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Acknowledging and Addressing Adolescent Depression

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This is to certify that the doctoral study by

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has been found to be complete and satisfactory in all respects,
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Walden University
2020

Abstract

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MS, Walden University, 2015

BS, Eastern Mennonite University, 1996

Project Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Nursing Practice

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Abstract

A family practice was found to inconsistently screen adolescents for depression even with the necessary Patient Health Questionnaire (PHQ) screening tools being readily available in their electronic medical record. The development of a practice guideline that offers a systematic approach to screening using the PHQ2 and the PHQ9 will potentially result in an increased guidance and provider willingness to screen for adolescent depression in the family practice setting. The purpose of this DNP project was to determine if an algorithmic practice guideline would increase provider willingness to assess for adolescent depression and identify any barriers to the use of the algorithm. An in-depth literature review matrix was composed and the Appraisal of Guidelines Research and Evaluation (AGREE II) instrument with GRADE was used to formulate a practice guideline and algorithm that was presented to an expert panel of 7 primary care providers in an active discussion. The Delphi technique was used to get consensus from the expert panel and unanimity was obtained in the first round with the barrier of time identified to the use of the algorithm. Discussion among the panel members offered a solution to the barrier and uncovered additional reasons as to when a depression screen should be completed. Implications for nursing practice would include primary care providers being able to identify depression in the adolescent population, which will reduce or prevent the risk of self-harm and suicidality in adolescents, thereby contributing to a positive social change. Identifying depression in the adolescent population is necessary to improve and prolong quality of life in this age group.

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Dedication

This paper is dedicated to my son LJ who battled with this ugly disease of depression and to my daughter Jasmine who I pray will never have too.

Acknowledgments

Praises to God for keeping me and allowing me to finish this project. I would like to acknowledge and thank my husband Alexander for supporting me and pushing me to complete my DNP. I would also like to thank my mom Juanita and my sister Jenohn who have been with me from the beginning of my professional “journeys”.

Lastly, I would like to acknowledge and thank my mentor Dr. Dianne Swann-Wright who passed away before the completion of this work, but believed in me and saw this vision before I could even imagine it.

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Introduction

Adolescent depression often goes underdiagnosed. Primary care providers have more access and greater opportunities to provide care and identify adolescent depression (Fallucco, Seago, Cuffe, Kraemer, & Wysocki, 2015). Addressing the missed opportunities to assess, treat, and manage adolescent depression in the family practice setting will contribute to positive social change by raising awareness of this specific mental illness and by reducing morbidity and mortality in the adolescent population.

Problem Statement

A hospital owned family care practice that services a client base composed of approximately 20% children and adolescents was identified as inconsistently conducting depression screenings on the adolescent population. The primary care clinic is in a rural area, and three providers see about 300 patients a week. Of these 300 patients, approximately 10 to 15 adolescents were seen weekly as evidenced by a manual count of adolescents scheduled on a given week. The Patient Health Questionnaire (PHQ) 2 and 9 screening tools have become available and have been programmed into the electronic medical record at this facility; however, providers and staff did not use them consistently. The PHQ is a valid universal depression screening tool that can be used in the adult and adolescent population (Allgaier, Krick, Saravo, & Schulte-Korne, 2014). Allgaier et al. (2014) indicated the PHQ has a history of producing good diagnostic accuracy in adolescent depression. The PHQ depression screening is one of the depression screening tools that has been most studied among the adolescent population (Siu & U.S. Preventive

Services Task Force [USPSTF], 2016). Acknowledging and addressing adolescent depression are significant to nursing practice because failure to diagnosis and treat this population leads to negative functional, psychosocial, and clinical outcomes such as substance use, inappropriate behavioral conduct, anxiety, adult depression, self-harm, violence, and suicide (Fallucco et al., 2015; Radovic et al., 2015). The practice-focused question this DNP project examined was:

> PFQ: Would the development of a practice guideline that offered a systematic approach to screening, using the PHQ2 and PHQ9 result in increased guidance and provider willingness to screen adolescents for depression in the family practice setting?

Purpose

The purpose of this DNP project was to determine whether a practice guideline illustrated in an algorithmic form would increase provider willingness to assess and diagnose adolescent depression in a family practice setting. This DNP project also identified potential barriers to the practice guideline's use. I conducted a literature review and summarized my findings in a matrix, which I presented to an expert panel. The literature matrix illustrated how evidence from the literature supported the assessment and identification of depression in the adolescent population using screening tools. The inconsistent use of available screening tools for adolescent depression signified that a gap in practice existed (Siu & USPSTF, 2016). A study conducted by Zenlea, Milliren, Mednick, and Rhodes (2014) provided supporting evidence that this gap exists and is also a practice problem in other primary care settings. Allgaier et al. (2014) indicated that

structured interviews with the use of a valid depression screening in the primary care setting is needed to ensure proper assessment and diagnoses of adolescent depression. Appointment time constraints, along with the lack of familiarity with depression screening tools inhibit the adequate assessment needed to diagnose adolescent depression (Burka, Van Cleve, Shafer, & Barkin, 2013). The lack of knowledge in understanding the importance of depression screenings, understanding when and how to complete a depression screening, and time constraints to complete the screening existed in the family practice clinic on which this DNP project was focused. These barriers presented a gap in practice, which was apparent at the site because adolescents were screened in an inconsistent way for depression at this family practice clinic. There were some adolescents who were screened and some who were not; it was not clear as to which staff members performed the assessment or what criteria resulted in screening. This DNP project can potentially address this gap by increasing assessment of adolescent screenings for depression and providing a practice guideline that will increase consistency. I used feedback from the expert panel after the development of the practice guideline to modify the algorithm to assist with the consistency of the algorithm use.

Nature of the Doctoral Project

The lack of or inconsistent screening of adolescent depression in primary care setting is a relevant practice problem because primary care providers encounter 70% of adolescents each year and failure to screen these adolescents leads to adverse outcomes (Fallucco et al., 2015). Fallucco et al. (2015) noted that 45% of completed suicide victims have had a face-to-face encounter with their primary care provider the month before their

death. Because primary care providers have frequent encounters with adolescents, they are in an excellent position to use screening tools such as the PHQ2 and PHQ9, which yields a high sensitivity and specificity in diagnosing depression (Forman-Hoffman et al., 2016). This face-to-face encounter with adolescents can potentially decrease the morbidity and mortality that results from adolescent depression if assessment tools such as the PHQ2 and PHQ9 are used to diagnose depression.

The Appraisal of Guidelines Research and Evaluation (AGREE) II Model with the Grading of Recommendations Assessment, Development, and Evaluation (GRADE) tool was used to formulate the practice guideline. The AGREE II Research Trust (2017) guides and directs the development of practice guidelines and evaluates or grades the quality of the guideline developed. It is a reliable and valid international tool used to decrease the variability of guideline development ensuring guideline quality. Walden University's Manual for Clinical Practice Guideline Development (CPGD) supports the use of the AGREE II with GRADE document for guideline development in nursing practice. I performed an in-depth literature review and summarize evidence-based findings in a literature matrix. The practice guideline, algorithm, and literature matrix were presented to the expert panel. I obtained evidence of the project outcome from an active discussion with the expert panel. I used the Delphi technique to capture feedback regarding the algorithm and the clinical practice guideline and gained consensus with regard to what barriers existed in implementing the practice guidelines in the clinic. The Delphi technique is a model used to gain reliable consensus from a group of experts through questions presented in multiple rounds until a consensus is achieved (Falzarano

& Pinto, 2013). The Delphi technique is often used in health science to gain feedback for guidelines to practice in clinical realms (Falzarano & Pinto, 2013). I anticipated that the expert panel would find that the practice guideline, algorithm, and literature matrix would be helpful in guiding screenings for adolescent depression. It is my hope that these findings will help close the inconsistent gap in screening and assessing adolescent depression.

Significance

The expert panel were the stakeholders who were significant to this DNP project. They initially included three primary care providers and five nursing staff members who served adolescents in the family practice clinic. One provider departed from the clinic. The potential impact was an anticipated increase in screening of adolescent depression by way of the use of the imbedded PHQ2 and PHQ9 screening tools located in the electronic medical record. Potential contributions of this DNP project to nursing practice included the development of an algorithmic practice guideline supported by evidence. The algorithmic practice guideline offered a systematic approach for the two primary care providers and the five nursing staff members to use when an adolescent presents to the clinic. The algorithmic practice guideline and literature matrix could potentially be transferable to primary care offices clinics that serve adolescent patients that have access to the depression screening tools that are being used inconsistently. Potential implications for positive social change include increased awareness among primary care providers of depression in the adolescent population along with a reduction in morbidity and mortality in the adolescent population. Additional positive social change implications were evident

by the implementation of the practice guideline in family practice and primary care settings where adolescents are served.

Summary

Adolescent depression is a common disease that can be treated if providers appropriately screen patients (Santiago, 2015). Inconsistent use of screening tools with the adolescent patient may allow for unhealthy and unsafe behaviors such as adult depression or suicide (Clark, Jansen, & Cloy, 2012). The inconsistent use of available screening tools created a gap in practice leading to the need for a practice guideline illustrated in algorithmic form and supported by a literature matrix that was presented to an expert panel. The AGREE II Model and GRADE guided the development of the practice guideline. A review of the literature was organized into a literature matrix and given to an expert panel for review (see Appendix A). The Delphi technique was used to capture the feedback from the expert panel. The expert panel who are also the stakeholders involved will potentially implement the practice guideline at the clinical site. Section 2 of this DNP project illustrates a more detailed view of the identified concepts and models. In addition, the relevance and background of this DNP project to nursing practice, along with my role as the DNP student, are discussed in greater detail.

Section 2: Background and Context

Introduction

Adolescent depression is a disease that is relevant to primary care practices. Screening for adolescent depression is needed to prevent the morbidity and mortality that can occur from this disease. Primary care offices often fail to assess adolescents for depression even when screening tools are available, which led to a practice problem. To explore this issue and potentially change the trajectory of this practice, this study was driven by the following practice-focused question: Will the development of a practice guideline in the family practice setting result in an increased guidance and potential willingness of providers to screen for depression in adolescents? In this section I explore the background and content of the concepts and models used to support the development of a clinical practice guideline for screening adolescent depression in the primary care setting. In addition, I show how undiagnosed adolescent depression is relevant to nursing practice and provide background evidence that supports the use of screening tools for adolescent depression. My role as the DNP student is also defined.

Concepts, Models, and Theories

Evidence and supporting data for adolescent depression screening in the primary care setting is widely available. Adolescent depression, barriers to depression screening, and the AGREE II model with GRADE are concepts and models that supported the development of this doctoral project. Each concept and model are explained and supported by evidence. Understanding the concepts of adolescent depression and barriers to screening for depression was necessary to show why depression screening is needed in

the adolescent population. I used the AGREE II Model with GRADE in this DNP project to guide the development of the practice guideline. As previously stated, the AGREE II model is an organizing framework used to evaluate the evidence that provides the theoretical and research underpinning of the adolescent practice guideline algorithm.

Adolescent Depression

The USPSTF recommended that adolescents between the ages of 12 and 18 be routinely screened in primary care clinics when adequate systems are in place to do so (Siu & USPSTF, 2016). Siu and USPSTF (2016) found evidence that suggest screening tools for adolescent depression can accurately identify major depressive disorder. Adequate evidence from this source also exists that adolescents who receive treatment post screening have improved functional scores and improved depression symptoms and severity. This resource also indicated that the identification of depression in adolescents is necessary to prevent functional impairment such as poor family and peer relationships and poor work or school performance. The USPSTF indicated that adolescent depression is strongly related to suicidal thoughts, behaviors, attempts, and suicidal completions. Siu and USPSTF (2016) indicated that the PHQ is an appropriate depression screening instrument for adolescents. The authors concluded this study indicating that the average age of the onset for major depressive disorder in adolescents is between 14 and 15 years of age, and adolescents identified with major depressive disorder prior to this age tend to have worse outcomes.

Zenlea et al. (2014) conducted a cross sectional study to determine how frequently depression screenings were being performed on adolescents who did not have

a history of depression to determine the factors associated with depression screening in family medicine and pediatric practices. The study examined the 2005-2010 National Ambulatory Medical Care and National Hospital Ambulatory Medical Care Surveys. The cross sectioned sample used adolescents 12-18 years of age who had an ambulatory visit to a family or pediatric provider and who did not have a diagnosis of depression. The authors found that depression screenings were uncommonly performed as evidenced by a 0.2% equaling a 95% confidence interval 0.1-0.3. It was also noted that depression screening rarely occurred for Hispanics when compared to non-Hispanics. Adolescents living in the Northeast had more screenings than those living in the West as evidenced by 9.1% or 95% confidence interval 2.2-38.1. It was also noted that depression screenings were fewer with adolescents who had not had a visit in over 12 months compared to 6 months and if they had or were actively receiving stress management or mental health counseling. The authors concluded that adolescent depression screenings were an uncommon practice for office-based adolescent visits.

The question still exists as to why depression is missed or undertreated in adolescents who see their primary care provider. The lack of screening is apparent. Sayal, Yates, Spears, and Stallard (2014) conducted a longitudinal study investigating predictors of provider contacts for adolescents at risk for self-harm and depression. They sampled 3,749 high school adolescents between the ages of 12 and 16 in the United Kingdom. Baseline and 6-month follow up data were compared. The data compared included mood, primary and secondary service contacts, and self-harm. The longitudinal analysis found adolescents who had depression or self-harm behaviors were predictors of medical

service use for various reasons at a general practice or a mental health practice. Among this group, 79% with a probable depression score had seen their primary care provider or a mental health specialist within the preceding year. Sayal et al. (2014) indicated that primary care providers provide opportunities for this disease to be identified.

Libby, Stuart-Shor, and Patankar (2014) found that the PHQ was a valid tool for screening adolescents for depression. They explain that the PHQ has an initial brief symptom questionnaire composed of two questions. If a score of three or more is received on the PHQ2, the PHQ9 questionnaire is then generated which is the diagnostic tool for depression severity and functional impairment. The PHQ2 has an 86.5% sensitivity and the PHQ9 has a 94% sensitivity. The PHQ2 has a specificity of 79.4% and the PHQ9 specificity is 86.5%. Libby et al. (2014) used the PHQ2 and PHQ9 to increase screening and treatment of adolescent depression in a practice improvement project. Their project also focused on increasing provider comfort levels when implementing depression screening by way of having resources immediately available. The resources were further defined as a toolkit that contained educational material on adolescent depression, screening tools, a treatment algorithm, information on cognitive behavioral therapy, medication options, referral options, suicide rating scales, and follow up visit schedules. This study assessed 266 adolescents at a private practice over an 8-week period. The practice was in an area that had an approximate two month wait for mental health services. Prior to the start of the study the 12 primary care providers located at the practice were educated and informed of the project intent. The availability of the PHQ2 and PHQ9 in the electronic medical record was confirmed. When the project began, the

PHQ2 (and PHQ9 if indicated) was given to 12- to 18-year-olds at well child visits. If the PHQ9 resulted in a positive score, then a 30 minute follow up visit was scheduled, and the toolkit was administered at this visit. Additional follow up visits were also scheduled. A pre- and postimplementation survey was given to the providers that measured their knowledge, prior training, and feelings of comfort with the diagnosis. The postsurvey also questioned how many times the toolkit was used. The postsurvey found that a 60% increase in comfort, knowledge, and training existed among the providers along with a 63% increase in their feelings of accountability. The majority of the providers (75%) also indicated that 30 minutes was an appropriate time period for treating an initial adolescent depression visit as the PHQ had already been scored. The project examined quantitative measures of implementation of the PHQ2 and PHQ9. The PHQ2 and PHQ9 screening results showed that 12 adolescents had PHQ2 scores of three or higher, generating the administration of the PHQ9, which resulted in all 12 adolescents having a positive PHQ9 score. The results also indicated that the mean age of these 12 adolescents was 15.2, and 75% of them were females. The project also measured the average wait time that existed after an adolescent received a positive PHQ2 and PHQ9 score and their initial follow up visit which averaged to be 8 days. This 8-day follow-up visit indicated a reduction in the average wait time of 34 days. Providers who are well educated, well prepared, and have the necessary tools and equipment to screen and treat adolescent depression are more apt to identify depressed adolescents.

Barriers to Screening

Many primary care providers lack knowledge as to why depression screenings are needed in the adolescent population, which results in a lack of screening in this population and by default creates a barrier to the screening process (Burka et al., 2013). Identifying barriers to the screening process helps to reveal the potential willingness of providers to complete adolescent depression screenings and it helps to determine reasons why providers are reluctant to screening adolescents for depression (Burka et al., 2013). In 2015, a study conducted by Fallucco et al. showed that the knowledge and confidence of primary care providers increased significantly after being provided with screening, assessment, and treatment training for the adolescent population. The training was provided to 31 primary care providers. Their knowledge and confidence regarding adolescent depression screening, assessment and treatment were evaluated at the beginning of the training, immediately following the training, and 4 to 6 months after the training. Key measurements in the study were obtained through an adolescent reporting questionnaire and a confidence and knowledge survey given to the provider. The adolescent questionnaire anonymously asked adolescents if the provider had assessed and or diagnosed them for depression. If they were diagnosed with depression the questionnaire also asked them if evidence-based treatment options were also discussed with them. The primary outcome findings reported by adolescent patients indicated that providers had increased depression screening at short- and long-term evaluation follow-ups. At the pretraining time, 49% were being screened; posttraining, 68% were screened during short-term follow-ups and 74% during long-term (18-24 months) follow-ups.

There was a 95% confidence interval and the *p*-value was significant at < .0001. The secondary outcome findings represented the primary care provider's knowledge and confidence. A low mean confidence was scored by providers in depression assessment and treatment prior to the training and a moderate to high mean confidence immediately following training and 4 to 6 months posttraining. This study concluded by indicating that educational trainings can improve how often adolescents are screened for depression by a primary care provider, which was associated with increased knowledge and confidence by providers, eliminating barriers.

Van Cleve, Hawkins-Walsh, and Shafer (2013), identified that primary care providers often report inadequate time as a barrier to screening mental health diseases in the adolescent population. They also note that 17%-20% of children under the age of 18 suffer from mental health issues and that half of the mental health issues such as depression are evident by 14 years of age and 75% emerge by 21 years of age. The knowledge deficit and inadequate training of providers regarding adolescent mental health also presents as a barrier.

AGREE II Model with GRADE

The AGREE II Model with GRADE was used in this DNP project to guide and appraise the development of the practice guideline. The AGREE II model is a useful tool that uses a systematic approach in the development and evaluation of a clinical practice guideline (AGREE Research Trust, 2017). The GRADE portion of this model was used to assess the level of evidence implicit in each research study listed in the literature matrix. After the development of the algorithmic practice guideline, the AGREE II model

with GRADE was used to appraise the guideline. According to the AGREE website, the AGREE II model consist of 23 significant questions that are structured under six domains. The six domains include scope and purpose, stakeholder involvement, rigor development, clarity of presentation, applicability, and editorial independence. The 23 key questions or items ask questions specific to each domain. The 23 key items ask questions that rate the answers on a seven-point scale. A rating of one indicates the appraiser strongly disagrees and a rating of seven indicates the appraiser strongly agrees. Each domain is scored, and the scoring speaks to the strength or the weakness of the practice guideline. The AGREE II model and GRADE asks the appraiser to provide an overall assessment of the practice guideline by asking them to judge the guideline quality and forces them to commit to whether they would recommend the guideline for use.

Relevance to Nursing Practice

Depression is a mental health disease that exists in adolescents and poses a major public health problem, especially when it goes unaddressed (Honigfeld, Macary, & Grasso, 2017). Consequences of unidentified depression in adolescents include academic failure, dysfunctional peer and family relationships, poverty, increased behavior risk, substance abuse, injuries, accidents, and suicide (Burka et al., 2013). Escalating depression can ultimately lead to suicide and early recognition by point of contact providers, such as a primary care clinician, can prevent suicide in the adolescent population. Screening and treating depression in adolescents are the initial and most crucial steps in preventing adolescent suicide (Kroning & Kroning, 2016). According to the American Academy of Child and Adolescent Psychiatry (AACAP) website (2017),

the second leading cause of death for 10-24-year olds is suicide. Suicide is a growing problem in this age group and AACAP (2014, 2017) noted that adolescent suicide went from the third leading cause of death in 15-24-year olds in 2014 to the second leading cause of death in 10-24-year olds in 2017. They stated that depression and suicide are both conditions that can be treated and, if recognized and treated, adolescents can return to a healthy developmental path. The prevention of suicidality, suicide thoughts, and dysfunctional behaviors and relationships makes depression screening relevant to primary care nursing practice for the adolescent population. Honigfeld et al. (2017) indicated that 90% of children and adolescents see a primary care provider. Libby et al. (2014) stated that adolescents have an average of one to two visits a year with their primary care provider. The access that adolescents have to primary care providers allows providers to be a key entry point for identifying adolescent depression (Honigfeld et al., 2017). Honigfeld et al. (2017) stated this key entry point opportunity can reduce the barriers associated with adolescents accessing mental health services such as family support and the lack of mental health providers. The shortage of psychiatric and mental health professionals impacts the growing need to address adolescents who have not been diagnosed with depression and to ensure that those who are diagnosed are being treated (VanCleve, Hawkins-Walsh, & Shafer, 2013). VanCleve et al. (2013) suggested that depression screening can easily be incorporated into routine visits as depression screening tools are widely available and accessible to many primary care offices. Primary care providers can help close the gap and meet the growing demand for mental health services adolescents need by screening and providing treatment if needed. The access

primary care providers have to the adolescent is critical to help improve adolescent outcomes for depression, such as suicide. Primary care providers that have access to adolescents over a period of time are also better equipped to recognize variations in adolescent behavior. In addition, primary care providers are also in a better position to develop ongoing and trustful relationships with parents of adolescents which can contribute to increased education and treatment of adolescent depression.

Local Background and Context

Examining adolescent depression is necessary to examine mental health problems that exist in the adolescent population. A family practice clinic was identified as inconsistently screening for depression in the adolescent population even with availability of the PHQ2 and PHQ9 screen tools. The clinic follows a medical home model where patients and family receive most of their healthcare. The purpose of a medical home is to allow patients to receive a decrease fragmentation in care, which enables their healthcare needs to be meet on multiple levels by their primary care provider (Libby et al., 2014). Observation of clinic practice revealed that patients were inconsistently screened for depression especially on non-routine visit even if they had not been seen in the last 12 months. More depression screenings existed on adolescents that had presented for a well-child visit. Some adolescents were identified as having depression and in many cases; they were referred out to local psychiatrist and psychologist. Anecdotal feedback from patients indicated that the wait time for area psychologist and psychologist is between two and four months. Many of the patients at this clinic stated they had been advised to return to the primary care clinic for treatment until an appointment becomes available

with psychiatry or psychology. The concern existed as to those patients who had failed to be screened, as they remained at higher risk for depression and suicidality.

Role of the Doctor of Nursing Practice Student

As a DNP student, I developed an adolescent depression screening practice guideline and algorithm that I presented to an expert panel of seven primary care clinicians. Initially the expert panel consisted of eight primary care clinicians. However, one clinician left the practice after becoming ill. After performing an in-depth literature review, I compiled evidence from the literature on adolescent depression, adolescent screening tools, and barriers to screening in a literature matrix. Once the literature was compiled, the practice guideline with an algorithm was developed that included the screening patterns implicit in the primary care setting that was the subject of this DNP project. The literature matrix was presented to my expert panel with the intent of providing them with evidence as to why adolescents should be screened for depression consistently. An active discussion was offered to the expert panel to elicit their feedback on potential barriers to implementation. I used the Delphi technique to employ consensus for use of the algorithm.

Summary

Evidence from peer-reviewed studies supported the concepts that surrounded the gap in practice including adolescent depression, depression screening tools, and barriers to screening. The AGREE II with GRADE was used to develop the practice guideline and evaluate the supporting literature that supported the practice guideline. The value the guideline will have on nursing practice was explained. Additional information was

supplied on the background and context of the identified practice problem. My role as the DNP student was expounded upon. Section 3 of this proposal reiterated the practice focus question, identified sources of evidence and how they related to this doctoral study, discussed published outcomes and research, and discussed how evidence will be generated for this study. Lastly, a complete analysis and synthesis of the data collection method was illustrated. The project was implemented after the completion of Section 3. Section 4 summarized the findings and any recommendations from the project's findings.

Section 3: Collection and Analysis of Evidence

Introduction

Identifying adolescent depression in the primary care setting is a vital step to improving health outcomes. Adolescent depression is a societal problem that can present overtly or somatically to the primary care setting (Libby et al., 2014). Somatic symptoms are not always recognized by providers. In addition, the challenge of identifying a puberty crisis verses a depressive symptomatology is not always evident (Allgaier, et al., 2014). Failure to identify adolescents who present to the primary care setting who might have depression can result in morbidity and mortality outcomes in this population (Burka et al., 2013). Therefore, screening adolescents for depression is imperative. This section of the paper addresses the practice-focused question that was previously stated. I discuss the sources of evidence that supported the identification of the practice problem. I incorporate a detailed analysis and synthesis of the evidence in this section.

Practice-Focused Questions

A family practice was identified as inconsistently screening adolescents for depression. The scope of the problem was that despite the availability of the PHQ2 and PHQ9 screening tools, the instruments were being used inconsistently with the adolescent population. The PHQ2 and the PHQ9 screening tools were embedded in the electronic medical record at the identified clinic. Failure to screen adolescents for depression created a gap in practice. This gap in practice prompted the practice-focused question:

> PFQ: Will the development of a practice guideline that offers a systematic approach to screening using the PHQ2 and PHQ9 result in an increased guidance

and the potential willingness of providers to screen for adolescent depression in the family practice setting?

The purpose of this DNP project was to create a systematic practice guideline that would direct clinicians at this clinic in screening adolescents who present for well child checks, routine checks, and or acute care visits. Criteria for when to screen adolescents was spelled out in a practice guideline and then placed in an algorithm for the clinicians to use. It was anticipated that the practice guideline illustrated in algorithmic form would increase the assessment and diagnoses of adolescent depression at this primary care practice and potentially guide the practice of other primary care offices that are inconsistently screening adolescents for depression.

Sources of Evidence

The development of the clinical practice guideline for screening adolescent depression emerged from a practice deficit in the lack of screening at a family practice setting. The purpose and the intent of the guideline was to increase screening among adolescents at this practice and to reduce acute and chronic morbidity and mortality in this population. The collected evidence related to the supporting research was essential to the validity of the research. An understanding of the participants, procedures, and protections that contributed and secured the evidence generated for this doctoral project was further examined. The Delphi methodology also represented a source of evidence which was essential to the collection of data in this project.

Published Outcomes and Research

I used a variety of evidence-based databases to collect evidence including CINHL, Medline, PubMed, and ProQuest. Key search terms I used for this doctoral project included *major depressive disorder and adolescents, adolescents and depression, adolescents and depression and screening tools, adolescent and depression and primary care, adolescent and self-harm, teens and depression, young people and depression, depression and screening and primary care providers, adolescents and PHQ depression and primary care,* and *nurse practitioners and adolescent and depression*. Inclusion search criteria included depression, adolescents, 12-18-year olds, and depression screening. Exclusion search criteria included articles prior to 2010, children below the age of 12, and adults 19 and up. Years searched were for articles that were published from 2010 to the present. However, I only used articles published from 2012 to the present year. I considered peer reviewed articles and journals. I reviewed a variety of literature and scholarly journals including *American Family Physician, Academic Pediatrics, Annals of Internal Medicine, Journal of Adolescents, Journal of Pediatrics, Journal of Adolescent Health, Clinical Pediatrics, Journal of Pediatric Health Care, Journal for Nurse Practitioners,* and *Comprehensive Psychiatry*. The literature and supporting scholarly articles used in this project included quantitative studies, qualitative studies, a cross sectional study, systematic reviews, a longitudinal study, and quality improvement projects. Four of the articles illustrated in the literature review focused on recommendations for adolescents 12 to 18 years of age. One focused on adolescents 12 to 16 and one focused on children 6 to 17 years of age. The article by Burka et al. (2013)

was not relevant to the age of adolescents as it focused on addressing the barriers to primary care provider screenings and the impact of education on their practice. Articles by Burka et al. (2013), Libby et al. (2014), and Siu &USPSTF (2016) provided supporting evidence that the PHQ is a common depression screening tool and a valid screening instrument for adolescent depression. Libby et al. (2014) and Zenlea et al. (2014) discussed the impact and the influence patient center medical homes can have on adolescent depression screenings. Scholarly articles by Burka et al. (2013), Fallucco et al. (2015), and Libby et al. (2014) focus on how inadequate education and provider discomfort levels with screening and treating adolescent depression often creates barriers to adolescents receiving care. All but one article in the literature review focused on the screening or treatment practices of primary care providers and/or adolescent screening being performed at well visits. Sayal et al. (2014) was the one article that was a community-based study that evaluated high school students with self-harm or depression in efforts to determine their encounters with a primary care provider. Significantly, all the articles presented in this DNP project show supporting evidence that failure to screen, assess, or treat adolescents for depression can lead to an adverse events such as self-harm, recurrent depression, and suicide.

Evidence Generated for the Doctoral Project

Evidence was a crucial component of this doctoral project and was needed to support and identify a potential solution to the gap in practice of failing to screen for adolescent depression. Evidence was collected from the participants who were identified as the expert panel through an active discussion. The procedures and instruments that

were used to collect the supporting evidence were identified and explained. Ethical protection was acknowledged to guard the anonymity of the participants.

Participants. An expert panel of two primary care practitioners and five nursing staff members who serve adolescent patients in the primary care clinic were the participants who contributed to the findings and evidence in the DNP project. Originally the participants consisted of eight people, but one was removed due to the departure of the participant from the primary care clinic. These individuals were chosen as they were the ones who had direct contact with adolescent patients and were the ones who were inconsistently using the depression screening tool. In addition, they were the ones who had the most influence on whether the depression screening was generated.

Procedures. To decrease the gap in practice and increase screening at the identified family practice, a clinical practice guideline was completed and illustrated in an algorithm format. The practice guideline used the valid and reliable AGREE II with GRADE tool to formulate the guideline and evaluate the evidence in the literature review that supports the practice of depression screening. A literature matrix with evidence-based studies was composed. The matrix contained compelling information to support the evidence for screening adolescents for depression. I presented the practice guideline in algorithmic form and the literature matrix to the expert panel. An active discussion was initiated to elicit feedback regarding the practice guideline and barriers that presented to its implementation. After presenting the practice guideline, I anticipated barriers expressed from the expert panel to the use of the practice guideline and algorithm. As previously stated, I engaged in an active discussion and provided additional evidence

needed in how to handle the screening process. I used the Delphi technique to gain consensus on the use of the algorithm.

Protections. I gave a nonjudgmental overview of the practice focused problem and the purpose of the clinical practice guideline to the expert panel to elicit a working relationship and open communication. I presented Walden University's disclosure form for anonymous questionnaires to the expert panel. I used the disclosure form to reiterate their voluntary participation, reassure their anonymity, and prompt honest responses regarding the use of the algorithm and barriers that may prevent them from using the tool. The anonymity of each participant was highly regarded, as it was noted that otherwise, the participants may not want to share or be forthcoming. No incentives or monetary contributions were given to the expert panel for their opinions. There was no funding body for this project. The expert panel had the right to withdraw their opinion or their discussion responses. They were reassured that the information they provided would not intentionally have a negative bearing on their profession. Walden University's Institutional Review Board (IRB) was the overseeing body for the protection of the expert panel to ensure that this DNP project would not cause harm to participants. There were no documents for the participants to complete. The algorithm and literature matrix remained in my possession throughout the completion of the project. These documents were made available to the expert panel during the active discussion rounds.

Analysis and Synthesis

The Delphi technique was a method I used to organize the feedback from the expert panel and seek consensus on the full implementation of the practice guideline at

the site. The Delphi technique is a method of data collection that is used to gather opinions from a group with the goal of obtaining consensus from the group (Jacob, Duffield, & Jacob, 2017). Falzarano and Zipp (2013) indicated that the Delphi technique seeks to control feedback through a series of questions that have been posed to an expert panel in their area of knowledge. The experts responded through rounds of questions until they reach a predetermined percentage of agreement, which is usually 80%. A score of 80% or higher indicates reliable consensus from the participating experts. Feedback from the rounds was used to address potential barriers that may exist to the practice guideline and algorithm use. I attempted to achieve consensus from the participants regarding using the depression screening tool and algorithm consistently. The Delphi technique was used to stimulate debate and promote communication to potentially close the gap of inconsistent screening of adolescents for depression at this family practice (see Falzarano & Zipp, 2013).

Summary

Adolescents need to be screened for depression even if they do not present with a depressed mood. Routine visits, sick visits, and well child visits are all appropriate times to screen adolescents. Failure to screen adolescents can lead to negative consequences including death. Sources of evidence to support the clinical guideline development have been documented, compared, and synthesized. Evidence from participants, project procedures, and protections were required to support the validity of this doctoral project. I used the Delphi technique to acquire expert panel consensus in the use of the practice guideline and uncover barriers to screening adolescents for depression.

Section 4: Findings and Recommendations

Introduction

Adolescent depression is a disease that strikes many teens between the ages of 12 and 18. The encounters that primary care providers have with adolescents can help in identifying adolescents with depression, which could reduce the number of adverse events associated with the disease. A primary care clinic was identified as inconsistently using available screening tools such as the PHQ 2 and PHQ 9 to screen adolescents for depression, demonstrating a gap in practice. After this gap was identified, I developed a practice focus question to help alleviate this practice problem and improve the number of adolescents being screened for depression. The practice focus question asked:

> PFQ: Will the development of a practice guideline that offers a systematic approach to screening using the PHQ2 and PHQ9 result in increased guidance and provider willingness to screen adolescents for depression in the family practice setting?

The practice focus question supported the development and purpose of this DNP project. The purpose of this DNP project was to determine whether a practice guideline illustrated in an algorithmic form would increase the assessment and diagnosing of adolescent depression in a family practice setting. The intent of the guideline was to increase screening among adolescents and to reduce acute and chronic morbidity and mortality that result from undiagnosed depression in adolescents. Although this DNP project specifically identified one primary care clinic, it is necessary to acknowledge that this practice gap exists in a number of primary care clinics that serve adolescents. Zenlea et

al. (2014) indicated that screening for depression in the primary care setting is uncommon with the adolescent population. I collected the sources of research and evidence to support this project from a variety of evidence-based databases such as CINHL, Medline, Pub Med, and ProQuest. From these database sources, I chose peer-reviewed articles for the literature review matrix. The articles included the search criteria for depression, adolescents, 12-18-year-olds, and depression screenings. I chose seven articles for the literature review matrix. All seven articles used to support the development of the clinical practice guideline showed that adverse consequences could occur in the adolescent population if depression failed to be identified.

Findings and Implications

The developed practice guideline for this DNP project initially indicated: Adolescents between 12 and 18 years of age who present to a primary care clinic should be screened for depression using a depression screening tool such as the PHQ2 and PHQ9 if they present with (a) verbalizing depression, (b) repetitive somatic complaints, (c) behavior problems, (d) a recent traumatic event, (e) a depressed mood, (f) a parent's verbalization of depression, or (g) if they have not had a depression screening in the last 6 months. The purpose and intent of the guideline were to provide guidance to primary care providers as to when depression screens should be completed with the adolescent population, which in turn could reduce or prevent the morbidity and mortality associated with adolescent depression. This practice guideline was developed into an algorithm form.

The literature review matrix and algorithmic practice guideline were presented to an expert panel of seven primary care providers who participated in an active discussion regarding the potential barriers to the use of the algorithmic practice guideline. Seven articles were listed on the literature review matrix (see Appendix A), and all seven of the articles were reviewed with the primary care providers. All the articles showed some significance as to why adolescents needed to be screened for depression in primary care practices. The articles were appraised using the GRADE model by rating the quality of evidence and then given an overall rating to the strength of the recommendation. The Institute for Clinical Systems Improvement (ICSI, 2018) provided guidance on how to use GRADE to evaluate the articles listed in the literature review matrix. The level of evidence for three of the seven articles showed the quality of the evidence to be high. While the other four articles demonstrated a moderate quality of evidence. The article by Siu and the USPSTF (2016) showed the quality of the evidence to be high as this was a systematic review that clearly demonstrated how the benefits for depression screening outweighed the risk. This article provided the strongest evidence yielding consistent, applicable results (ICSI, 2018). The other two articles by Burka et al. 2013 and Libby et al. 2014 produced high-quality evidence showing the benefits of depression screening outweighed the harms, and these studies soundly represented the target population. According to ICSI (2018), a rating of high for the quality of evidence shows that additional research is improbable "to change our confidence in the estimate of effect" (p. 2). Moderate quality of evidence would indicate the benefits of the evidence "outweigh the risk but recognizes that the evidence has limitations" that could further influence

future or other outcomes. The article by Zenlea et al. (2014) showed the quality of the evidence to be moderate due to it being a case-control study. This study had some limitations due to it also being a cross-sectional design. This cross-sectional design "limits the ability to make casual references" (p. 189). Limitations of this study included some racial disparities among adolescent depression screenings. However, this study concluded that there needed to be an overall increase in screening adolescents for depression resulting in the benefit of screenings outweighing the harm. The remaining three studies by Fallucco et al. (2015), Honigfeld et al. (2017), and Sayal et al. (2014) also showed moderate quality of evidence for depression screenings to be conducted with adolescents. However, limitations, study design (cohort), and case-control studies may contribute to potential biases and further research may have some bearing on changes to these articles (ICSI, 2018). None of the articles showed low quality of evidence. Low quality of evidence would have indicated that further research would very likely change the outcomes (ICIS, 2018). Based on the overall quality of the evidence for all of the articles being moderate to high, the recommendation for depression screenings in the primary care setting is strong, indicating that adherence to the recommendation to screen adolescents in the primary care setting will contribute to a healthier adolescent population and mitigate undesirable effects of not screening including patient harm and suicidality. The evidence demonstrates a strong recommendation for adolescent depression screenings with this recommended guideline applying to the majority of adolescent patients. After I presented the literature review matrix to the expert panel, I gave them the algorithm and reviewed it with the panel. It was the goal to obtain the consensus of the

expert panel to using the algorithmic practice guideline by way of the Delphi technique. For this project, the consensus was defined as 80% or more of the providers agreeing to the use of the algorithm. The implementation of the project only required one round of the Delphi technique. The active discussion gave each provider the opportunity to openly acknowledge if they agreed with the use of the algorithm, if the algorithm gave clear guidance, if barriers to the algorithms use could be identified, and an opportunity to identify any recommendations to the algorithmic guideline. The findings suggested that all seven of the providers agreed with the use of the algorithm. They all agreed that the algorithm was easy to use and provided clear guidance in determining when adolescents needed to be screened. They also identified additional situations in which adolescent depression screening should be performed. These identified situations included bullying, excessive sleeping, family stressors such as the birth of a child in the family, and risk-taking behaviors such as alcohol and drug use. Only one barrier was identified in implementing the algorithm. It was suggested by a member of the expert panel. This barrier was associated with time and the number of other preventive screens that the clinic was required to implement, such as abuse screenings, BMI screenings, fall screenings, and alcohol screenings. After further active discussion during the same round, another provider suggested the screening would be doable as the screenings for adolescents were far less than the screenings and workup that would be required for an adult patient. They noted that fall screenings and alcohol screenings were not requirements for adolescent patients. It was also suggested that the screening tool could be printed and presented to the patient at check-in or while they were waiting to be seen,

which could reduce the time factor needed to screen. Consensus was then obtained by all members of the expert panel.

Unanticipated Outcome

An unanticipated outcome included the departure of one primary care provider from the clinic, only leaving seven providers to give feedback. Because all seven of the providers agreed in the first round of the Delphi Technique, the missing provider would not have influenced the outcome or changed the course of the project, as 80% of the providers would need to agree to move forward with analyzing the project's findings. However, the missing provider could have potentially identified additional barriers to the implementation of the project. Forman-Hoffman et al. (2016) noted in their study that providers also indicated that lack of comfort with and education in adolescent depression, along with the lack of available mental health providers to treat adolescent depression, presented barriers to implementing depression screenings.

Implication From Findings

Because fewer than one-half of adolescents receive treatment for depression due to a lack of screening (Forman-Hoffman et al., 2016), implications of this project are that it will potentially bring attention to the issue with primary care providers who will recognize depression, initiate treatment if needed, or refer, which will contribute to more adolescents being diagnosed and treated. In turn, this will reduce the number of adolescents with attempted or successful suicides, which leads to positive benefits for families, communities, schools, and healthcare organizations (Burka et al., 2013). Implementing the algorithm and adolescent depression screening will allow for the

collaboration of care between providers, parents, schools, and community organizations, resulting in better and more effective treatment for adolescent depression. According to the Community Preventive Task Force (2014), the collaboration of healthcare providers is necessary for reducing symptoms of depression, treatment adherence, and remission and recovery. Collaboration and expert opinion during the active discussion was needed to rate the overall guideline use with the anticipated intent of the guideline to be adopted into practice to reduce the comorbidities of adolescent depression.

AGREE II. The AGREE II instrument was used to appraise the quality of the guideline. As previously stated, domain one addresses the scope and purpose of the guideline, domain two addresses the stakeholder involvement, domain three addresses the rigor of the guideline development, domain four addresses the clarity of presentation, domain five address the applicability of the guideline, and domain six addresses the editorial independence of the guideline. The six domains of AGREE II were scored and yielded the results shown in Table 1.

Table 1

AGREE II Domain Scores

	Low (=39% or <)	Moderate (40-69%)	High(70>)
Domain 1			100%
Domain 2			95%
Domain 3			96%
Domaine 4			100%
Domaine 5			87.5%
Domaine 6			75%

Based on the domain scores, the quality of the guidelines was rated as high, moderate, or low. According to the AGREE website (2017), the Agree II instrument does not have a

clear interpretation of thresholds in how a guideline should differentiated as high, moderate, or low. In addition, it does not require all domains to be used to rate the quality of the guideline. However, the AGREE website does provide guidance and recommends creating a domain threshold across all domain scores. This was the approach used to rate the quality of the recommended guideline. If a domain scored 70% or higher, it would fall into the high-quality category. Forty percent to 69% indicated moderate quality, and below 39% would indicate a low-quality guideline. Each domain score was above 70%, indicating a high-quality guideline. Some domains were appraised by the expert panel, and some domains used a single appraiser. However, the ratings were congruent and simultaneously occurred during the active discussion. In addition, the overall judgment of the quality of the guideline was above 70%, leading to the overall recommendation by the expert panel and end stakeholders to use the guideline. Based on the guideline quality and offered recommendations, the final guideline indicated that adolescents between 12 and 18 years of age who present to a primary care clinic should be screened for depression using a depression screening tool such as the PHQ2 and PHQ9 if they present (a) verbalizing depression, (b) with repetitive somatic complaints, (c) with behavior problems or risk-taking behaviors, (d) with a recent traumatic event, (e) with a depressed mood, (f) with a parent's verbalization of depression, (g) as a victim of bullying, (h) as having recent family stressors, (i) with excessive sleeping, or (j) if they have not had a depression screening in the last 6 months.

Implications for Positive Social Change

The goal of this DNP project was to bring about social change that will potentially influence the practice of providers that give care to adolescents and improve the health of depressed adolescents that receive care from primary care providers. Social change will occur when providers at the identified clinic and providers at other primary care clinics use screening tools to appropriately screen for adolescent depression. Better health outcomes result when adolescents are screened for depression.

Recommendations

The practice guideline and algorithm were changed during the active discussion with the expert panel who were also the end-users of the algorithm (see Appendix C) with their recommendations. After the active discussion, further research and additional evidence were collected that supported the recommendations offered by the providers, and these recommendations were officially added to the algorithm. Proposed solutions to eliminating the gap in practice for missed adolescent depression screening includes using the proposed algorithm with revisions to identify those that need to be screened by primary care providers. Thompson et al. (2019) noted that most primary care providers screened for depression only when visible signs were apparent missing opportunities to capture depressed patients contributing to the gap in practice. Providers have also been found to have individual approaches to screening for depression that result in racial dispraises such as white individuals being screened more often than Black or African Americans. The proposed algorithm (see Appendix C) will allow for adolescents with visible and invisible signs to be screened. It will also remove the possible race differences

in screening for depression. In addition, the gap in practice can also be eliminated by using a simple tool such as the PHQ2 and PHQ9. The PHQ2 and PHQ9 screening tool will help providers quickly assess adolescents that may potentially be depressed. The PHQ2 and PHQ9 are quick, reliable, and inexpensive depression screening tools that can effectively identify adolescent depression and guide providers to the initial steps in treating these adolescents, preventing disease progression, suicide attempts, and deaths. In paper format, the PHQ2 and PHQ9 is an inexpensive screening tool that is no cost to many providers. It is also a screening tool that can be easily implemented in most electronic health records. Based on this project's findings, it will also be necessary to educate providers on the fact the PHQ2 and PHQ9 are quick and reliable tools to counteract the notion of not having the time to complete the screening. Although studies show that when the PHQ2 and PHQ9 are embedded in the electronic medical record, more screenings are completed (Thompson et al., 2019). Another recommendation to counteract the proposed time barrier includes having a hard copy of the screening tool available to present to the patient to complete at check-in or while they are waiting to be seen. This will allow the providers to quickly calculate the findings and potentially eliminate missed opportunities to capture adolescent depression due to time.

Strengths and Limitations of the Project

It is necessary to identify the strengths and limitations of the project to illustrate conducive settings that will support the screening of adolescent depression in the primary care setting.

Strengths

The strengths of the project included the identification of solutions to the barrier of time that was presented by one of the expert panel members. An active discussion between the expert panel members allowed for them to be engaged by coming up with additional recommendations for when an adolescent should be screened. While the intention of the project was to identify barriers to adolescent screening, the project motivated the expert panel to identify other reasons adolescents should be screened for depression. A study by Harder et al. (2019) showed that adolescent depression improvement programs that allowed for active versus passive learning lead to practice changes that most often lead to improvements in screening and treating adolescent depression. The consensus of the expert panel to use the algorithm was achieved.

Limitations

Small sample size was one limitation of the project. A larger sample size may have given more ideas of barriers that may present. This project did not address how to identify or assess for depression in patients who refused to take the PHQ2 and or PHQ9. Further research is needed to identify how to assess this gap that may present in the adolescent population and exploring this gap would be a future recommendation for this or similar projects. Patients may decline or refuse to take the PHQ2 and or PHQ9, and they may fail to answer the questions honestly due to a lack of provider trust or stigma issues (Thompson, et al., 2019). Future projects regarding this topic should also address or acknowledge if the screening is conducted in the absence of the parental figure as this may also influence if a screening is conducted. This project mainly focused on the PHQ

depression-screening tool and did not consider or research the impact of any other depression screenings in the adolescent population. In addition, this project did not capture the impact the algorithm would have at this facility if it was implemented, leading to another limitation. Future recommendations for addressing this topic would include the implementation of the project to see if the end-users used the algorithm as a guide to screen and to see if and to what extent that screenings increased.

Summary

Adolescent depression is a disease that can debilitate and kill adolescents. Finding from this project found that time is a barrier to screening for adolescent depression. A solution of having a format that allows an individual to complete the PHQ2 and PHQ9 while they wait was one solution to this barrier. Providers that screen for adolescent depression can help close the gap and positively influence social change for adolescents. Allowing patients to have access to complete the PHQ2 and PHQ9 while they wait will help reduce the time barrier for some providers. The expert panel suggested a solution to the barrier and gave additional suggestions on when adolescents should be screened for depression, which was a strength of this project. The expert panel did show consensus and agreement to use the algorithm practice guideline. Limitations of the project included small sample size, and it did not look at how to address patients that refuse to take the PHQ2 and PHQ9. In section five of this paper, I will discuss the plan to disseminate the findings of the project to the identified family practice, along with other family practices and nursing professionals. In addition, section five will also provide a self-analysis.

Section 5: Dissemination Plan

Considering the detrimental impact of adolescent depression, disseminating this project's evidence is necessary to ensure that adolescents are screened for depression in the primary care setting. A follow-up focus discussion with the expert panel is the current plan to disseminate this project's findings at the identified family practice. The algorithm will be offered as a tool for the family practice to implement into their screening protocol. Other family practices and primary care providers would also be appropriate targets to educate about this project's findings. Creating posters at medical and nursing conferences is an ideal venue to reach other primary care providers and to disseminate this project's outcomes. It is necessary to share these findings, as gaps in practice are present in the primary care setting for adolescent depression screens. Primary care providers are in an excellent position to screen adolescents for depression due to the access they have to adolescents for various reasons. Their access allows an opportunity to improve mental health in adolescents and contribute to positive social change in the nursing profession and in the adolescent community. The clinical practice guideline algorithm will help guide provider practice. This project is relevant to the nursing profession and primary care facilities to improve how providers practice, which will improve morbidity and mortality in the adolescent population.

Analysis of Self

In analyzing my role, I found that this project's experience has increased my knowledge as a practitioner and contributed to a change in my practice regarding adolescents. From a scholarly standpoint, this project has shown me the importance of

my contribution to my profession and the impact I can have on behavior transformation. In addition, taking on the role of a project manager has increased my leadership skills. I am equipped and more confident to handle issues in the practice setting when a gap in practice exists. Completing this project has allowed me to become a social advocate for reducing depression in the adolescent population. This project has also promoted the desire to increase my knowledge and education as a provider in mental health for adolescents creating a long-term goal to obtain a psychiatric mental health certification. It is my hope to further improve provider behaviors and attitudes as they relate to mental health issues in the primary care setting. The completion of this project required me to research the additional suggestions made by the expert panel and then revise the algorithm practice guideline adding the recommendations given by the expert panel. Challenges in completing this project included the lack of knowledge and frustration associated with overseeing a project that may affect peer relationships when cultural change is needed. Solutions to this challenge included having supporting evidence-based practice journals, articles, and practice guidelines that supported depression screens in the adolescent population. Insights gained on this scholarly journey included how to be an advocate of change for a vulnerable population. I feel that my project can influence how my profession cares for the adolescent population and contribute to a healthier social community long-term.

Summary

Adolescent depression is a cruel disease that can affect adolescents well into their adult life and, in some cases limit, terminate life prematurely for adolescents. This

doctoral project identified that a gap in practice exists in screening for adolescent depression in a primary care setting. Because primary care providers typically encounter adolescents for various reasons, primary care providers play a key role in closing this gap. In addition, they have an obligation to screen adolescents for depression with the hopes of preventing, identifying, or treating depression in this population, promoting positive social change. While barriers of visit times may exist, multiple screening tools such as the algorithm created in this project and the PHQ2 and the PHQ9 are available to help providers know when to screen and how to identify depression. Acknowledging and addressing adolescent depression in the primary care setting is a necessary practice that can answer an unidentified cry for help, provide treatment or referrals for adolescents suffering from depression, and save lives.

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Appendix A: Literature Review Matrix

Literature Review Matrix for Screening in the Adolescent Population

Author/ Date	Theoretical/ Conceptual Framework	Research Question(s)/ Hypotheses	Methodology	Analysis & Results	Conclusions	Implica-tions for future research	Implica-tions for practice	GRADE Evalu-ation
Burka, S. D., Van Cleve, S. N., Shafer, S., & Barkin, J., L. (2013). Integration of Pediatric mental Health Care: An evidence-based workshop for primary care providers. *Journal of Pediatric Health Care*, *28*(1), 23-34. doi: 10.1016/j.pedhc.2012.10.006	Quantitative Research Design (Pre and Posttest Design)	The lack of Primary care provider (PCP) training is a contributing barrier to treating mental health disorders in pediatric patients. Will an intensive workshop improve PCP's knowledge and comfort level in providing care to children and adolescents with a mental health disability?	In this study, 30 PCP's which included nurse practitioners, registered nurses, physician assistances, and physicians were given a pre and posttest design. The pre and post-test design was conducted before and after a two day intensive workshop. The workshop focused on the assessment, diagnosis, and treatment of children with depression, anxiety, and attention-deficit disorder. The multiple choice questions on the pre and post design tested provider knowledge and comfort with mental health disorders.	Mean knowledge before the workshop was 9.19 and post the workshop was 12.23 ($p < .0001$). The comfort measure score was 24.6 before the workshop and increased to 44.14 post the workshop with a p-value <0.0001.	Providing intensive workshops on mental health disorders to providers that serve the pediatric population is an effective way at increasing comfort levels and knowledge among these providers which in turn decreases barriers in assessing, diagnosing, and treating mental health disorders such as depression, anxiety, and ADD in pediatric patients.	Future research is needed to determine if intensive workshops are effective with other mental disorders that present in the pediatric population.	Educating pediatric primary care providers can improve knowledge and comfort in assessing and treating mental health disorders youth may experience and eliminate other barriers to these children being screened, assessed, and treated such as geographic unavailability of mental health professionals.	Benefits of depression screening outweigh the risk. GRADE – Quality of Evidence: High Strength of Recommendations: Strong
Fallucco, E. M., Seago, R. D., Cuffe, S. P.,	Quantitative Research Design (Pre and Posttest Design)	Only 50% of adolescent depression cases are recognized	31 primary care providers had a one hour training	Screening of adolescent depression	Primary care providers who were educated and trained on	Additional research is needed to determine	Educating primary care clinicians in how to	Adolescents were randomly selected but the

Kraemer, D. F., & Wysocki, T. (2015). Primary care provider training in screening, assessment, and treatment of adolescent depression. *Academic Pediatrics, 15*(3), 326-332. doi:10.1016/j.acap.2014.12.004		or identified leading to adverse outcomes including suicide in the adolescent population. Therefore the question presents does increase screening lead to the recognition of adolescent depression?	program on screening, assessing and treating adolescent depression. They also completed an additional hour of training practicing these skills. Adolescents completed a pre-post evaluation on primary care providers regarding their training. Self-reported confidence screening and an objective knowledge test were completed by the trained providers prior to the training, immediately post the training and then in 4 to 6 months after the training.	increased from a 49% pre-training rate to 68% in 2 to 8 months and then to 74% 18 to 24 months post training. Adolescent evaluation of the primary care providers also showed significant improvement of providers screening practices after the training.	how to screen, assess, and treat, adolescent depression had increased compliance in screening for adolescent depression.	if improved screening results in improved identification and treatment of adolescent depression.	screen, assess, and treat adolescent depression will improve provider screening compliance.	primary care providers were not. Adolescents did have a comparison group. Study limitations GRADE- Quality of the Evidence: Moderate Strength of recommendation: Strong
Honigfeld, L., Macary, S. J., & Grasso, D. J. (2017). A clinical care algorithmic Toolkit for promoting screening and next-level assessment of pediatric depression and anxiety in primary care. *Journal of Pediatric Health Care, 31*(3), e15-e23. doi: 10.1016/j.p	Quality improvement project- Task Shifting Model	Screening tools (especially computerized toolkits) can provide task shifting of mental health care to primary care providers and better equip them to identify mental health conditions and improve the care they provided to youth for mental health diseases such as depression or anxiety during well	This study evaluated 2,178 children from ages 6 to 17 at well child visits. 16 primary care providers were divided into two groups of 8 and one group performed paper toolkit screening (cohort group 1) and another (cohort 2) performed computerized toolkit screenings. The toolkits contained	55% or 1,208 children out of the 2,178 children had care that was guided by either the paper or the computerized toolkit. Practices with computer based prompts had a higher screening rate. 60% of the completed PSC-17	Both paper and computer screenings captured family history of mental health. The higher screening rate in addition to the higher next-level screenings in the providers that used the computerized toolkit indicates electronic prompts for mental health screenings embedded in	The universal incorporation of mental health screenings into the electronic medical records of primary care providers along with the incorporation of a referral process and relationship with mental health providers for next-	This study provides feasibility that mental health services for children and adolescents can take place in primary care offices shifting mental health care screenings to primary care providers which can eliminate barriers to	Cohort – Study GRADE – Quality of the Evidence: Moderate Strength of recommendation: Strong

edhc.2017.01.008		visits. The inadequate availability of screening tools and provider's knowledge deficit of screening tools creates a barrier to identification of mental disorders in youth.	screening (The Pediatric Symptoms Checklist) and assessment (Patient Health Questionnaire [PHQ9] for depression and the Self-Report for Childhood Anxiety Related Disorders [SCARED]) forms and a framework for treatment and monitoring. A family and child mental health screening form was also included.	screenings were completed by practices that used the computer based toolkit and there was a statistically significant difference between the computer base toolkit use verses the paper toolkit use with statistical findings being X2=10.46, p=.001. Primary care providers did express concerns regarding time constraints with mental health screening during well visits. However, the streamlining of assessment tools that were simple and short such as the PHQ9 and the SCARED was noted to simplify the process.	the electronic medical record may help guide providers and ensure mental health screenings are completed for children and adolescents.	level evaluations needs further review.	children receiving mental health services or care.	

Libby, J. M., Stuart-Shor, E., & Patankar, A. (2014). The implementation of a clinical toolkit and adolescent depression screening program in primary care. *Clinical Pediatrics, 53*(14), 1336-1344. doi: 10.1177/0009922814543945	Quantitative and Qualitative	Project aim and potential improvements were to 1. Increase identification of adolescent depression by way of the PHQ2 and PHQ9 implementation into the medical record. 2. Decrease the time between identification and treatment. The goal was for treatment to be rendered within two weeks after identification. 3. Increase primary care comfort levels and accountability in screening and treating adolescent depression. 4. Have adolescent screening to take place at annual wellness visits and on acute visits of somatic complaints. 5. Focused on treatment in the primary care setting could be accomplished by way of a toolkit that contained information on adolescent depression, treatment algorithm, screening	Project development and project evaluation used the Logic Model. Project Improvement used the IHI improvement model with the Plan-Do-Study-Act (PDSA) cycle. Evaluation methods captured measures of quantitative and qualitative measures. The PHQ2 and 9 were implemented into the medical record. 12 providers at the practice were educated on the project intent and educated on adolescent depression along with the use of the PHQ2 and 9. A second educational session was held with 4 of the providers who also volunteered to be treatment providers. They were educated on the toolkit. A pre and post survey was given to providers to assess their knowledge about depression, prior training about depression,	Screening results indicated that 266 adolescents at a private practice were screened over an 8 week period using the PHQ2 after its implementation into the medical record. The practice was located in an area that had an approximate wait time of 2 months for mental health services. Of the 266 adolescents 12 scored a 3 or higher on the PHQ2 resulting in all of them being administered the PHQ9. All 12 of the adolescents received positive PHQ9 scores. 8 days was the mean score between identification and treatment. Survey Results	When tools and equipment (education and screening instruments) are provided to primary care providers, the comfort level of providers are improved enhancing accountability in screening and treating adolescent depression. In turn, this allows adolescent depression to be recognized earlier decreasing long-term catastrophes and consequences of the disease such as suicide or recurrent adult depression.	The long-term impact of providers screening for depression and this quality improvement project needs further review as this was only a two month study. The long-term impact on providers will need future research.	PCP offices that use the medical home model should be equipped to handle adolescent depression as they will potentially encounter more adolescents. PCP's need to be comfortable with screening and treating adolescent depression. Adolescent depression can be identified in routine screenings by primary care providers.	Target population represented. Benefits of harm outweigh the risk GRADE Quality of Evidence: High Strength of recommendation: Strong

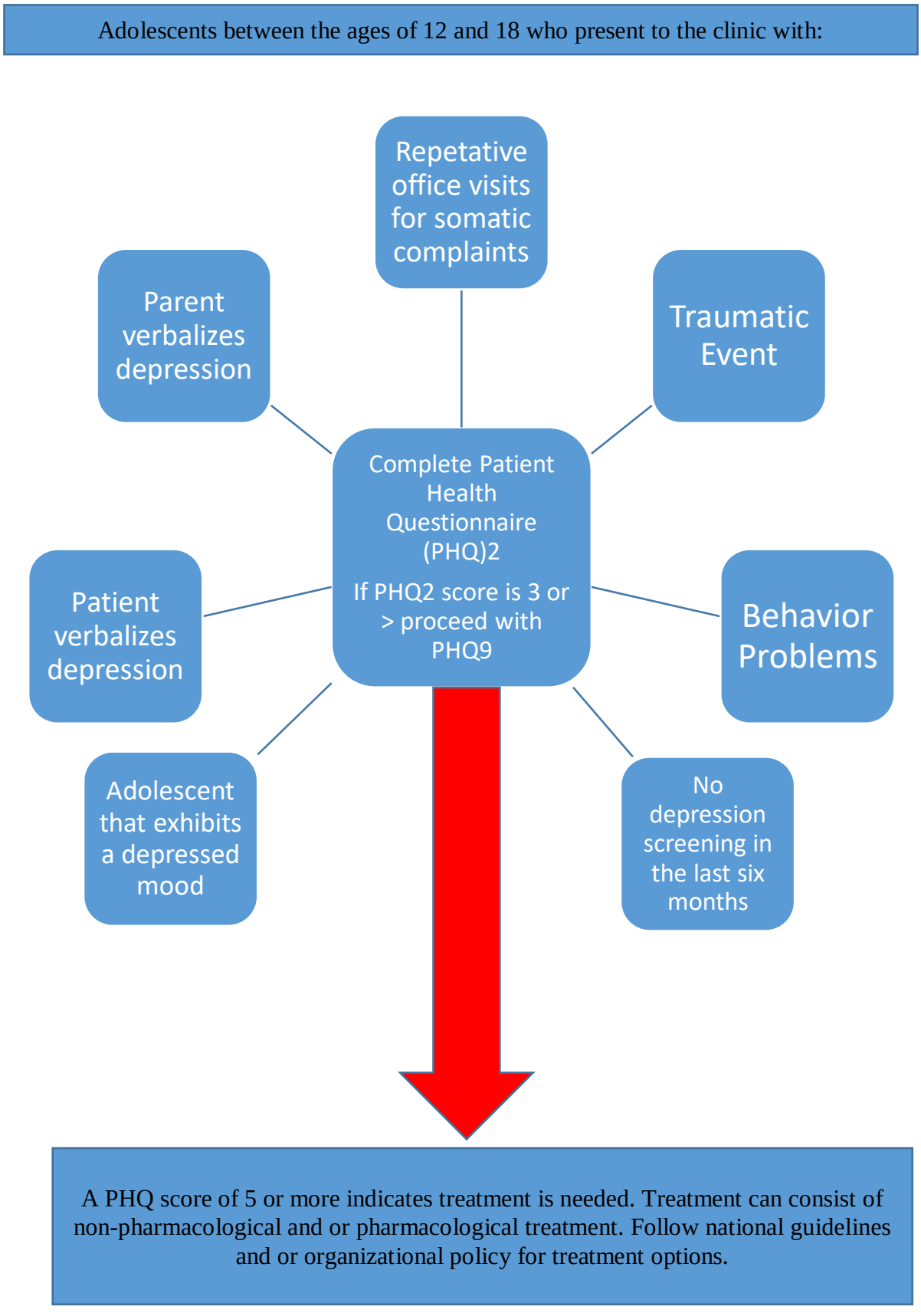
		and diagnostic tools, follow up visit recommendations, a suicide rating scale and referral information.	and their comfort and accountability levels regarding adolescent depression. The post survey also measured how often the providers used the provided toolkit.	indicated the treatment providers showed a 60% increase in their comfort level with a 63% increase in feelings of accountability. 3 of the 4 treatment providers used the toolkit 1 to 5 times and 1 provider used the toolkit more than 10 times. There was a 34% increase in correct knowledge answers regarding adolescent depression post assessment.				
Sayal, K., Yates, N., Spears, M., Stallard, P. (2014). Service in adolescents at risk of depression and self-harm: Prospective longitudinal study. *Social Psychiatry and Psychiatric Epidemiology*, 49(8), 1231-1240. doi:10.1007/s00127-014-0843-y	Quantitative longitudinal study	Do adolescents with unidentified self-harm or depression have contact with their primary care provider?	This quantitative longitudinal studied 3,749 adolescents 12 to 16 years of age who gave baseline and 6 month follow up data that consisted of information on mood, self-harm, and the amount of contact they had with their provider from the studies baseline thru the six month	The majority of the adolescents with self-harm or depression had visited their PCP in the six month period. More than two-thirds of the adolescents had visited the PCP for physical problems and not self-harm or	Identified adolescents that suffer from depression or had self-harm behaviors had utilized the services of their general provider over the last six month. Thus the primary care setting provides opportunities for these adolescents to be identified and referred to	Although adolescents with depression saw their general provider within six months of having depression, the majority accessed their general provider for physical healthcare needs and not mental healthcare needs.	The primary care setting is an ideal setting for providers to capture adolescent depression.	Quality of the Evidence: Moderate Strength of recommendation: Strong

			study interval.	depression. Self-harm and adolescent depression were both predictors of adolescents seeking medical healthcare services evidence by an adjusted odds ratio of 1.34 (95% CI 1.09, 1.64) and mentally health specialty services adjusted odds ratio 5.48 (95% CI 2.27, 13.25). 80% of the adolescents with probable depression had seen their primary care provider (79%) or a mental health provider (5%) in the year prior.	appropriate specialist.	Additional research is needed to determine why these adolescents did not seek their general provider for mental health concerns including the possibility that they are not aware that these services can be provided in primary care.		
Siu, A., & U.S. Preventive Services Task Force. (2016). Screening for depression in children and adolescents: Recommendation statement. *American*	Clinical summary and recommendation statement for clinical practice to address adolescent preventative health in primary care.	Adolescent depression is associated with functional impairments in school and family relationships. It also results in recurrent adult depression and suicidal thoughts, behaviors, and actions.	Systematic Review of the literature	USPTF found evidence that indicates that screening adolescents for depression can accurately identify adolescent depression in 12 to 18 year	When adequate systems are in place adolescent between 12 and 18 years of age should be screened in the primary care setting. USPTF found no harm in screening adolescents	The frequency of screen adolescents 12 to 18 and the methods used to screen required additional research. The USPTF do not have any current	If screening tools for adolescents depression are used in primary care for children 12 to 18 years of age major depressive disorder can accurately	Systematic Review Quality of the Evidence: High Strength of Recommendation: Strong

Family Physician, *93*(6), 506-508. doi:10.1542/peds.2015-4467.		When looking at national surveys 8% of adolescents have been noted to have depression.		olds. The PHQ for adolescents and the Beck Depression Inventory were two instruments that were most often used to screen adolescents for depression.	for depression.	recommendations of how often screening should take place nor do they recommend a specific screening tool be used.	be identified.	
Zenlea, I. S., Milliren, C.E., Mednick, L. & Rhodes, E. T. (2014). Depression screening in adolescents in the United States: A national study of ambulatory office-based practice. *Academic Pediatrics*, *14*(2), 186-191. doi: 10.1016/j.acap.2013.11.006	Cross Sectional Study (Time-dimensional Design)-Quantitative Research Design	Using national representation data this study was to determine how often adolescent depression screenings are performed in general or family practice settings. Objective study goals were to determine barriers associated with completing depression screenings in primary care. These identified barriers will guide recommendations to increase depression screenings.	In a cross sectional design, an analyzation and comparison of data from The National Ambulatory Medical Care Survey and the National Hospital Ambulatory Medical Care Surveys between 2005 and 2010 was completed. The study looked at ambulatory office visit for children 12-18 years of age. The ambulatory visits analysis took place in pediatric, general, or family practice settings.	Weighted visits from the two surveys totaled 143, 280,182 and 46,347 of these visit were sampled. The study noted 0.2% (95% CI 0.1-0.3) documented depression screening of the weighted visits equaled only 104 sampled visits. The odds of adolescent depression screening were decreased in Hispanics when compared to non-Hispanic whites yielding an adjusted odds ratio	Screening for depression in the primary care setting is uncommon in the overall adolescent population. When adolescent screens are performed adolescents with ethnic backgrounds are screened less often than non-Hispanic white adolescents. More adolescent screens occur in the Northeast than in the West.	The patient center medical home may be one approach to eliminating the barriers of inadequate depression screening in adolescents along with the ethnic disparities of screening as the study's analyses indicated that non-Hispanic white adolescents have the most access to the patient center medical home.	There needs to be an increase in depression screening for adolescent depression in the primary care settings that includes all race and ethnicity groups.	Case control study Quality of Evidence – Moderate as this is a case control studies Strength of Recommendation: Strong

				of 0.2, 95% CI 0.1-0.7. When comparing the number screening geographically, the Northeast screening where higher than the screening in the West yielding an adjusted odds ratio of 9.1, 95% CI 2.2-38.1. The findings also noted adolescents were more likely to be screened if they had not had a visit in the last 12 months compared to those patients that had multiple visits within the year.				

Appendix B: Adolescent Depression Screening Algorithm



Appendix C: Modified Adolescent Depression Screening Algorithm