQ-9 score of 15 today despite taking his max dose of fluoxetine daily. He denies side effects from the medications but says, "it just doesn't help anymore." The patient denies intent to hurt self or others. Curious about his family history, you ask who in the family has bipolar disorder and dad informs you that the patient's biological mother has bipolar disorder but she is no longer in the picture. Given all this information, where should this patient receive his depression management?
 - A. It is necessary to send this child to the emergency room today, they should receive follow up care with a psychiatrist after that.
 - B. This child has no active intent to harm himself or others, he is safe to manage in the primary care setting. I would recommend an alternative anti-depressant today with and schedule follow up in two weeks.

C. This child should be referred to therapy and I will either consult or refer to a psychiatrist regarding medication adjustments.

8. The AAP Guidelines for Adolescent Depression in Primary Care (GLAD-PC) reports which of the following treatment modalities as most effective in adolescent depression management (with a response rate of 71%)?

SSRI= selective serotonin reuptake inhibitor

CBT= cognitive behavioral therapy

- A. SSRI
- B. CBT
- C. Placebo
- D. SSRI + CBT

9. The four most prescribed SSRIs for adolescents include fluoxetine (Prozac), Sertraline (Zoloft), Citalopram (Celexa), Escitalopram (Lexapro). Which medication is best for a depressed patient with comorbid anxiety?

- A. Fluoxetine
- B. Sertraline
- C. Citalopram
- D. Escitalopram

10. There is a black box warning for children/adolescents regarding antidepressant treatment because of potential increased suicidal thoughts and behaviors. How many more teens benefit from antidepressant medication than are harmed?

- A. 2 times more teens benefit than are harmed
- B. 4 times more teens benefit than are harmed
- C. 6 times more teens benefit than are harmed
- D. There is equal harm and benefit (about half and half)

Demographic Questions (Pretest only)

1. How many years of experience do you have as a primary care provider?

- a. 0-5 years
- b. 6-10 years
- c. 11-20 years
- d. 20+ years

2. Have you received extra training specific to adolescent depression and its management beyond what was required to complete your degree?

- a. No
- b. Yes

APPENDIX E

PARTICIPANT MATERIAL (INSTRUCTIONAL VIDEO INFORMATION AND LINK)

Video Information:

Title: Pediatric Mental Health Minute Series

Topic: Adolescent Depression

Presented By: Elise Fallucco, MD

Endorsed By: The American Academy of Pediatrics (AAP)

Video Link: <https://www.aap.org/en/patient-care/mental-health-minute/adolescent-depression/>

Video Script:**Slide One [Pediatric Mental Health Minute Series]:**

Hello and welcome to the pediatric mental health minute series. Today's topic is adolescent depression, and I will be your speaker. My name is Dr. Elise Fullucco, I am chief and associate professor of child and adolescent psychiatry at the University of Florida College of Medicine in Jacksonville- I also serve as director at the Center for Collaborative Care.

Slide Two [Disclosure]:

As far as disclosure; I have no relationships to disclose.

Slide Three [Definition of Adolescent Depression]:

So let's start with a definition of adolescent depression. What does it look like when an adolescent is depressed?

Slide Four [Symptoms of Depression]:

Well, when people think of depression, they typically think of people having crying spells and being very sad, but the reality is that adolescents who are depressed often present with irritability. So, they get really upset and bothered, and annoyed more easily. They also have changes in their sleep, appetite, and energy. They sometime report problems with concentrations. And then, very many adolescents with depression report thoughts of suicide.

Slide Five [What is the Incidence or Prevalence of Depression in Children and Adolescents?]:

So, the question is, how common is adolescent depression? Well certainly more common than you think.

Slide Six [Image: Depression, Suicide in US Teens]:

Approximately 1 out of 10 adolescents suffer from depression and this number has actually increased in the last decade according to some major studies. And so, we also know that adolescent depression is more common in females than in males- twice as common in fact. And so that's something you want to be sure to look out for when you're doing well visits, especially for young teenage girls.

Slide Seven [How is Adolescent Depression Recognized]:

How is adolescent depression recognized- well this is really tricky because actually adolescent depression can be very well hidden. It's a feeling and an internal experience we- we call it internalizing symptoms; but basically, adolescents with depression often appear to be kind of normal from the outside and their parents may not realize that something is wrong or may not even know that it's something different than just being a normal moody teenager. So it's so important to screen all adolescents at well visits for adolescent depression because you can't tell from just looking at them whether or not that they're depressed.

Slide 8 [Image: PHQ-9 Modified for Adolescents]:

So the American Academy of Pediatrics as well as the United States Preventative Services Task Force recommend routine screening at well visits for adolescents ages 12 and older for depression and one tool that's very well validated and recommended for use, is called the patient health questionnaire 9 item. The PHQ 9 contains 9 questions which are the nine key symptoms of depression and adolescents, are asked to

rate these symptoms of depression on a scale from zero to three with zero being not at all and three being nearly every day. It's really important to note that the 9th question in the PHQ 9 asks about suicide; are you having thoughts that you would be better off dead or hurting yourself in some way? And so, it's really important to pay attention to whatever response you get from that because obviously that confers information about suicide risk.

Slide 9 [Image: Scoring the PHQ-9 Modified for Adolescents]:

The PHQ 9 is really simple to score you simply add up the checks in each column and a score of 11 or higher is concerning for at least moderate severity depression obviously the higher the score you get, the more concerned you'd be about the severity of depression. And regardless of what the total score is again don't forget question #9, which is about suicidality.

Slide 10 [How is Adolescent Depression Diagnosed]:

So how do you diagnose adolescent depression? While the PHQ 9 is helpful as a screening tool for indicating kids who are at risk, it is not a diagnostic instrument.

Slide 11 [Image: 3-Step Assessment]:

So if somebody scores an 11 or higher on the PHQ 9, what you'd want to do is do a further three step assessment of positive scores to determine if that's really depression.

Slide 12 [Step 1: Determine Context]:

Step one, you want to find out the context of the symptoms; so I like to start out by doing a HEADSS assessment and to get a feel for the psychosocial environment what's going on at home and at school, and potentially at work as well as if there's any drug use because heavy drug use can definitely manifest with depressive symptoms. Once you've figured out the context of what's going on, then you can shift to the PHQ and actually use that as a guide and say hey, I've noticed you shared that you were feeling really irritable or not quite like yourself- can you tell me more about that and how long has that been going on? Typically depression needs to occur for at least two weeks and the longer it's going on the more concerned we would be you can also clarify if there are any changes in sleep and energy this is really important later on if you decide to prescribe medication as treatment for depression because you need to know if they're having insomnia or rather the opposite that they're sleepy all the time because that will inform which choices medicine you use.

Slide 13 [Step 2: Differential Diagnosis and Comorbidity]:

Step two in this assessment is looking at differential diagnosis and comorbidity now you have to think about other things that can present with depressive symptoms we already talked about drugs but they're psychiatric problems like bipolar or psychosis that can present with depressive symptoms. So to screen for bipolar depression, you would ask if they had decreased need for sleep. So the question I'd like to ask is, "has there ever been a time where you had not needed to sleep or could only get one or two hours of sleep at a time and still have plenty of energy?" And if the answer is yes, we're really looking for a period of about five days in a row or more where there's decrease need for sleep and they don't need caffeine or any other stimulant to try to keep them awake during the day- and that would be concerning for bipolar. As far as thinking about psychosis, just make sure to ask if they're having any unusual experiences where they hear or see things that other people can't hear. Of course, as pediatricians and pediatric providers you're always on the lookout for medical causes for symptoms and so make sure to do a thorough review of systems and a thorough physical exam. Common medical illnesses that would cause depressive symptoms would be things like diabetes or anemia or hypothyroidism or mono- so you are considering those particularly when you're doing a focused review of systems and physical exam. The other part of step two is thinking about comorbidity; sadly for depression, comorbidity is the rule rather than the exception. So, we often see depression comorbid with anxiety especially in girls and or with ADHD and sometimes trauma. So I've listed a couple of screening tools that you could refer to, such as the SCARED, to screen for anxiety or the primary care PTSD Screener for post-traumatic stress disorder.

Slide 14 [Step 3: Safety]:

Finally, when making a diagnosis for depression the third step is really thinking about safety. So we know that suicidal thoughts are very common; in fact in the general population of nondepressed patients, approximately one out of 6 U S high school students have reported that they've seriously considered suicide in the last year. And so, in a population enriched for adolescents with depression suicidal thoughts are almost universally found. I'd like to first ask you know and normalize these experiences by telling the adolescent when people feel the way you've described they sometimes want to fall asleep and never wake up or think about ending their life; "has that happened to you" and if they say yes, you're going to want to ask further questions to determine risk. I just want to emphasize that suicidal thoughts alone are not enough indication for emergency referral.

Slide 15 [Safety: Red Flags]:

What we're really looking for red flags such as a suicidal plan, suicidal intent, or suicide attempt. So, I've listed how you could potentially ask if they've had a plan for how they might try to end their life. If they've had a previous attempt, and most importantly intent, "do you feel like you want to act on these thoughts and that you truly desire to do something to end your life" or "do you feel out of control like something would happen and you wouldn't be able to stop yourself from trying to take your life?" If you get a yes to any, if they have a plan, or if they have intent, this is certainly a red flag. As far as *attempts are concerned*, if they've had a recent attempt (you know, talking in the past few days or weeks) that confers very high risk for suicide- so for any of these things, you would refer them to the emergency room. What I would say is that suicide attempts that occur, you know, that had occurred years ago or in the remote past are not necessarily an indicator to bring them to the emergency room at that time assuming that they have no current intent no current plan and no recent attempt.

Slide 16 [When is the Best Time to Refer Patients/Families to a Specialist]:

So the next question, which I'm skipping to, when is the best time to refer patients and families to specialist?

Slide 17 [Image of Stoplight: Next Steps: Treat and/or Refer]:

I like to think about things using this stop light algorithm- which you often use in asthma where red means stop and go to the emergency room, yellow is proceed with caution, and green is the state for outpatient management in your practice.

Slide 18 [Image: Red Light]:

The red patients would be patients with depression and any of the red flags such as suicidal intent, recent attempt, plan, and/or mania or psychosis. For those patients, you want to send them to the emergency room.

Slide 19 [Image: Yellow Light]:

Yellow patients, for whom you proceed with caution or consider referring to a specialist, are patients with depression and a history of trauma (or anyone with a first degree relative who has bipolar or psychosis), and for these patients you prefer them for psychotherapy and consult or refer to a child and adolescent psychiatrist.

Slide 20 [Image: Green Light]:

Now the green patients (the ones who are stable and suitable for treatment in the primary care or pediatric setting) would be those with depression with or without anxiety but without any of the red flags, and for them you could refer to therapy and then consider whether it would be appropriate to initiate medication treatment.

Slide 21 [What is the Treatment for Adolescent Depression?]:

Cognitive behavioral therapy is a mainstay of treatment for adolescent depression and ideally this is delivered by somebody with a PhD or a masters level who has training in CBT, so when you're referring patients make sure to ask if they had therapists have experience with cognitive behavioral therapy. I think sometimes the hardest part about referring patients for CBT is convincing families to go given that you know it can be time consuming and costly from multiple perspectives. So I like to prepare families for

what to expect when they go to therapy something that could be helpful to tell your patients would be to say that “therapy is going to help with depression now and will also help your team improve their skills to help her reduce stress and manage her mood throughout the rest of her life.” A therapist can kind of be considered like a coach, who really meets the team where they are, identifies issues and problems to work on, and is very problem focused and practical and will give them exercises and homework to do in between sessions to help improve their mood and the way that they're thinking about things.

Slide 22 [APPS for Depression/Anxiety]:

In addition, there are some free apps which are available for download that some teens find helpful. Apps like What’s Up, Stop, Breathe and Think, and Headspace are really helpful for on-the-go management of depressed mood or feeling overwhelmed.

Slide 23 [When to Prescribe Medication]:

The tricky question that many pediatric clinicians face is “when do you prescribe medication as treatment for adolescent depression.” The randomized control trial that we look at to help guide a part of our decisions is one called The Treatment for Adolescents with Depression Study. This dealt with teens ages 12 to 17 in a multi-site study where they were randomized to one of four treatments either placebo, CBT alone, fluoxetine, or combination of fluoxetine plus CBT.

Slide 24 [Image: Depression Response Rates]:

When you looked at the 12 week response rate, you found that the group that did the best was the combination treatment group that used an SSRI with CBT; where they found a 71% response rate. Almost as well was the group that was in treatment with an SSRI alone. In this study, they did not find that CBT differentiated significantly from placebo and this is a really interesting study that flies in the face of what we think about for treatment with depression. I think typically in a pediatric setting, the default response is often to refer to therapy and then watch and wait to see how things go and if symptoms improve on their own, but what this study really suggests, is that for children or in adolescents with at least moderate severity depression, that you will get a faster response rate and a more robust response by combining referral to therapy with initiation of medication.

Slide 25 [Which Medication to Choose?]:

So how do you do that safely and which medication do you choose? I consider three things when choosing a medication; one is obviously evidence for efficacy, 2 is a family history of treatment (so is there a medication that the patient's mom or dad has taken that they've done really well on, or on the other hand that they haven't tolerated, because that can help you guide which meds you should steer clear of and steer towards). Finally, we're really looking at the side effect profile of meds that may help you distinguish one from another and I'll explain what that mean in a second.

Slide 26 [Image: Choosing an SSRI]:

Choosing an SSRI: this slide lists the four most commonly prescribed SSRIs for adolescent depression. Let's just talk about the different flavors of each one of them. Fluoxetine tends to be very activating and is FDA approval for the treatment of depression in children ages 8 years and older. This one is really good to give for your depressed adolescents who's having trouble getting off of the couch, and really needs an energy boost during the day. It has a long half-life so it's also very good for people who aren't good at remembering to take their medicine every single day. Sertraline, or Zoloft, tends to be highly sedating and is best dosed in the evening. It has the best evidence for anxiety of all of them, but I will say that all of the SSRIs are fantastic for anxiety, so you get to kill two birds with one stone when you're treating an adolescent with depression and anxiety when you're using medications. Finally, citalopram and escitalopram have the fewest drug-drug interactions and escitalopram has FDA approval for the treatment of adolescents ages 12 and older with depression.

Slide 27 [Image: Pediatric Dosing for SSRI Medication]:

The next slide talks about appropriate dosing for these various medications. Just to orient you; the second column shows the starting dose for a medication. So you start on that dose for about a week, make sure

that they're getting used to the medication and then you would hold them there for about four to six weeks because that's how long it takes to often see a maximum robust response to medication. In the third and 4th columns are listed the effective doses for treatment of depression, as well as anxiety and you'll notice that the anxiety doses are slightly higher. Max doses are also listed in the final column.

Slide 28 [Image: Side Effects]:

So again, when you're counseling families about side effects of medication, what I like to say is that it usually takes your body a couple of days to get used to the new medication. While you're doing that you may notice a little bit of stomach upset or headache. In about 10% of prepubertal kids and maybe 2% of adolescents you can also see activation- think about it as the diphenhydramine or Benadryl response where people get paradoxically hyper and edgy and may even feel worse and anxiety. So, if you hear of somebody feeling worse on the medication, sometimes what really has happened is that they've become activated. To treat that you would decrease the dose or consider stopping it. Very rarely you can have serotonin syndrome when medication mixes with multiple other serotonergic meds.

Slide 29 [Image: Black Box Warning]:

Many of you may be very familiar with the black box warning on antidepressant medication for adolescents and young adults. What I would say as a bottom line is that our larger studies and meta-analysis have found that six times more teens benefit from treatment with antidepressant medication than are experiencing any type of harm, such as increased suicidal thoughts or behavior. This is something to keep an eye on as you're prescribing medication, and also makes it a great idea to make sure that these teens are also in psychotherapy so that there's somebody who's monitoring them regularly and can let you know if things are getting worse. When you finally find an effective dose of medication, I generally recommend that you stay on it for about 9 to 12 months. Then at that time you can decide whether it makes sense to taper off in the same way that you increase maybe decreasing the dose by half every four to six weeks. The decision to taper off or continue is a very interesting clinical one; some people who experience an episode of depression will never have another episode of depression again and they may not need the medication. And so, they could do okay tapering off. However about 50% of people who experience an episode of depression will have another one in their lifetime, and so remaining on the antidepressant may help with prophylaxis to lessen the severity or decrease the frequency of future episodes.

Slide 30 [How Does Depression Play a Role in The Effect of Stress on Patients & Families Affected by COVID-19?]:

Even as an adult, we've experienced a great deal of stress related to COVID-19, and if you think about it are adolescents and children are much less equipped to be able to deal with this high-level stress. So, it is not surprising that we're seeing increasing rates of both anxiety and depression. If you think about our transitional age youth in college, they've been pulled away from school away from their social environment and for many people have lost the opportunity to have jobs and are returning home to live with their families; which often is not an ideal situation for blossoming young adult. And so that is part of a setup for depression. Adolescents likewise have lost a lot of their ways to manage a lot of their stress: through exercise, through socialization, through participation in a lot of extracurricular activities, and even school. So, dealing with increased amount of stress and not having the reserve and means to cope with them again creates a recipe for increased risk for depression and anxiety. So, this is a particular time when you want to be really thoughtful and pay attention to your adolescence in your practice and consider screening, not just at well visits, but universally, even at sick visits.

Slide 31 [Final Thoughts]:

Adolescent depression is a very common illness affecting about one out of 10 of our adolescents and yet the majority of adolescents with depression remain undiagnosed and untreated.

Slide 32 [Image: Screen for Depression. 3 Step Assessment for Depression, Refer Adolescents with Depression for Cognitive Behavioral Therapy, Consider Medication]:

You can play a huge role in identifying teens at risk for depression by implementing screening in your practice, and for those adolescents who don't have the red flags, who don't have a history of trauma, and have depression with or without anxiety; for them I would recommend referral for cognitive behavioral therapy and consider initiation of medication as we discussed.

Slide 33 [Image: Resources for Pediatricians and Families]:

We've included a number of resources for pediatricians, including a link to the guidelines for adolescent depression in primary care. The two articles that deal with identification, assessment, and treatment.

Slide 34 [Resources]:

We've also included some websites that the families can use and even apps that the patients can use to help them.

Slide 35 [Thank you for Participating in this Pediatric Mental Health Minute Series]:

Thank you so much for participating in this pediatric mental health minute series, if you have any questions please e-mail COVID-19@AAP.org. Take care.

APPENDIX F
LITERATURE REVIEW GRID

Pub. Year; Author's Last Name	Title of Publication	Type of Study	Main Outcomes of Findings	Support for and or Link to Project
Beharry (2022)	Pediatric anxiety and depression in the time of COVID-19	Journal/Expert opinion supported with statistical data	COVID-19 has placed an increased burden on the mental health of children and adolescents. This is especially pertinent to children who have fewer coping skills than adults and are affected significantly with the lack of social groups outside of the home. Pediatricians are being tasked with management of mental health management as prevalence is increasing and suicide attempts are increasing.	Recommends multiple primary care interventions for the management of pediatric depression (and anxiety). Recommendations include: (a) screening all children 12 years and older and offers resources for multiple screening tools, (b) active chart scrubbing for gaps in care—they recommend contacting all patients/families who have not been seen since the start of the COVID-19 pandemic to get an update on mental health symptoms. Lastly, and most pertinent to this project, (c) there is a recommendation for primary clinicians to become more comfortable with prescribing pharmacologic and nonpharmacologic treatment for depression and anxiety and offers options for enhancing their skills. The Pediatric Mental Health Minute Series The REACH Institute
Brent (2021)	1.1 Brief behavioral therapy for pediatric and depression in primary care: A follow-up	Randomized clinical trial (RCT)	There are ethnic disparities in treatment rates and identification of depression in pediatrics with Hispanic youths being least likely to be correctly identified and treated. Brief Behavioral Treatment (BBT) is an intervention that consists of psychoeducation about	El Rio serves a large population of Hispanic youth. Finding (although not conclusive) suggest the importance of maximizing PC role for Hispanic youth patients. Speaks to the benefits of BBT, which is unique as CBT is the gold standard. Sparks interest for future studies specific to Hispanic youth with depression and anxiety.

Pub. Year; Author's Last Name	Title of Publication	Type of Study	Main Outcomes of Findings	Support for and or Link to Project
			depression and anxiety for patients and parents, relaxation techniques to manage somatic symptoms and problem-solving skills for stress management. BBT was delivered individually in 8-12 weekly 45 minutes sessions over a 16 week period by Master's level therapists (who received specific training). The participants that were assigned to BBT had higher treatment response rates compared to others who were referred to BH (67.5% versus 43.1%). The BBT intervention was particularly efficacious in Hispanic youth, although whether this was attributable to the nature of BBT or to the fact that it was delivered in primary care cannot be determined from this study	
Cheung et al. (2018)	Guidelines for adolescent depression in primary care (GLAD-PC): Part II. Treatment and ongoing management	Meta-analysis and clinical guidelines	Three separate literature reviews: 1. Nonspecific psychosocial intervention in pediatric PC including studies regarding integrating behavioral health and collaborative care models 2. Antidepressant treatments 3. Psychotherapy interventions	Speaks to clinical shortage of mental health providers. Offers clinical guidelines for evidence-based care. Link to project: education will be pulled from these guidelines. Part 2 of the guidelines (this one) is especially pertinent to the project because it discusses treatment & ongoing management plans. The first guideline focuses

Pub. Year; Author's Last Name	Title of Publication	Type of Study	Main Outcomes of Findings	Support for and or Link to Project
			Findings: SSRI and CBT are efficacious (and best combined).	on identification, assessment, and initial management.
Farley et al. (2020)	Identification and management of adolescent depression in a large pediatric care network.	Statistical and numerical data	<p>The study examined how well adolescent depression is being identified and managed by pulling data from a large pediatric network using their electronic health record (EHR). The analysis included (a) rates of screening and elevated symptoms, (b) the PCPs initial response to elevated scores, and (c) the types of follow-up care that was received over one year. The study was retrospective data extraction.</p> <p>The data: <u>Patients screened at 16-year well exam: 76.3% (n= 6981)</u> <u>Number of patients with elevated score: 19.2% mild and 6.7% moderate-to-severe</u></p> <p>Over one year, three-fourths of patients with scores in the moderate-to-severe range and 40.0% of patients with scores in the mild range received follow-up care (for example, antidepressant prescriptions).</p>	The study speaks to the vast opportunity that PC offices have in connecting with adolescents experiencing depression. There were gaps in follow-up care that demonstrate the need for greater investment in primary care-based behavioral health services (the purpose of the project).
(Kenny et al., 2021)	All hands on deck: Addressing adolescent	Mixed methods (qualitative/quantitative).	Visit data, demographics and PHQ-9 scores were obtained for 2,107 adolescents from	Supports the need for improved PCP participation in adolescent depression. Showcases primary

Pub. Year; Author's Last Name	Title of Publication	Type of Study	Main Outcomes of Findings	Support for and or Link to Project
	depression in pediatric primary care		<p>age 11-17. Descriptive statistics were conducted, followed by conventional content analysis of EHR.</p> <p><u>Results:</u> 13% had elevated PH-9 scores. Significant improvements to PHQ-9 scores were found with the following interventions:</p> <ul style="list-style-type: none"> - Referral to integrative behavioral health - BHC recommending and checking-in at a follow up visit - Providing psychoeducation about mood <p>Primary care is an ideal setting to address the public health crisis of untreated adolescent depression in the setting of BH shortage.</p>	care as an ideal setting to address untreated adolescent depression. A limitation (when considering this project) is that integrative behavioral health is a system change that is out of the scope of this practice. This research does support the basic concepts of this project: primary care is an active role in the identification and treatment of adolescent depression.
(Melnik, 2020)	Reducing healthcare costs for mental health hospitalizations with evidence-based COPE program for child and adolescent depression and anxiety: A cost analysis.	Quantitative	Displays mental health provider shortage. Shows cost analysis of offering traditional mental health services verses using the Creating Opportunities for Personal Empowerment (COPE) program. The COPE program consists of a 7-session evidence-based cognitive-based program by pediatric and family healthcare providers in the	Justifies maximizing role of primary care provider from 2 angles (improved outcomes, financial incentive). Offers insight into practical QI improvement strategies for population of focus. Displays need for meeting training gaps (justifies project).

Pub. Year; Author's Last Name	Title of Publication	Type of Study	Main Outcomes of Findings	Support for and or Link to Project
			<p>primary care setting. Findings show a cost saving of \$14,262 for every hospitalization that is prevented. COPE utilizes a thinking-feeling-behaving triangle to help combat negative emotions.</p> <p><u>7-session COPE program</u> Day 1: Addressing the connection between thinking, feeling, and behaving Day 2: Developing positive thinking habits Day 3: Building coping/stress reduction skills Day 4: Problem-solving and goal setting Day 5: Learning coping skills through positive thinking and communication skills Day 6: Applying coping skills to stressful situations Day 7: Putting it all together</p> <p>The use of COPE program shows decreased rates of depression, anxiety, anger and destructive behaviors while showing increased rates of self-esteem and school/home functioning. CPT code for delivering sessions: 99214</p>	

Pub. Year; Author's Last Name	Title of Publication	Type of Study	Main Outcomes of Findings	Support for and or Link to Project
(Nierengarten, 2018)	Suicide attempts and ideation among teens are on the rise.	Numerical article	<p>Total suicide incident (ideation & attempt) from 2008-2015= 115,856. Increased 0.66% of adolescents to 1.82 percent from 2008 to 2015. Highest incident in fall and springtime (specifically March & October) with the lowest incidence in July. Recommends identifying risk of suicide by:</p> <ol style="list-style-type: none"> 1. Using PHQ-9 2. Screening for substance abuse 3. Assessing mood and level of stress during visit 4. Inquire on family hx of substance abuse, suicide, depression 5. Ask directly about suicidal ideation or attempt if any of the above are positive 	Offers insight into practical QI improvement strategies for population of focus. Displays need for meeting training gaps (justifies project).
(Secrest et al., 2019)	Improving pediatricians' knowledge and skills in suicide prevention: Opportunities for social work.	Qualitative	Primary care providers are key gatekeepers for detecting suicidal intent but research indicates training gaps. In addition to utilizing screening testing, one recommended method for further training is the utilization of standardized mental health best practice for suicide prevention. Four themes were identified from focus groups as ways to improve suicide prevention:	Offers insight into practical QI improvement strategies for population of focus. Displays need for meeting training gaps (justifies project).

Pub. Year; Author's Last Name	Title of Publication	Type of Study	Main Outcomes of Findings	Support for and or Link to Project
			<ol style="list-style-type: none"> 1. Broken mental health system of care 2. Improving doctor/patient/family communication 3. Alleviating stigma early detection and treatment 	
(Shahidullah et al., 2020)	Assessment and management of depression and suicidality: Pediatric resident perspectives on training and practice.	Qualitative	<p>The large majority of participants (general practice providers) are involved in evaluation and management of depression and suicidality; yet many respondents reported a lack of knowledge and comfort in these roles. Shows knowledge and attitudes about current GLAD-PC guidelines and feasibility.</p> <ul style="list-style-type: none"> - Most (88.5%) felt they had at least average knowledge about screening, were at least somewhat comfortable conducting screening (89.8%), and believed depression screening should be a part of pediatricians' role (98.6%). - All respondents reported they conduct suicidality screening for at least some of their patients with 32.8% conducting screening for more than half of their patients. 	Displays that primary providers desire more knowledge on assessment and management of pediatric depression. Supports the need for educational reinforcement on critical topics (though states more direct patient care as most desirable intervention from providers).

Pub. Year; Author's Last Name	Title of Publication	Type of Study	Main Outcomes of Findings	Support for and or Link to Project
			<p>- Most respondents (94.6%) discuss depression treatment options with patients, although 43% feel they have only little or some knowledge regarding treatment options and only 10.1% report feeling very comfortable in having these discussions</p> <p>- Many (83.5%) respondents reported having at least a basic understanding of cognitive behavioral therapy (CBT), 22.7% for interpersonal therapy (IPT), 26.5% for dialectical behavior therapy (DBT), and 7.5% for acceptance and commitment therapy (ACT)</p> <p>4. The majority (87.3%) of respondents reported having mental health clinicians embedded within their clinic. Specific disciplines were social workers (78.4%), psychologists (40.5%), psychiatrists (30.3%), and licensed counselors (17.7%).</p>	

APPENDIX G

OTHER DOCUMENTS AS APPLICABLE TO THE PROJECT (PATIENT HEALTH
QUESTIONNAIRE-9 – PHQ-9)

PATIENT HEALTH QUESTIONNAIRE-9 (PHQ-9)

Over the last 2 weeks, how often have you been bothered by any of the following problems?
(Use "✓" to indicate your answer)

	Not at all	Several days	More than half the days	Nearly every day
1. Little interest or pleasure in doing things	0	1	2	3
2. Feeling down, depressed, or hopeless	0	1	2	3
3. Trouble falling or staying asleep, or sleeping too much	0	1	2	3
4. Feeling tired or having little energy	0	1	2	3
5. Poor appetite or overeating	0	1	2	3
6. Feeling bad about yourself — or that you are a failure or have let yourself or your family down	0	1	2	3
7. Trouble concentrating on things, such as reading the newspaper or watching television	0	1	2	3
8. Moving or speaking so slowly that other people could have noticed? Or the opposite — being so fidgety or restless that you have been moving around a lot more than usual	0	1	2	3
9. Thoughts that you would be better off dead or of hurting yourself in some way	0	1	2	3

FOR OFFICE CODING 0 + + +
=Total Score:

If you checked off any problems, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?

Not difficult
at all

Somewhat
difficult

Very
difficult

Extremely
difficult

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