COMBATING YOUTH DEPRESSION IN PRIMARY CARE

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SCREENING FOR YOUTH DEPRESSION IN PRIMARY CARE

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DOCTOR OF NURSING PRACTICE

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ABSTRACT

Youth depression is a serious mental health disorder that may have detrimental consequences. Half of all lifetime cases of mental illness begin before the age of 14 (Hagan, Shaw, & Duncan, 2008). Depression in youth is linked to increased morbidity and mortality, along with high-risk behaviors. Mental health and mood disorders are the leading cause of illness and burden among youth (Patel, 2013). Nationally, suicide is the third leading cause of death for individuals aged 15 to 24. In North Dakota, suicide is the first leading cause of death for individuals aged 15 to 24 (American Foundation for Suicide Prevention, 2016). Unfortunately, depression remains largely underdiagnosed and undertreated; only about 50 percent of youth with depression are diagnosed before they reach adulthood (Zuckerbrot, Cheung, Jensen, Stein, & Laraque, 2007).

The purpose of this project was to improve the mental health of youth through increasing universal screening in the primary care setting, and improve the confidence and ability of the primary care provider to diagnose and treat youth depression. Primary care provider education was launched through collaboration with Essentia Health, providing education regarding youth depression focused on universal screening, identification of youth depression, and treatment modalities. To evaluate primary care provider education, a pretest/posttest was completed, along with key stakeholder interviews. Surveys demonstrated an increased intent to screen and increased confidence in identifying and managing youth depression. The interview with key stakeholders was used to determine the effectiveness and feasibility of universal screening and management of youth depression in the primary care setting.

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DEDICATION

This dissertation is dedicated to any individual who has been impacted by depression during their lifetime along with any healthcare provider who works to improve mental health across our nation.

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CHAPTER ONE: INTRODUCTION

Depression is a critical problem both locally and nationally. Depression is a mental disorder that is characterized by emotional symptoms of sadness, guilt, loss of interest or pleasure, hopelessness, and possible suicidal ideation or attempt. Depression also causes symptoms such as altered sleep patterns, altered appetite, unintentional weight gain or loss, and decreased energy and concentration (Andreoli, Benjamin, Griggs, & Wing, 2010). According to the World Health Organization (2012), depression affects approximately 350 million people worldwide and is the leading cause of disability, and results in approximately one million people who take their own lives by suicide each year. For every person who completes suicide, there are twenty more people who have attempted suicide (World Health Organization, 2012). The burden of depression and other mental conditions is on the rise worldwide. Depression is the leading cause of work absenteeism and compromised productivity in adults (National Institute of Mental Health, 2014). Major depression can affect up to 6.7 percent of the U.S. population over the age of 18, with an overall rate of an adult suffering an episode of major depression in their lifetime at 20 to 25 percent (National Institute of Mental Health, 2014). Women are approximately 70 percent more likely to experience depression during their lifetime (National Institute of Mental Health, 2014). Research shows that up to one in four patients in primary care suffer from depression, but only about one-third of these patients are identified by their primary care provider (American Psychological Association, 2015).

Unfortunately, depression often starts at a young age. Half of all lifetime cases of mental illness begin before the age of 14 (Hagan, Shaw, & Duncan, 2008). Youth is defined as the period between childhood and adult age, specifically ages 15 to 24 (United Nations, 2014). The term youth is often interchanged around the world with terms such as adolescent, teen, and

young person. Youth encompasses the transition of childhood dependence to adult independence. Youth-onset depression tends to be a particularly destructive and obstinate condition (Cook, Peterson & Sheldon, 2009). First and foremost, one must understand the diagnosis and treatment of youth depression, as it often reoccurs or is chronic into adulthood. Youth depression is a disorder that can be readily diagnosed and treated in primary health care, which is why it is critical for primary care practitioners to be thorough in the interview and exam process. Careful assessment and differential diagnosis are extremely critical, as early identification and treatment are of prime importance to prevent the sequela of morbidity and mortality associated with depression.

Background

Prevalence of Youth Depression

In the United States, the prevalence of youth depression is variable depending upon the source. Nonetheless, it is the most common problem affecting the mental health of our youth across the nation. Generally, youth meet the diagnostic criteria for a lifetime mental illness at a rate of one in every four to five (Youth.gov, 2015) and approximately 17 percent of youth have an emotional, mental, or behavioral disorder (Youth.gov, 2015). According to the Center for Disease Control and Prevention (2013), one in four high school students experience depression and approximately eight percent of individuals aged 12 and over experience depression in any two-week period. In the primary care setting, depression occurs anywhere from nine to 20 percent of the youth population (Taliaferro, Hetler, Edwall, Wright, Edwards, & Borowsky, 2013).

The rate of depression increases significantly between the ages of 13 and 18, with 11 percent of youth experiencing a depressive disorder by the age of 18 (Gray & Dihigo, 2015). In

2013, 29.9 percent of students in the U.S. reported feeling so sad or hopeless almost every day for two or more weeks in a row that they stopped doing their expected or normal activities (Kann, Kinchen, Shanklin, Flint…Zaza, 2013). Also, the prevalence of feeling sad or hopeless was higher among females compared to males (39.1% vs 20.9%, respectively). Race and ethnicity also impact rates of depression; Hispanic females experience adolescent depression at the highest rate, with both black and white females having high rates as well (Kann et al, 2013). Lastly, according to the National Institute of Mental Health (2014), approximately 2.5 million adolescents aged 12 to 17 had one major episode of depression in the year of 2013. The following figure represents an estimated 10 percent of the U.S. population aged 12 to 17 in the year 2013 that experienced a major depressive episode.

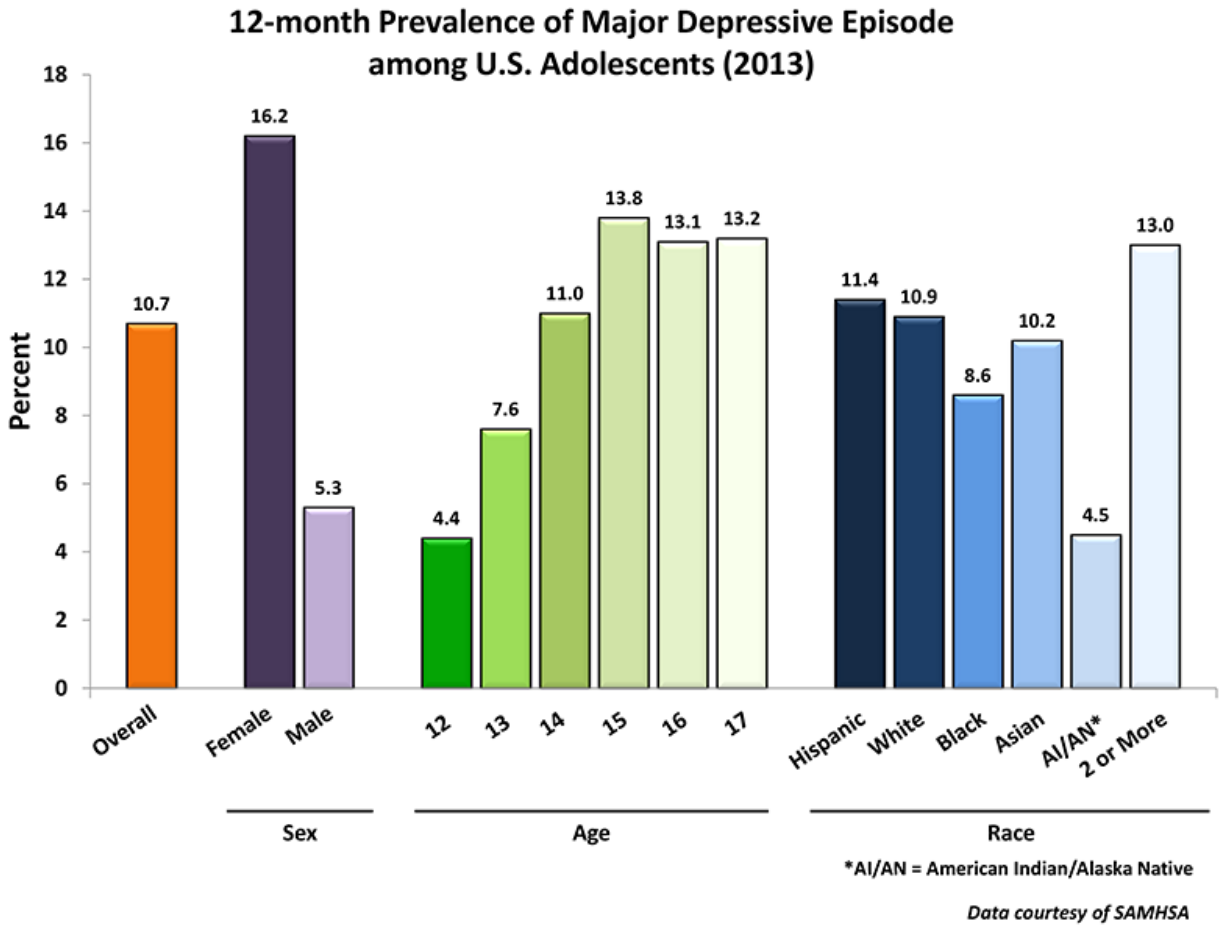

Figure 1. Prevalence of Adolescent Depression (National Institute of Mental Health 2013).

Risk Factors

There are many risk factors that contribute to youth depression. First, one must pay attention to genetic risk, as depression tends to run in families. In family, twin, and adoption studies, there is demonstration that there are both environmental and genetic factors that play a role in major depression (Hamrin & Magorno, 2010). When genetic and environmental factors are combined, there is a significant increase in the risk for depression. Cognitive risk factors that may play a role in youth depression include low self-esteem, poor school performance, social skill deficits, learning disabilities, high levels of anxiety, cognitive distortions and high self-criticism (Hamrin & Magorno, 2010).

There are situational factors that are also linked to depression in youth, such as: death of a loved one or parent, substance use, sexual abuse, physical abuse, emotional abuse or neglect, divorce, family conflict, low socioeconomic status, and difficulty with friendship, romantic difficulties, and few positive peer relationships (Hamrin & Magorno, 2010). Acute or chronic health conditions may also increase an individual's risk for depression, such as asthma or diabetes (Katon, Russo, Richardson, McCauley, & Lozano, 2008). Lastly, one must consider the increased risk for youth depression in females, those who have parents with less than a high school education, and those from racial or ethnic minorities (Libby, Stuart-Short, & Patankar, 2014).

Diagnosis

Depression signs and symptoms in youth are commonly overlooked and instead viewed as the normal process of growing up. Many youth present to the primary care office with physical health complaints, not psychological symptoms of depression (Taliaferro et al, 2013). According to Gledhill & Garralda (2011), only about two percent of youth present with emotional or behavioral troubles. Primary care providers have a tendency to rely on presenting complaints and family concerns for identifying a problem such as depression. However, when digging a little deeper, many youth have clinical depression that is identifiable and treatable (Dihigo, 2014). Of importance to note, the youth population may not verbalize their feelings or psychological problems without provoking from the provider (Taliaferro et al, 2013).

The diagnosis of youth depression is made after a complete mental and physical evaluation and assessment. Generally, health practitioners use the Diagnostic and Statistical Manual of Mental Disorders, fifth edition (DSM-V) that was created by the American Psychiatric Association (2015). In order to meet criteria for a depressive disorder in the youth

population, an individual must have five or more qualifying symptoms for most of the day, nearly every day, over a two-week period, with at least one of the five symptoms being depressed mood or a loss of interest or pleasure in things that was previously interesting and pleasurable (See Table 1).

Table 1

DSM-V Criteria for Major Depression

Major Depression Criteria
Depressed mood, most of the day, nearly every day, as indicated by either subjective report (feels sad or empty) or observation made by others (appears tearful). Note: can also be irritable mood in adolescents.
Markedly diminished interest or pleasure in all or many activities for most of the day, nearly every day, as indicated by either subjective or objective data.
Significant unintentional weight loss, weight gain, or a decrease or increase in appetite. Note: a change of body weight of more than 5 percent in one month.
Insomnia or hypersomnia
Fatigue or loss of energy
Psychomotor agitation or retardation
Feelings of worthlessness or inappropriate or excessive guilt
Difficulty concentrating, thinking, or making decisions
Recurrent thoughts of death, suicide, or a suicide attempt

Adapted from the DSM-V criteria from the American Psychiatric Association (2015).

Along with five or more of these symptoms being present for the diagnosis of depression, generally the symptoms cause a significant impairment or distress in social, educational, occupational, or other important areas of functioning (American Psychiatric Association, 2015). To classify the severity of the depression, a variety of methods are used. Typically, mild depression is characterized as an individual experiencing four to five of the listed depression symptoms that lead to a mild impairment of functioning. Moderate depression is classified as an individual having six to seven depressive symptoms along with a moderate impairment in functioning. Individuals with severe depression would be considered when an individual experiences all or close to all of the above symptoms, along with having a severe impairment in

functioning (American Psychiatric Association, 2015). According to Libby, Stuart-Shor and Patankar (2014), if an individual experiences five to six depression symptoms but they also are suffering from suicidal ideation or has developed a suicide plan, they should be classified as severe.

Generally, the youth population presents similar to that of adults when experiencing depression. However, there are differences that may be noticed depending on the stage of physical, emotional, cognitive, and social development of the adolescent (American College of Preventive Medicine, 2011). The young individual who presents with depression may experience irritability, temper tantrums, mood swings, become easily frustrated, and have social withdrawal. Somatic complaints are a common finding in the youth population, which include: headaches, fatigue, abdominal pain, generalized pain, unexplained symptoms of physical illness, or gastrointestinal disturbances (American College of Preventive Medicine, 2011). Some physical signs of depression that may help with diagnosis include poor hygiene, pale, psychomotor retardation or agitation, impaired concentration, diminished abstract reasoning, and a tired appearance (Hamrin & Magorno, 2010).

The Adolescent Brain

During the adolescent years, the brain goes through fundamental reorganization (Konrad, Firk & Uhlhaas, 2013). Studies comparing the adolescent brain to the adult brain demonstrate that brain maturation extends beyond adolescence, especially with cognitive maturation (Fine & Sung, 2014). During the youth years, there is a significant increase in risk taking behavior including unprotected sex, alcohol and illicit drug use experimentation, and risk taking behavior leading to accidental death. The literature discussed by Fine & Sung (2014) explained that adolescents have the ability to know what to do, but are not able to act according to their own

reasoning and make sound choices in certain circumstances related to delayed prefrontal cortex development.

Brain imaging suggests that there is maturation of two different brain systems, one for reward and the other for cognitive control. Neuroimaging demonstrates expanded cognitive production, but decreased ability to manage affective and social influences in decision making for the youth population (Fine & Sung, 2014). Due to the prefrontal areas of the brain not being mature with interconnected neural circuits, there is a delayed satisfaction in long-term gains. Hence, youth tend to have difficulty balancing risks and potential rewards, especially in labile situations. However, youth do tend to do well with emotionally neutral areas where the outcome is irrelevant to the individual. Risky behavior is therefore linked to the imbalance between the limbic and rewards systems, with a lack of the fully mature prefrontal control system (Konrad, Firk & Uhlhaas, 2013). As all youth will experience emotional circumstances, it is important to provide a safe environment and promote non-risky behaviors, especially with a reward system when possible.

Significance

Depressive disorders in adolescence cause increased morbidity and mortality. Mental health and mood disorders are the leading cause of illness and burden in the youth population and are leading cause of disability in the United States for individuals aged 15 to 44 (Patel, 2013, American College of Preventive Medicine, 2011).

Youth who experience depression are at an increased risk for social impairment and personal or family distress, which may lead to self-harm or suicide (Gledhill & Hodes, 2011). Depressed youth often have difficulty with school performance, engage in high risk behaviors, and have an increased risk for recurrent depression in adulthood (American College of

Preventive Medicine, 2011). Common high-risk behaviors found in youth depression include weapon carrying, alcohol and illicit drug abuse, nicotine use, and high-risk sexual behavior. Depression in the youth population is associated with failure to enter college, higher odds of having sexual intercourse and an increase in the number of sexual partners, and females being at increased risk to not complete high school (American College of Preventive Medicine, 2011).

Youth depression is also a disorder that may present with co-morbid conditions. According to the American College of Preventive Medicine (2011), 40 to 90 percent of youth who experience depression also have another psychiatric disorder. The most common co-morbid diagnoses include: attention deficit disorder, attention deficit hyperactivity disorder, anxiety, somatiform disorders, substance use, disruptive disorders, dysthymia, and eating disorders (Hamrin & Magorno, 2010, American College of Preventive Medicine, 2011).

Suicidality

Suicide is the most serious consequence that can result from youth depression. Adolescence is the time of life where the most suicide attempts take place (Robinson, 2015). Nationally, suicide is the third leading cause of death for ages 15 to 24 and the second leading cause of death for 25 to 34 year olds (North Dakota Department of Health, 2014). In the state of North Dakota, suicide is now the first leading cause of death for ages 15 to 24 (North Dakota Department of Health, 2014). In one study that examined suicidality over a 12 month period, 14 percent of youth had seriously contemplated suicide, 10 percent had made plans, and over six percent had made a suicide attempt (Pereira, Egan, & Stevermer, 2010). According to the North Dakota Department of Health (2014), an estimated 108 individuals die by suicide in the United States each day. The following figure depicts the suicide rates of all ages in North Dakota compared to the United States. (Figure 2).

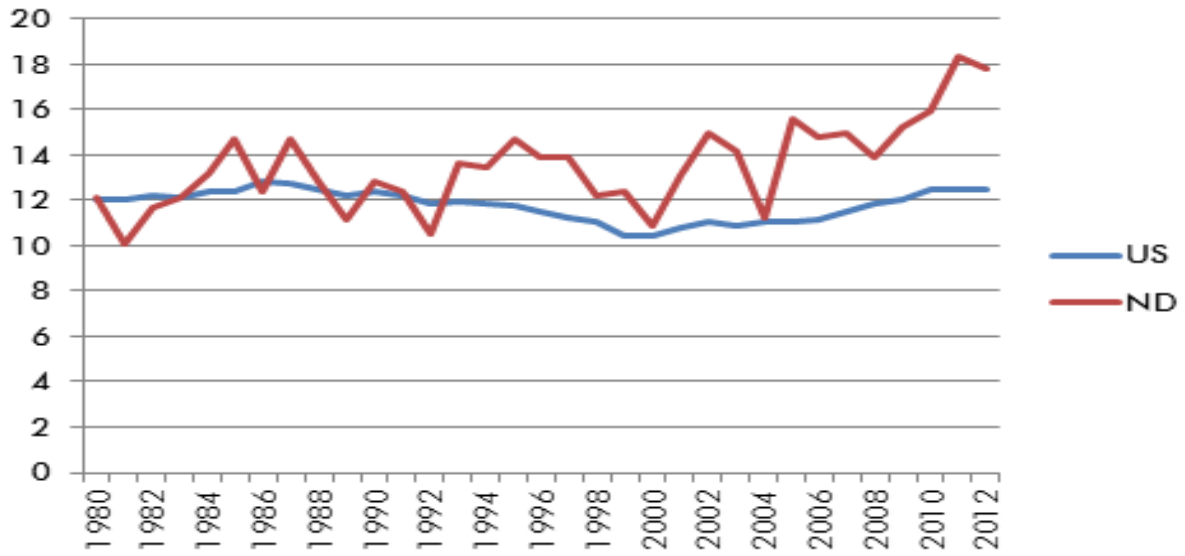

Figure 2. Suicide Rates per 100,000 from 1980 to 2012. Retrieved from the North Dakota Department of Health (2014).

One interesting finding about youth suicide is that it is more common in rural areas and occurs at rates almost twice the rates in urban areas (Wagner, 2015). Youth suicide can also be found in clusters (Richardson, 2015). A few risk factors that may predispose an adolescent individual to suicide include bullying, family history, depression, substance abuse disorder, easy access to firearms or lethal methods, history of sexual or physical abuse, family difficulty, and low socio-economic status and education level (Richardson, 2015). Another important finding with suicide is that males compete suicide approximately four times more often than females (North Dakota Department of Health, 2014). Lastly, studies find that more than 90 percent of youth who die by suicide had an identifiable mental health disorder at the time of their death (National Institute for Health Care Management, 2010).

Statement of the Problem

The current state of the science demonstrates that youth experiencing depression in North Dakota and across the nation have crucial needs. The primary care setting offers an opportunity for early detection and treatment of depression in youth. Unfortunately, depression in youth remains under-diagnosed and undertreated. Only about 50 percent of youth who have depression are diagnosed before they reach adulthood (Zuckerbrot et al, 2007). Further, nearly two out of three depressed youth are not identified by their primary care provider and do not receive any care or treatment for their depression (Zuckerbrot et al, 2007). Nearly 70 percent of youth with depression symptoms did not discuss them with their health care provider in the past year (Zuckerbrot, et al 2007; Taliaferro et al, 2013). A study completed by Richardson, Russo, Lozano, McCauley, and Katon (2010) found that only 22 percent of youth that had a DSM-IV diagnosable depression disorder were identified or treated. Jonas (2011) reported findings during the Healthy People 2010 initiative that only two percent of primary care providers screened for youth depression in the years 2005-2007.

In a study that was completed by Libby, Stuart-Shor, and Patanker (2014), the main reasons for low rates of mental health disorder identification and treatment in primary care were examined. Four areas were identified as reasons for poor identification and treatment, including: poor comfort or confidence level in the primary care provider, time constraints and financial reimbursement in primary care, limited access to mental health specialists, and the black box warning on all selective serotonin reuptake inhibitors that was placed by the Food and Drug Administration in 2003 with a fear of increasing suicidality in youth when prescribing these medications.

Regarding the concerns facing youth depression, Healthy People 2020 identified goals to improve youth mental health services through prevention and ensuring access to appropriate, quality mental health services (U.S. Department of Health and Human Services, 2014). The goals identified by Healthy People 2020 include: reducing the proportion of youth who experience major depressive episodes, to reduce the suicide attempts by youth, and to increase youth depression screening by primary care providers (U.S. Department of Health and Human Services, 2014). It is critical that health care providers learn about youth depression and can successfully identify and manage the condition. Universal screening in the primary care setting could help health care providers identify cases of youth depression early on and increase the proportion of youth who can initiate treatment. Universal screening encompasses screening all youth and is much more comprehensive than targeted or episodic screening. Universal screening has the ability to identify youth who may be at risk or in need of an intervention that may not have been identified otherwise.

The US Preventative Services Task Force (2009) recommends screening all youth at least annually starting at age 12 for depression, as long as there is effective treatment and counseling available to those who would need it. The American Academy of Pediatrics recommends primary care providers should be trained to screen for youth mental health disorders (Hamrin & Mogorno, 2010). Other organizations also recommend screening youth for depression at regular intervals including: The American Medical Association, the National Research Council and the Institute of Medicine, and the National Association of Pediatric Nurses and Nurse Practitioners.

Project Description

Project Purpose

The purpose of this practice improvement project was to increase awareness of the problem regarding youth depression in the community and across the nation. Through primary care provider education the intention was to increase the confidence and knowledge of primary care providers in identifying and managing youth depression. The Essentia Health primary care system was chosen for the project. Originally, implementing an evidence-based standardized screening tool for youth depression was planned, but during implementation Essentia Health had launched implementation of a universal screening protocol with the PHQ-2 with reflex to the PHQ-9 for anyone aged 13 and above. Through increasing provider knowledge regarding youth depression, the purpose was to emphasize the importance of universal screening, increase primary care provider confidence in early recognition of youth depression, and increase treatment rates. Through the practice improvement project, the overall goal was to increase the mental health of youth and improve outcomes for youth experiencing depression.

Project Objectives

The objectives of this practice improvement project were:

1. To increase awareness of the significance of youth depression among primary care providers.
2. To increase primary care provider knowledge and confidence regarding identification and treatment of youth depression, in turn increasing the percentage of youth who are identified with youth depression and the percentage of treatment rates for youth depression through pharmacological and non-pharmacological modalities.

3. Assess the feasibility of universal screening for youth depression in primary care from the perspective of primary care providers.

It is essential that individuals understand the components involved with youth depression in order to determine any need related to the problem. Chapter one highlighted areas of importance including the background, prevalence, risk factors, diagnosis, significance, suicidality, and identification obstacles. The following chapter will focus on literature findings with screening tools and relevance to primary care along with the theoretical framework.

CHAPTER TWO: LITERATURE REVIEW AND THEORETICAL FRAMEWORK

A thorough literature review was conducted to examine screening practices for youth depression with identification tools, and standards of care in the primary care setting. Multiple databases were searched, including EBSCO, CINAHL, Medline, PsychARTICLES, PsychINFO, and Health Source. Key words included: depression, adolescents, youth, screening, primary care, and mental health. Inclusion criteria included literature regarding primary care, and the youth population aged 13-24 who experienced depression. Articles that were not relevant to youth depression, primary care, and published prior to 2001 were excluded.

Literature Review

Relevance to Primary Care

It is well known that there is a major shortage of psychiatric health care providers and services for mental health. Due to the large psychiatric professional shortage it is critical that primary care providers are competent in identifying and treating mental health disorders. The primary care setting offers an excellent opportunity for screening and identification of youth depression. As noted earlier, youth depression remains underdiagnosed and undertreated in the primary care setting. Approximately 70 percent of adolescents are evaluated by their primary care provider every year, including 45 percent of suicide victims evaluated within a month before they completed suicide (Fallucco, Seago, Cuffe, Kraemer, & Wysocki, 2015). According to Dihigo (2014), approximately 75 percent of the youth population in the United States are routinely evaluated in the primary care setting, but only 16 to 38 percent of primary care providers correctly identify adolescents with depression. Due to the increased prevalence of mental health concerns facing youth, primary care providers must possess the proficiency for depression assessment and management.

One of the problems in the past is that primary care providers have relied on their clinical interview, family concerns, and presenting complaints to identify depressed youth. Research shows that very few providers have implemented a systematic assessment tool or screening tool to identify youth depression (Zuckerbrot, Cheung, Jensen, Stein, & Laraque, 2007). Furthermore, the clinical interview is not always adequate for assessment, especially with as many as two in three youth with depression not being identified by their primary care provider. Thus, the guidelines for adolescent depression in primary care guidelines were developed to assist primary care providers with the assessment and management of adolescent depression, along with recommendations for a systematic screening protocol (Zuckerbrot et al, 2007).

Screening Tools

There are multiple screening tools available for youth depression such as the Patient Health Questionnaire, the Beck Depression Inventory-II, and the Mood and Feelings Questionnaire. The Patient Health Questionnaire has three forms, the PHQ-2, PHQ-9, and the PHQ-A, which can be found in Appendix G. In a study examining the validity of the Patient Health Questionnaire for Adolescents (PHQ-A), findings suggest that the PHQ-A is a valid diagnostic screening tool and demonstrates satisfactory sensitivity, specificity, and overall diagnostic accuracy in comparison to a clinical interview (Johnson, Harris, Spitzer, & Williams, 2002). Specifically, the PHQ-A has a sensitivity of 73 percent and a specificity of 94 percent for depression (Johnson et al, 2002). The PHQ-A can be used in ages 12-18 and is a reliable tool for the use of early detection and recognition of adolescent psychiatric disorders (Johnson et al, 2002). Benefits of the Patient Health Questionnaire include being free of charge, having a short completion time of five minutes, and can be calculated by the provider or nurse.

The PHQ-9 and the PHQ-2 (the adult short and long version of the Patient Health Questionnaire) have also demonstrated effectiveness as screening tools for any depressive disorders in youth in pediatric care (Allgaier, Pietsch, Fruhe, Sigl-Glockner, & Schulte-Korne, 2012). The PHQ-2 has a sensitivity of 97% and a specificity of 67% for a simple two-question survey (Maurer & Darnall, 2012). If a patient screens positive on the PHQ-2 (score of three or above), the PHQ-9 is then administered (Libby, Stuart-Short, & Patankar, 2014). The PHQ-9 has a sensitivity of 94 percent and a specificity of 86 percent (Libby, Stuart-Short, & Patanker, 2014). Overall, the PHQ-9 is favored over the PHQ-2 as it addresses the DSM-V criteria for depression and can establish depression severity. Depressive symptom severity was been found to be a significant predictor of depression persistence for the youth population, in that risk of persistence increases as severity increases. Each one point increase of the PHQ-9 score above 11 was associated with a 16 percent increase of depression 6 months later (Allgaier et al, 2012).

The Beck Depression Inventory-II (BDI-II) is a 21-question, multiple choice, self-administered questionnaire that can be used in individuals aged 13 to 80 (Appendix H). The BDI-II coordinates with the depressive symptom criteria of the DSM-V and takes about 10 minutes to complete (Corona, McCarty, & Richardson, 2013). The BDI was revised to the second version in 1996, and specifically constructed to measure the severity of self-reported depression in adolescents and adults. The BDI-II is typically a self-report measure, but providers may verbally administer the measure to youth (Corona, McCarty, & Richardson, 2013). The 21 questions have a scale value of zero to three. A cutoff score above 20 suggests moderate depression and a score of 29 or higher suggests severe depression. One barrier for use of the BDI-II is that there is a cost to purchase an administration kit.

Katon et al (2008) compared the gold standard psychiatric interview to the Mood and Feelings Questionnaire-Short Form (MFQ-SF). The MFQ-SF is a 33-item measure that consists of questions regarding how the adolescent has been feeling or acting within the past 2 weeks (Appendix I). There is a short version of the MFQ that has 11 questions, taking about 5 to 10 minutes to complete. For adolescents, the cutoff score on the full version for likelihood of depressive disorder from those who do not have depression is 12 or higher (Corona, McCarty, & Richardson, 2013). The MFQ is generally used with children aged 8 to 17 years, but there is also a version that focuses on parental report of depression symptoms. The MFQ- is found to be reliable in identification of depression from childhood through late adolescence (Turner, Joinson, Peters, Wiles, & Lewis, 2014).

Importance must be placed on visits with the youth population, so that the individual being screened for depression understands the confidentiality parameters in order to promote open discussion and honest responses. In cases of severe depression with thoughts of suicide or self-harm, the practitioner would then be obligated to report this (Hamrin & Mogorno, 2010). Also important to consider are the ease of the screening tool, the time it takes to complete, and the cost. With a written screening tool, youth would be able to fill the answers in before the practitioner entered the room, hence saving time for the appointment and a thorough assessment. Most importantly, the U.S. Preventative Service Task Force (2009) found that the PHQ and the BDI-II were acceptable to use in the primary care setting, demonstrating a high sensitivity and specificity for the youth population.

Theoretical Framework

The theoretical framework selected for practice improvement is the Theory of Planned Behavior (TPB). The TPB was created by Icek Ajzen in 1999, and incorporates components from the Theory of Reasoned Action (Ajzen & Fishbein, 2010). The TPB incorporates all of the components of Theory of Reasoned Action, including behavioral intention, attitude, subjective norm, and the added construct of perceived behavioral control (Boston University School of Public Health, 2013). The TPB has been widely used because it offers a clear theoretical account of the links between attitudes, intentions and behavior, along with guidance on how constructs should be operationalized, which makes the design of behavior change interventions easier. Ajzen provides a framework for understanding the ways in which models like the TPB can be used to change behavior (Boston University School of Public Health, 2013). Successful behavior change can be achieved when intentions are changed through either attitudes, subjective norms or perceived behavioral control. There are two strategies for changing beliefs: introducing new salient beliefs or changing existing prominent beliefs of the target population (Boston University School of Public Health, 2013). The TPB is easy to follow and worked well for the practice improvement project, especially in creating a continuing education module to understand and improve health care providers' practice patterns in screening, assessing, and treating youth depression. The project design addresses the four components of the TPB: behavioral intention, attitude, subjective norm, and perceived behavioral control (See Table 2).

Table 2

Theory of Planned Behavior

Component	Definition	Project Specific Component
Behavioral Intention	Perceived likelihood of performing the behavior. The central variable is intention to perform behavior and is the immediate determinant of the behavior.	What is the likelihood of the primary care provider to screen for youth depression? Intent will predict how many providers screen and the frequency.
Attitude	The personal evaluation of the behavior.	Has the primary care provider had positive results through screening for youth depression? An individual's attitude toward screening for youth depression is likely to be positive if that person perceives that there are positive outcomes resulting from the behavior. Are there any negative attitudes towards the behavior?
Subjective Norm	Beliefs about whether key people approve or disapprove of the behavior and motivation to behave in a way that gains their approval	The primary care provider's individual belief that social referents think he/she should or should not screen for youth depression. Would most primary care providers agree with screening for youth depression?
Perceived Behavioral Control	Belief that one has, and can exercise, control over performing the behavior. The relationship between perceived behavioral control and behavior suggests that individuals are more likely to engage in behaviors over which they have control. Perceived behavioral control can be determined by perceived presence or absence of resources and opportunities and the perceived ability of these to induce or hinder performance	Does the provider feel control over screening for youth depression and is the primary care provider confident to screen appropriately? Are the providers influenced by internal factors such as sills, information, ability, emotions, or personal deficiencies? Do barriers or dependence on others influence the provider?

(Ajzen & Fishbein, 2010).

CHAPTER THREE: PROJECT DESIGN AND IMPLEMENTATION

Project Design

Following a systematic and selective literature review the project of universal screening for youth depression was created. Literature suggests that depression often starts at a young age and can have devastating effects. Initiating a program for early identification and intervention is key for prevention of suicide, risk-taking behavior, and depression persistence into adulthood. Research finds that depression in youth is underdiagnosed and undertreated. Findings suggest the need for increased identification of youth depression and increased provider knowledge, hopefully resulting in faster diagnosis and treatment. The focus of this project was to improve knowledge of the primary care provider on youth depression through evidence-based literature. The project design launched educational material to primary care providers and evaluated key informants experiences and feedback regarding the universal screening process at Essentia Health in terms of benefits and barriers, and knowledge regarding increased screening rates, identification, treatment, and referral. The educational session was directed towards all primary care providers: physicians, nurse practitioners, and physician assistants. A dissertation proposal meeting was held on February 11, 2015 with the dissertation committee chair and members. After feedback from committee members, the content for the project implementation was developed.

Project Implementation

In collaboration with the Essentia Health educational specialist for continuing medical education, a PowerPoint presentation (Appendix A) was created for primary care providers regarding youth depression. The PowerPoint presentation was created to educate primary care providers on a variety of concerns facing youth with depression, including: prevalence,

significance, suicidality, risk factors, adolescent brain development, identification, screening, management, relevance to primary care, and use of the guidelines for adolescent depression in primary care toolkit (GLAD-PC), as mentioned above.

Primary care providers that attended the educational session were eligible for one continuing medical education credit. Continuing education credits were offered in hopes to gain a higher attendance at the lunch sessions that were provided. For creation of the PowerPoint, an extensive literature review for evidence-based literature and guidelines were used, including: 1) The American College of Preventative Medicine (2011), 2) Guidelines for Adolescent Depression in Primary Care (GLAD-PC, 2007), 3) National Institute of Health Care Management (2010), 4) U.S. Department of Health and Human Services (2014), and 5) the United States Preventative Services Task Force (USPSTF, 2009). Dr. Lara Lunde, the Chair of Family Medicine at Essentia Health West Region, was assigned as the physician lead to the continuing medical education process. Dr. Lunde reviewed the content of the PowerPoint presentation and approved content for relevance and accuracy. The continuing medical education committee at Essentia Health also approved the PowerPoint. To advertise and promote the lunch educational session a system-wide email was sent out at Essentia Health along with flyers that were placed throughout each of the primary care offices.

The intent of this practice improvement project was to increase primary care provider knowledge regarding youth depression leading to an increased compliance with standardized depression screening for adolescents, a quality measure at Essentia Health. In turn, there would be increased advocacy for mental health and youth would have improved care for mental health services.

Educational Sessions

After approval of the primary care provider education through Essentia Health's continuing medical education committee and Essentia Health's Chair of Family Medicine for the West Region, Dr. Lunde, implementation of the practice improvement project started on June 26, 2015. Flyers were placed in various places around Essentia Health to advertise the project, along with an email notification of the project details, dates, and times. An example of one of the fliers is located in Appendix J. The email advertisement was sent to invite all employees in the primary care setting for the West Region at Essentia Health. The primary care provider education was presented through a PowerPoint lunch educational session at five different Essentia Health locations from 12:00pm to 1:00pm. The five locations included the West Fargo clinic, South University clinic, Moorhead clinic, West Acres clinic, and the Wahpeton clinic. All four of the Essentia Health Family Medicine department locations in Fargo-Moorhead were chosen, along with the Wahpeton clinic due to its large size and number of primary care providers. The project was implemented in five different locations for convenience and accessibility for the primary care provider to attend. The table below displays when and where the project took place (Table 3).

Table 3

Practice Improvement Implementation Dates

Time & Date	Location
June 26th, 2015 12:00pm –1:00pm	Essentia Health, West Fargo Family Medicine Clinic
July 1st, 2015 12:00pm-1:00pm	Essentia Health, West Acres Family Medicine Clinic
July 15th, 2015 12:00pm-1:00pm	Essentia Health, Moorhead Family Medicine Clinic
August 6th, 2015 12:00pm-1:00pm	Essentia Health, South University Family Medicine Clinic
August 18th, 2015 12:00pm-1:00pm	Essentia Health, Wahpeton Family Medicine Clinic

Key Informant Interviews

Key informant interviews were selected to help aid the project with information regarding the pressing issue of youth depression. Individuals were selected who have first-hand experience, knowledge and understanding regarding the subject of youth depression and possess the ability to provide insight on the problem the community faces with youth depression along with recommendations for solutions. The individuals selected were primary care providers within the Essentia Health Family Medicine system who have had 10 or more years of experience providing care. The names of the providers selected are Dr. Lara Lunde, M.D., Heidi Fitzgerald-Olson, PA-C, and Penni Weston, MSN, C-NP. The face-to-face key informant interviews took place at three separate times in December of 2015 at the convenience of the provider and lasted approximately 45 minutes. The key-informant interviews were composed of four questions and can be found in Appendix D.

Data Collection

To assess the effectiveness of the educational session qualitative data were collected through the use of a pre-education survey (Appendix B) and a post-education survey (Appendix C). Before each educational session a paper survey was passed out for the primary care provider to complete. After each of the five sessions a post education survey was passed out in paper format for evaluation. The pre-education and post-education surveys were collected and compiled into an excel spreadsheet to be sent to a statistician. At the completion of the practice improvement project, all of the surveys along with the excel spreadsheet were sent to the statistics department at North Dakota State University for analysis and descriptive statistics.

The key-informant interviews that took place with three fundamental primary care providers were evaluated through four qualitative interview questions (Appendix D). The information obtained from each interview was typed into a separate word document. At the end of the key-informant interview process the results were evaluated for themes, which will be explained in detail in the evaluation and findings chapters to follow.

Institutional Review Board Approval

In health care, protecting patients and promoting holistic wellbeing is essential. The implementation and evaluation of collected data did not include personal access to individual patient's personal information. At no point in the practice improvement project implementation or evaluation of outcomes was there a need to have access to a client's personal information.

This practice improvement project was considered exempt by the North Dakota State University institutional review board on March 20, 2015 (Appendix E). An amendment to the IRB protocol was also approved on September 10, 2015 in order to interview key stakeholders in primary care for their expert opinion on how screening for youth depression has been going in

primary care, along with benefits, barriers, increase in identification, and the referral process (Appendix F).

CHAPTER FOUR: EVALUATION

Continuing Education PowerPoint

The continuing education module was evaluated through the use of a pre-education survey and a post-education survey, as mentioned in chapter three (Appendix B and Appendix C). The health care provider completed the pre-education survey before the lunch presentation started. Once the presentation finished, the post-education survey was handed out for the participants to complete. Evaluation of the educational PowerPoint was based on the learning objectives for the practice improvement project, which were evaluated through the use of the pre and post education survey.

First, the pre-education survey collected demographic information including gender, age range, years in practice, patient population focus and provider position (physician, nurse practitioner, physician assistant, or other). The demographic data was obtained to evaluate for trends in screening practices and correlation to years in practice, type of practitioner, and age.

Next, the pre-education survey asked a series of questions to determine how often the provider screens for youth depression, how important they feel screening for youth depression is, their confidence in their ability to recognize signs and symptoms of youth depression, and their confidence to manage youth depression. There were also two open-ended questions that asked the provider to discuss any barriers to youth depression and to comment on what may help facilitate the practice of universal screening for youth depression.

The post-education survey followed through on the questions addressed in the pre-education survey along with ensuring the objectives for the presentation were met. The beginning portion of the post-education survey asked the providers to determine if the four PowerPoint presentation objectives were met by answering agree or disagree, also leaving a

blank area for comments for objective evaluation. The post-education survey then re-evaluated the provider's feelings of importance for screening for youth depression, their confidence in ability to screen or diagnose youth depression, and their confidence in the ability to manage youth depression. To further evaluate the educational session, the following questions were asked in the post-education survey: how useful was the educational session regarding youth depression, do you feel that your intent to screen for youth depression has increased after the educational session, and do you feel that you have the appropriate screening instruments and treatment resources available in your practice? At the end of the post-education survey, a blank section was created for any comments.

The first objective, increasing awareness of the significance of youth depression, was discussed comprehensively in the PowerPoint educational session. Multiple slides highlighted the implication and significance of youth depression including: background information, significance, risk factors, suicidality, adolescent brain pathophysiology, problems with identification, and problems with treatment. Specifically, slides three through 16 of the educational PowerPoint encompassed increasing provider awareness of youth depression, which was approximately 42 percent of the content.

The second objective, to increase primary care provider knowledge and confidence about youth depression, thus increasing rates of screening and treatment, was also thoroughly covered in the PowerPoint educational module. In general, the entire PowerPoint presentation as geared to increase provider knowledge regarding youth depression and to enhance confidence in primary care for management of youth depression. The Guidelines for Adolescent Depression in Primary Care (GLAD-PC) was discussed in the PowerPoint education to increase provider knowledge and enhance confidence in recognition and management of youth depression. There

were a total of 19 slides with content from the GLAD-PC (slides 17 through 35) which was approximately 54 percent of the content.

The third objective, to assess the feasibility of universal screening for youth depression in primary care, was evaluated the key-informant interviews.

Key Informant Interview

Key informant interviews were completed and analyzed to identify barriers, assets, and other content related to screening and management of youth depression from the perspective of primary care providers. For the key-informant interviews, meetings times were set up at the convenience of the informant and were held at the Essentia Health family medicine clinic in Moorhead. The interview was designed as a semi-structured format where there was a set of four specific questions (Appendix D). Each interview lasted approximately 45 minutes and thorough notes were taken. The data obtained were compiled from each of the three key-informants and placed into a word document to identify common themes. The data found from the key-informant interview were used to enhance the project findings and provide recommendations for further practice improvement.

Logic Model

The logic model tool was used to guide the overall evaluation of the practice improvement project. The purpose of this logic model is to provide a sequence of events connecting the proposed practice improvement project with the intended results, giving a methodical and visual tool to use (W.K. Kellogg Foundation, 2004). The logic model requires systematic thinking and planning and allows one to gather and use information to continuously improve programs, which can be used as a road map for a sequence of events (W.K. Kellogg Foundation, 2004). According to the W.K. Kellogg Foundation (2004), evaluation experts feel

the logic model is an effective way to ensure program success as you can adjust approaches and change courses as program plans are developed. Thus, ongoing assessment and review are essential. The components of the logic model include: inputs, activities, outputs, outcomes, and impact. Table 4 shows how the practice improvement project was designed with the use of the logic model for guidance in the evaluation process.

Table 4

Project Logic Model

Resources/Inputs	Activities	Outputs	Outcomes	Impact
1. Graduate DNP Student 2. Primary care providers at Essentia Health along with nursing and support staff 3. CME committee at Essentia Health 4. Dissertation committee members 5. The recommendations for youth depression from the literature, GLAD-PC, United States Preventative Services Task Force (2009) and Healthy People 2020	1. Primary care provider education at Essentia Health 2. Key-informant Interviews	1. Feedback from primary care providers through pre-education and post-education surveys 2. Feedback from key informant interview regarding the universal screening and other components to youth depression (barriers, benefits, increased identification, treatment, and referral).	1. Increased awareness of the significance of youth depression 2. Increased provider knowledge and confidence regarding the youth population and depression 3. Increased rates of universal screening for all eligible youth and increased treatment rates	1. Early identification of at risk youth 2. Early treatment and or referral for youth positive for depression 3. Significantly impact clinical practice to continue universal screening for youth depression and advocacy for youth mental health 4. Provider support for the continued use of universal screening and early intervention

(W.K. Kellogg Foundation, 2004)

CHAPTER FIVE: RESULTS

Presentation of the Findings

Data through the pre and post PowerPoint education were obtained after each of the five educational sessions. Once the educational session was completed, the data were compiled together in an Excel spreadsheet and sent to a statistical consultant at North Dakota State University for analysis. A total of 15 participants (N=15) completed the lunch PowerPoint education and completed the surveys. The majority of the data collected were in quantitative form, with exception to two qualitative questions in the pre-education survey (questions 8 and 9 on Appendix B) and an area left for comments and suggestions after several of the questions in the post-education survey (Appendix C). In addition qualitative data were collected from the key-informant interviews.

The educational PowerPoint had objectives that were required by the CME department at Essentia Health. These objectives were to: 1) to review the literature on youth depression, 2) gain knowledge on the impact and explore the Guidelines for Adolescent Depression in Primary Care, 3)increased confidence in ability to identify, manage, and provide excellent care to those with youth depression, and 4) to identify and apply recommendations for screening, diagnosis, and management for patients with youth depression. All 15 of the respondents (100%) felt that these educational objectives were met after the PowerPoint presentation. These specific objectives helped meet the overall practice improvement project objectives one and two: to increase awareness of youth depression and to increase primary care provider knowledge and confidence about youth depression, in turn increasing the percentage of youth who are identified with youth depression and increasing the percentage of treatment rates for youth depression through pharmacological and non-pharmacological modalities. The third objective of the practice

improvement project, to assess the feasibility of universal screening in primary care, was met through question four in the key-informant interview.

Demographic Data

The project sample included 15 participants, 12 were female (80%) and three were male (20%). Out of the 15 participants, two were in their twenties (13.3%), six were in their thirties (40%), three were in their forties (20%), three were in their fifties (20%), and one was sixty or older (0.067%). For years in practice, three individuals have been in practice for over twenty years (20%), three have been practicing 10 to 15 years (20%), three have been in practice 5 to 10 years (20%), and six have been practicing five or less years (40%). Out of the population that is seen in practice, the majority (80% of participants) see all ages of patients, including pediatrics, adolescents, adults, and geriatrics. Lastly, eight of the providers who attended the educational session are nurse practitioners (53.3%), five are physicians (33.3%), and two are physician assistants (13.3%). Figure 3 represents the demographic information for project participants.

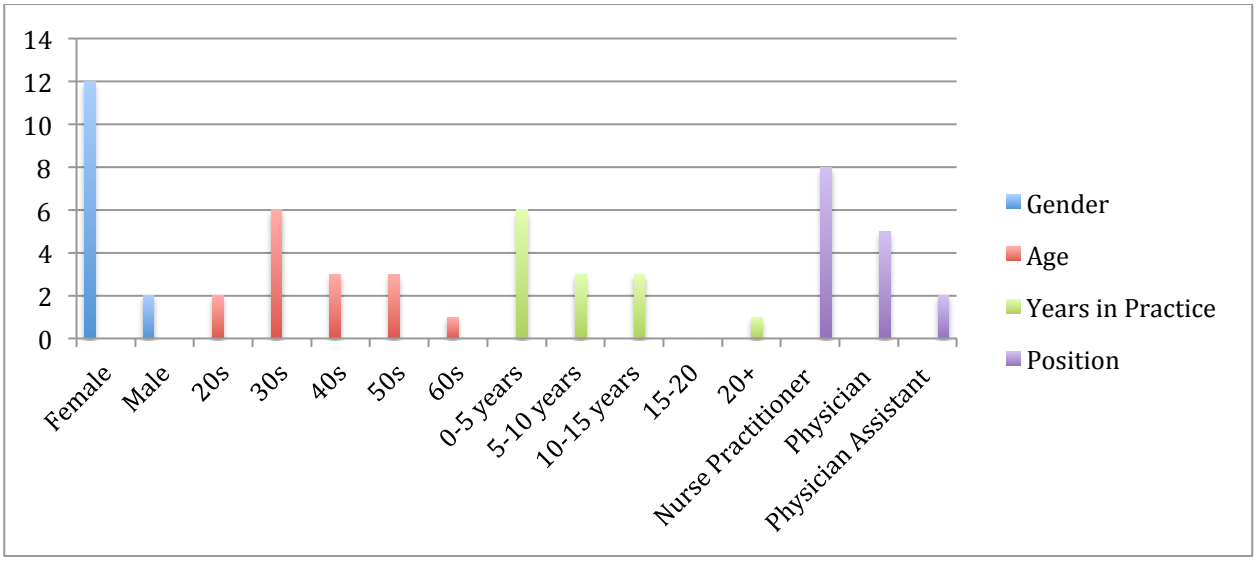

Figure 3. Participant Characteristics

Survey Data

For the pre-education survey, all respondents (100%) either felt that it was important or very important to screen for youth depression. After the education, respondents felt even stronger about the importance of screening for youth depression after they were educated on the significance of youth depression and increasing awareness to the problem, meeting objective 1. Due to the small sample size it was not possible to determine if there was a statistical difference between pre and post surveys. See figure 4 for data on the importance of screening for youth depression.

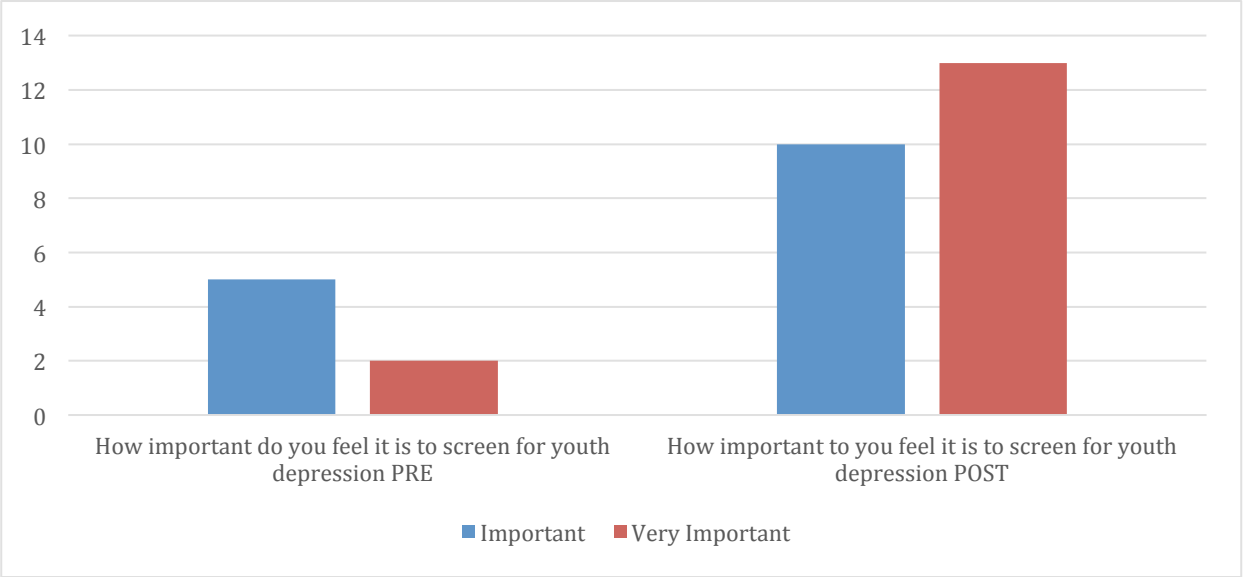

Figure 4. Importance of Screening for Youth Depression

Objective two was to increase provider knowledge and confidence regarding youth depression. There was a general increase in confidence in terms of ability to recognize signs and symptoms of youth depression and ability to treat youth depression from before the educational session to after the educational session. Due to the small sample size data were unable to be tested for statistical significance of pre and post outcomes. See figure 5 for provider confidence data.

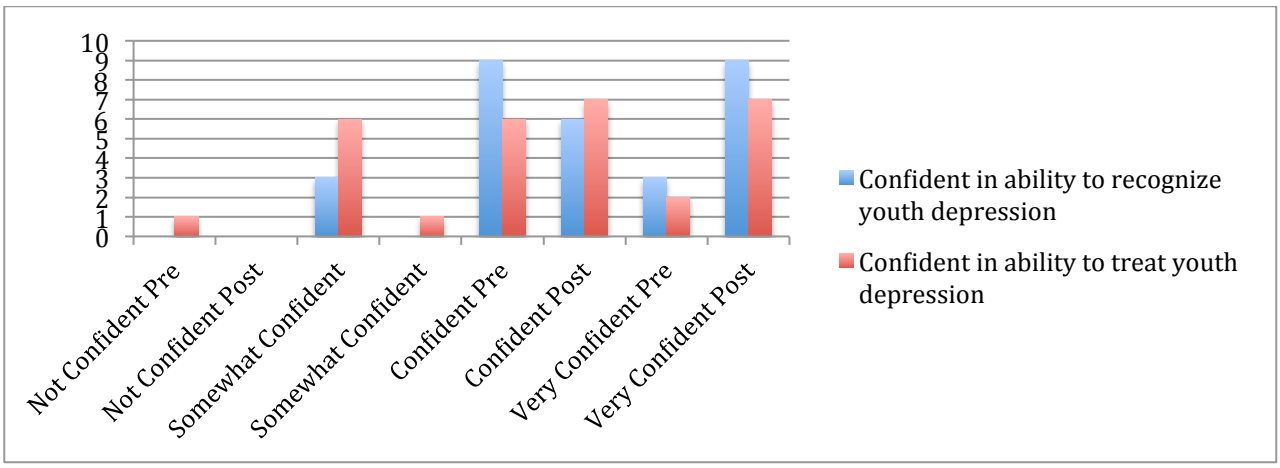

Figure 5. Provider Confidence

On the post-education survey, the respondents were asked if they had the instruments and resources they needed to screen for or treat youth depression in their practice. Two of the 15 (13.3%) providers felt that they did not have the instruments they needed to screen for youth depression, where 13 of the 15 (86.7%) providers felt they had the instruments needed. Seven of the 15 (46.7%) providers felt that they did not have the resources they needed to treat youth depression, and eight of the 15 (53.3%) providers felt they had the resources needed to treat youth depression. Due to a small sample size of 15, the data cannot be evaluated for statistical significance. See figure 6 regarding instrument and resource availability data.

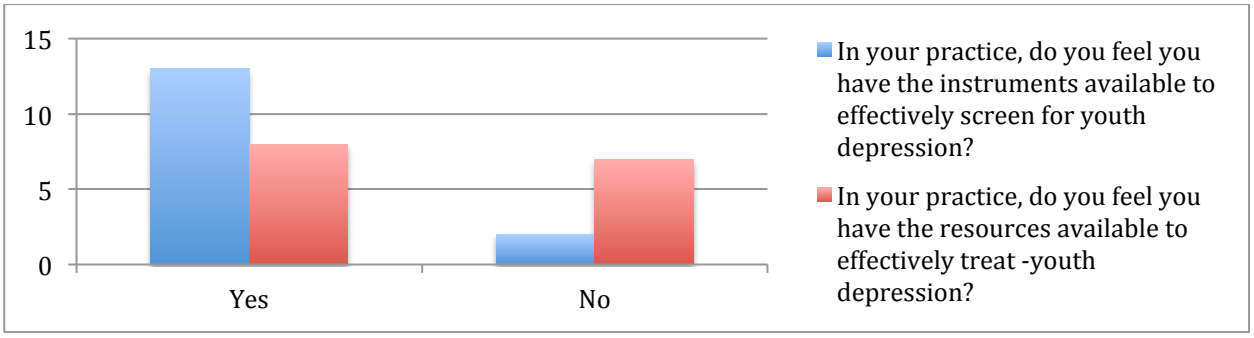

Figure 6. Instrument and Resource Availability

Overall, most of the participants felt that the educational PowerPoint was beneficial and pertinent to their practice. The question was asked, "How useful do you feel the education

seminar was regarding youth depression" with the scale of one to five, one being not useful and five being very useful. One of the 15 (6.7%) respondents felt neutral on usefulness, three of the 15 (20%) respondents felt the education was useful, and 11 of the 15 (73.3%) respondents felt the education was very useful. See figure 6 for data regarding how the participants felt about the usefulness of the PowerPoint education.

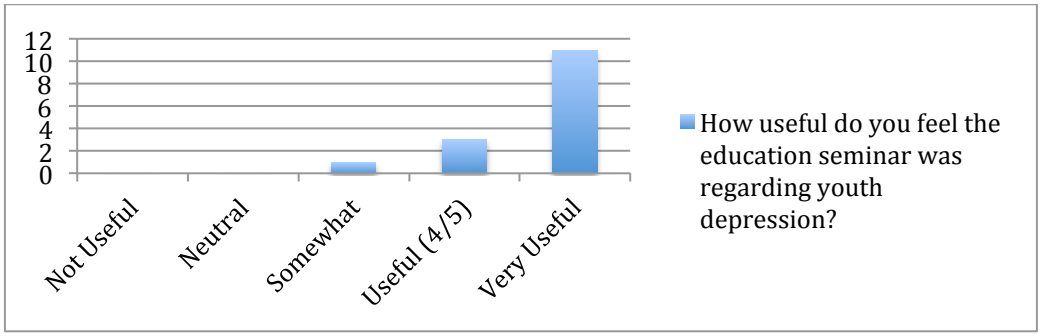

Figure 7. Usefulness of PowerPoint Education

As a requirement of the Essentia Health CME department, a question was asked to determine if the objectives of the educational PowerPoint were met. All fifteen respondents (100%) answered that the objectives were met during the educational session. Lastly, the respondents were asked if their intent to screen for youth depression had increased after the education, and all fifteen respondents (100%) felt that their intent to screen increased.

Qualitative Survey Data

Minimal qualitative data were retrieved through the use of the pre-education and post-education surveys. The main qualitative finding was obtained through question eight and nine on the pre-education survey (Appendix B). (Table 5).

Table 5

Qualitative Data Pre-Education Survey

Pre-Education Qualitative Data	*Question 8:* *Please list any barriers that contribute to screening for youth depression*	*Question 9:* *What would help facilitate universal screening for youth depression?* ***(Objective 3)***
Responses	-Time -Lack of provider knowledge -Parents	-Tool built into Epic

Key Informant Interviews

Qualitative data were retrieved through the three key informant interviews with Dr. Lara Lunde M.D., Penni Weston, CNP, and Heidi Fitzgerald Olson, PA-C. The data overall highlighted the need for increased and improved mental health services for youth, along with increased awareness regarding the significance of youth depression. As mentioned above, objective three was to assess the feasibility of universal screening for youth depression in primary care. This objective was met through question four in the key-informant interview. The following table (table 6) was compiled to display the qualitative key-informant data:

Table 6

Qualitative Data Key-Informants

Qualitative Data from Key Informant Interview	Question 1 **Part 1**: Studies show that adolescent depression is consistently under-recognized and undertreated in primary care. What do you feel contributes to this finding? **Part 2**: Do you feel you have adequate training regarding youth depression?	Question 2 **Part 1**: What are the barriers to screening for youth depression? What are the barriers to treatment? **Part 2**: What will help combat these barriers?	Question 3 **Part 1**: Why do you believe North Dakota has a higher suicide rate for young individuals compared to the nation? **Part 2**: How can we help lower this statistic?	Question 4 Is universal screening for youth depression feasible in the primary care setting? Please discuss ways to promote universal screening. **(Objective 3)**
Key Informant 1	**Part 1:** -Not screening -Lack knowledge or tools to identify -Parents present in room -Inexperienced or uncomfortable providers -"Black Box Warning" **Part 2:** -Has adequate training through experience, but did not have enough training in medical school	**Part 1:** -Lack of universal screening tools or availability (cost, copyright) **Part 2:** -Fear with increase suicide risk after initiating medication -Lack of mental health providers -Lack of community resources for mental health -Provider ambivalence -Parents -Increase in community resources and mental health providers -Increase in funding from state -Insurance reform -Lobbying for mental health -Educate adolescents on resilience and coping through community programs -Limiting social media	**Part 1:** -Lack of mental health providers and resources, especially for rural areas -Cold weather -Poverty levels -Rural state -Access to firearms -Substance abuse **Part 2:** -North Dakota needs to put monies towards mental health -Mandatory patient education in the school setting on mental health as part of orientation in middle school -Nurtured heart coach programs -Grant funding	-Yes, screening is feasible -Providers need to become more comfortable with screening and take time to look for youth depression -Need to make screening part of the rooming process -Improved direct access with provider for youth -Room ages 12 and up without parents for first part of visit -Provider education
Key Informant 2	**Part 1:** -Stigma -Knowledge deficit on what mental health is -Parents -High demands and expectations placed on youth -Lack of "listening" from the medical provider and missing recognizable signs **Part 2:** -Has adequate training from experience but feels more education on this subject would be beneficial -Contemplating getting certified in mental health to meet the community need	**Part 1:** -Largest barrier is stigma -Provider lack of knowledge of resources available in community -Lack of interest by provider -Culture and racial barriers **Part 2:** -Incorporate mental health awareness and education in health classes for youth -Administer a screening tool during all wellness exams -For common physical complaints without diagnostic findings be sure to make a follow-up exam to discuss mental health concerns -Bill visits that discuss mood and mental health on time and schedule appropriately -Provider education	**Part 1:** -Lack of resources especially in the rural areas -The strong German and Norwegian ancestries and religious beliefs not conductive to discussing problems. Many teens live in unhealthy home situations but this is never discussed -Transgender and homosexual teens afraid to live in their home if they reveal their sexual orientation **Part 2:** -Talk about youth depression wherever and whenever time allows -School programs -Mental health awareness statewide	-Universal screening is feasible -GAD7 and PHQ9 take only minutes to complete -Providers need to be willing to screen and take the time to look for youth depression -Screen without the parent present -Increased provider awareness and knowledge regarding disease process of depression and other mental health disorders to foster increased confidence in identification and management -Build trusting relationships as a primary care provider
Key Informant 3	**Part 1:** -Time constraints -Lack of familiarity -Shortage of mental health resources **Part 2:** -Not adequately trained for depression specific to the youth population	**Part 1:** -Nursing demands -Time constraints - Stigma -Parents **Part 2:** -More clinical resources and staffing -More mental health services including a counselor on site -Statewide educational program on mental health	**Part 1:** -Lack of access to highly trained mental health professionals, including inpatient facilities -Access to deadly weapons -Concurrent alcohol abuse **Part 2:** -Public service announcements -More community based resources -Improved provider education -Parental education -School based programs	-Yes universal screening is feasible, but there is always a time crunch issue-Epic tools built in for mental health to aid universal screening -MyHealth screening tools youth complete before their wellness visit -Make screening part of a quality measure with a financial incentive for providers

CHAPTER SIX: DISCUSSION AND RECOMMENDATIONS

Interpretation

From the respondents' perception, the results demonstrate that learning occurred after attending the educational session regarding youth depression. Most of the respondents who attended the educational session felt the material was beneficial to their practice. As shown above, providers had increased knowledge and confidence after attending the education session and thus had an increased intent to screen for youth depression. The key-informant interviews revealed that providers felt they had adequate training on depression in general, but felt this was mainly from experience and not through their educational program.

There was a varied response in terms of whether the respondent felt they had the necessary tools or resources available in their practice to identify and manage youth depression. After the key-informant interview it is clear that mental health resources are scarce and not easily accessible, especially in rural areas. Findings suggest a need for future research and practice improvement projects regarding youth depression in the primary care setting.

Limitations

The main limitation to this practice improvement project was the number of participants who completed the PowerPoint educational session. With only 15 respondents, one is unable to classify any of the data as statistically significant. Due to busy practices, difficulties arise when trying to recruit primary care providers for educational sessions and capturing a large audience proves challenging. Another limitation is the short implementation time from when Essentia Health had started their quality initiative of universal screening for depression with the PHQ-2. Due to Essentia launching universal screening around the same time as this primary care project, it was difficult to obtain data to analyze for screening rates prior to the universal screening

quality initiative to after, along with how many youth testing positive for depression. Lastly, one could consider that this practice improvement project being implemented at only one health system in the area as a limitation. Data may have been different if the project was implemented at more than one health system and in more than one geographical location.

Recommendations

Findings from this project support a need to advocate for more mental health services, lobby for insurance reform and funding, and for primary care providers to be adequately trained on the topic of youth depression. For the specific project location, Essentia Health, recommendations are made to continue to strategize and advocate for youth depression, as suicide is the number one cause of death for individuals aged 15 to 24 in North Dakota (which jumped from being the number two leading cause of death at the start of this practice improvement project three years ago).

Essentia Health is in the process of initiating universal screening for youth depression with the two-question Patient Health Questionnaire (PHQ-2). Encouragement is made to the organization to continue universally screening all youth, to collect data on the significance of youth depression, and to provide a formal training for mental health in the youth population. An organization would benefit to have select primary care providers with interest in mental health go through an advanced training program on youth depression to: 1) become an expert on the topic of youth depression 2) provide help, recommendations, and guidance to other primary care providers in regards to youth depression, and 3) improve the mental health of youth in our state.

The opportunity exists for Essentia Health to expand their services to encompass the specialty of mental health to help increase the mental health specialist shortage and to be able to provide a holistic healthcare approach as an organization. One way to expand their mental health

services for the youth population would be to have one or two primary care providers from each clinic location attend the SAT-D training for enhanced knowledge and skills. The SAT-D training is explained under implications for future research. Each of these recommendations promotes Essentia's mission statement of making a healthy difference in people's lives, and encompasses values of providing high-quality, accessible care. Most importantly, youth having access to primary care providers who have advanced training on mental health will better promote the medical home model.

Lastly, recommendations should be made to launch a statewide action plan to improve the mental health of North Dakota's youth, which would likely require on-going planning, time, funding, and many stakeholders. To improve the mental health of our youth, a plan needs to be initiated state- wide and encompass all healthcare organizations. A school-based program to help instill resilience in youth and promote healthy behaviors would be highly beneficial.

Implications for Practice

Because of the extreme shortage of mental health providers, the primary care setting becomes a mainstay for mental health services and the safeguard for the proper identification and treatment initiation of youth depression. It is essential that primary care providers have adequate training and awareness regarding the mental health of youth. Information and curriculum specific to the adolescent population is not typically addressed in the primary care specialty. Providers would be more equipped to provide healthcare to the unique needs of the adolescent population given they had adequate training and education, especially in the role of identification of mental health disorders and the psychosocial interview.

Implications for Future Research

Given the significant problem of youth depression and the problems that follow, future research is warranted. After completion of the practice improvement project, an unrelated study was released that looked at a primary care provider training program in screening, assessment, and treatment of adolescent depression (SAT-D). After the primary care providers completed the SAT-D training, results showed increased screening rates for adolescent depression that were maintained for up to 20 to 24 months, and increased provider confidence and knowledge regarding screening, assessment, and treatment of adolescent depression. A beneficial research project in the future would implement the use of the specialized SAT-D training program in the primary care setting throughout North Dakota to help increase screening rates, thus improving the mental health of our youth and improving patient outcomes for youth with depression.

Application to Other Nurse Practitioner Roles

Nurse practitioners in the primary care setting care for a wide variety of patient populations and need to be equipped to assess and manage youth with mental health concerns. It is imperative that nurse practitioners in primary care continue to stay up to date with continuing education regarding the youth population, especially in terms of health promotion and disease prevention for the leading causes of morbidity and mortality. Mental health assessment is an important component in primary care and it is critical that the nurse practitioner is able to deliver appropriate services. Family nurse practitioners are in an excellent position to advocate for improved mental health in the youth population and to create change through appropriate identification, assessment, and early treatment initiation of youth depression. Through advanced planning and preparation, nurse practitioners can lead the way to combat youth depression and positively impact the future health of the nation's youth.

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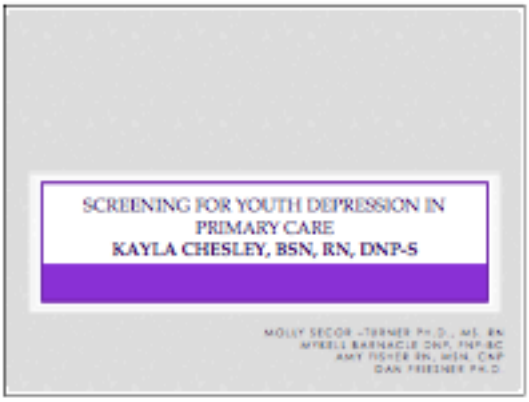
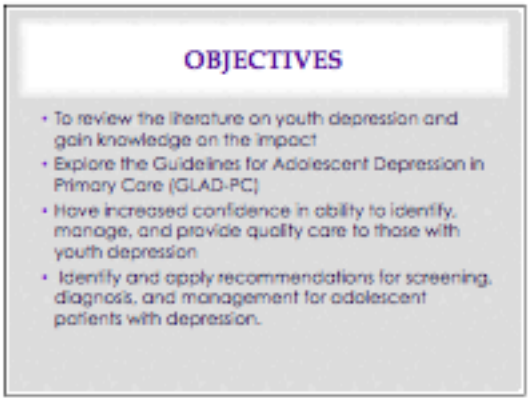
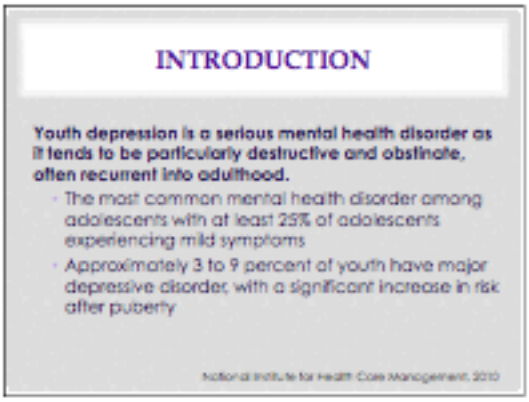
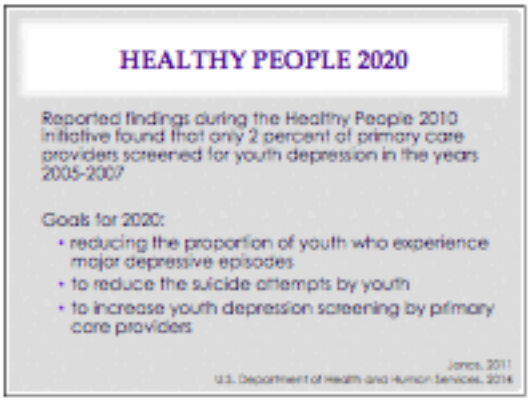
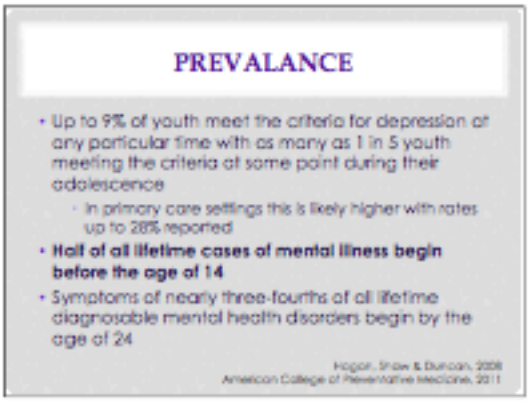
APPENDIX A. POWERPOINT EDUCATION

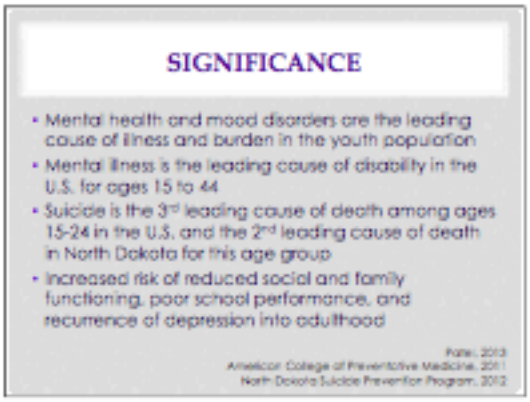












SIGNIFICANCE

Youth suffering from depression are not receiving appropriate mental health services for the following reasons:

- Poor comfort level and lack of feelings of accountability from the PCP
- Time constraints and financial reimbursement in a primary care office
- Limited access to mental health specialists
- Black box warning by FDA (2004)

Libby, Stuart-Shor & Patorikar, 2014

SIGNIFICANCE

Youth that experience depression experience poorer physical health and engage in risky behaviors

- Substance abuse, high risk sexual activity, fighting, weapon carrying
- Pose significant social and or financial burdens to families and society
- Unidentified depression in youth place them at a high risk of suicide
- Approximately **90%** of all youth who die by suicide were suffering from an identifiable mental disorder at their time of death, typically depression

National Institute for Health Care Management, 2010

SUICIDALITY

- 22-29% of U.S. high school students reported serious thoughts of killing themselves in the past year
- 10.9% of high school students reported making a suicide plan in the past year—
  - 6.3% attempting suicide at least 1 time in the past year
- Approximately 60% of individuals suffering from youth depression report having thought about suicide and approximately 30% actually attempt suicide
- 59% of youth suicide victims had psychiatric symptoms for more than 3 years before their death

American College of Preventative Medicine, 2011

SUICIDALITY

- Nearly 50% of depressed adolescents attempt suicide and 10% of those with major depression commit suicide within 15 years after being diagnosed
- **Most suicide attempts are made during adolescence than at any time in life**
- The highest predictors for suicide during adolescence are sexual and physical abuse if they occurred early in life
- The most common methods for suicide for youth are firearms (49%), hanging (38%), poisoning (7%) and other (6%)

Robinson, 2015

THE ADOLESCENT BRAIN

- During the adolescent years, the brain goes through fundamental reorganization and continues to develop
- The limbic system, which drives emotions, intensifies at puberty. The prefrontal cortex, which controls judgment and impulses, does not mature until the 20s
- Risky behavior is therefore linked to the imbalance between the limbic and rewards systems, with a lack of the fully mature prefrontal control system

Rae & Sung, 2014

THE ADOLESCENT BRAIN

- Delayed satisfaction in long term gains so youth have difficulty balancing risks and potential rewards
- Youth tend to do well in emotionally neutral areas where the outcome is irrelevant to them
- Neuroimaging suggests expanded cognitive production, but decreased ability to manage affective and social influences in decision making for the youth population

Rae & Sung, 2014

RISK FACTORS

- Genetic
- Environmental
- Race
- Gender (Females 2:1)
- History of traumatic experiences/abuse/neglect
- Substance abuse
- Family background
  - Youth with mothers who did not graduate high school (2:1)
  - Living in a single parent environment (1.5:1)

American College of Preventative Medicine, 2011
National Institute of Health Care Management, 2010

IDENTIFICATION/TREATMENT STATISTICS

- As many as 2 in 3 depressed youth are not identified by their primary care providers and do not receive any kind of care
- When the youth population is diagnosed with depression by a primary care clinician research finds that only half of these patients are treated appropriately
- Nearly 70 percent of youth with depression symptoms did not discuss them with their health care provider
- IOM & Surgeon General report only 1 in 5 adolescents with mental health disorders are treated appropriately

American College of Preventive Medicine, 2011

SCREENING/IDENTIFICATION

Depression screening is feasible in primary care, accepted by patients and their parents, and does not disrupt the flow of patient care

- Increases depression identification, increases rates of referral, and increases the number who are treated
- Most health care visits for youth take place in primary care settings
- Approximately 70% of adolescents reported at least one primary care visit in the previous year, with those having emotional/behavioral concerns visiting more frequently
- USPSTF & IOM recommend screening for MDD to all youth when systems are in place to ensure accurate diagnosis, psychotherapy, and follow-up

American College of Preventive Medicine, 2011

MANAGEMENT

- 3 of 4 diagnosed mental health disorders in young people are managed in primary care
- 3 of 4 cases of adolescent depression are mild to moderate in severity, therefore responsive to early intervention
- Surveys have shown 9/10 primary care providers believe it is their responsibility to identify depression in their youth patients, but only 1/5 feel youth depression should be treated in primary care
- Shortage of mental health services, stigma associated with mental health referrals, and families' preference for obtaining health treatment in primary care

American College of Preventive Medicine, 2011

GLAD-PC

- Guidelines for Adolescent Depression in Primary Care
- Created to assist primary care providers in the identification and management of adolescent depression through information, recommendations, educational resources, and tools
- Toolkit available with clinical assessment flowchart

EARLY IDENTIFICATION

- Establish a systematic protocol to detect youth depression as early as possible
- Many providers rely on their clinical interview to identify youth at risk for depression
  - Time constraints make it difficult to review all emotional and behavioral components
- The GLAD-PC offers two questionnaires that cover many different psychosocial and health-related risk factors that can be completed by the patient/parent at home or in the waiting room
  - Guidelines for Adolescent Preventive Services (GAPS)
  - Strengths and Difficulties Questionnaire (SDQ)

GLAD-PC, 2010

SIGNS/SYMPTOMS

- Frequent sadness, tearfulness, crying
- Hopelessness about the future
- Decreased interest in activities previously enjoyed
- Missed classes and or school absences
- Poor school performance
- Social isolation, lack of connection with friends and family
- Poor concentration
- Lack of motivation, persistent boredom, low energy level
- Increased irritability, anger, hostility
- Difficulty with relationships, little interest in maintaining relationships
- Frequent unexplained symptoms of physical illness (headaches, abdominal pain)
- A major change in eating and/or sleeping patterns
- Talk or efforts to run away from home
- Self-injurious behaviors, such as cutting

GLAD-PC, 2010

DSM-IV-TR CRITERIA MDD

Five or more of the following symptoms have been present during the same 2-week period and represent a change from previous functioning. At least one of the symptoms must be depressed mood, or loss of interest or pleasure:

- Depressed mood most of the day, nearly every day
- Markedly diminished interest or pleasure in all, or most all, activities most of the day, nearly every day
- Significant weight loss when not dieting or weight gain (more than 5% of body weight in a month)
- Insomnia or hypersomnia nearly every day
- Psychomotor agitation or retardation nearly every day
- Fatigue or loss of energy nearly every day
- Feelings of worthlessness or excessive or inappropriate guilt nearly every day
- Diminished ability to think or concentrate, or indecisiveness, nearly every day
- Recurrent thoughts of death, recurrent suicidal ideation without a specific plan, or suicidal attempt or a specific plan of committing suicide

GLAD-PC, 2010

DIFFERENTIAL DIAGNOSIS FOR DEPRESSION SYMPTOMS IN ADOLESCENTS

- Bipolar disorder
- Dysthymic disorder
- Substance induced mood disorder
- Adjustment disorder with depressed mood and/or anxiety
- Depressive disorder NOS
- Subthreshold depression
- Anxiety Disorders
- PTSD
- Eating Disorders
- ADHD
- Conduct disorder
- Anemia
- Mononucleosis
- Thyroid disorders

GLAD-PC, 2010

STANDARDIZED SCREENING TOOLS

- Quick and easy to administer and can greatly improve the assessment process
- USPSTF recommends the use of the Patient Health Questionnaire (PHQ-9) or the Beck Depression Inventory (BDI)
  - PHQ-9 has a sensitivity of 73% and a specificity of 94%
  - BDI has a sensitivity of 91% and a specificity of 91%
  - Positive predictive values were 56% for both with negative predictive values of 97-99%
- There is a PHQ-A questionnaire that was modified for adolescents but has not been validated in the research setting
- Other approved tools include: Kutcher Adolescent Depression Scale (KADS) and the Columbia Depression Scale

GLAD-PC, 2010

TREATMENT STRATEGIES

- Youth depression can be approached using three different methods
  - Active monitoring, psychosocial interventions
  - psychopharmacological interventions
- **Gold standard:** Both psychotherapy and pharmacotherapy
- Educate and counsel families and patients about depression and the options available
- Develop a treatment plan, setting specific goals in key areas of functioning (home, peer and school settings)

GLAD-PC, 2010

ACTIVE MONITORING

- May be appropriate for new onset depression of mild to moderate degree
- Active monitoring includes:
  - Schedule frequent visits
  - Prescribe regular exercise and leisure activities
  - Recommend a peer support group
  - Set self-management goals
  - Follow-up with patients via MyHealth/Telephone
  - Provide patient and family with educational materials

GLAD-PC, 2010

PSYCHOTHERAPY

- Psychosocial counseling (can be done individually or in a group setting) as weekly hour-long sessions for 8 to 20 weeks
  - Barriers: Wait lists, shortage of therapists, finding a personal fit, time intensive
- More than half of youth with mild to moderate depression respond well to psychological counseling

GLAD-PC, 2010

PSYCHOTHERAPY

- **Cognitive Behavioral Therapy (CBT)**
  - Evidence based treatment based on the principle that one's thoughts, feelings, and behaviors affect one another
  - Goal of treatment is to modify the negative thoughts and behaviors through behavioral activation (increase pleasurable activities), cognitive restructuring (reduce negative thoughts) and improving problem-solving
- **Interpersonal Therapy for Adolescents (IPT-A)**
  - Based on the principle that depression occurs in an interpersonal context
  - Goal of treatment is to address the interpersonal problems that may be contributed to or resulting from the patient's depression

GLAD-PC, 2010

PHARMACOTHERAPY

- If the youth's depression does not respond to psychotherapy within 6 to 12 weeks it is a good idea to consider adding medication
- SSRIs are first line treatment
- fluoxetine (Prozac) is the only SSRI approved for use in adolescents with depression
- Prior to starting an adolescent on antidepressant medication, a psychiatric evaluation should be completed
- A good handout for parents on meds: http://www.fda.gov/downloads/drugs/drugsafety/informationbydrugclass/UCM161646.pdf

GLAD-PC, 2010

PHARMACOTHERAPY

- **Optimal dosing**: target changes in severity of symptoms and changes in impairment. Also evaluate side effects. The screening tools are useful when determining if the dose is adequate.
  - The dose should be increased after sufficient time (4-6 weeks) when there is little or no change from baseline
- **Assessing side effects**: If side effects are **mild**, wait 2-5 days to see if they are transient. If side effects are **persistent but tolerable**, continue the dose. If side effects are **moderate**, reduce the dose or change the dosing schedule. If side effects are **severe**, discontinue the medication as soon as possible.

GLAD-PC, 2010

MEDICATION MANAGEMENT

- **When to use a different SSRI**: When a maximum dose is reached and maintained for 4-6 weeks without a response. **Rule of thumb is to try a minimum of 2 SSRIs.**
- **When to use a second-line med**: If a patient fails 2 SSRI's and a course of CBT or IPT. Consult a mental health specialist
- **Maintenance**: Continue on medication therapy for a minimum of 6-12 months following the cessation of symptoms. Some youth may need 2 or more years of tx to prevent relapse.
- **Discontinuation**: Taper medication slowly allowing 1-2 weeks before each tapered dose.

GLAD-PC, 2010

COMMON SSRI SIDE EFFECTS

- Dry mouth
- Constipation
- Diarrhea
- Sleep disturbance
- Sexual dysfunction
- Irritability
- Headache
- Agitation or jitteriness
- Rashes
- Sweating
- Appetite changes
- Disinhibition (risk-taking behaviors, increased impulsivity)
- Less common
  - Serotonin syndrome
  - Akathisia
  - Hypomania
  - Discontinuation syndrome

GLAD-PC, 2010

	Medication	Starting Dose	Increments	Effective Dose	Maximum dose	Common SE
1st line	Fluoxetine (most activating)	10mg daily	10-20mg	20mg	60mg	Headaches GI upset Insomnia, Agitation Anxiety
2nd line	Escitalopram	5mg daily	5mg	10-20mg	20mg	Headaches GI upset Insomnia
	Citalopram	10mg daily	10mg	20mg	60mg	Headaches GI upset Insomnia
	Sertraline (most GI effects)	25mg daily	12.5-25mg	100mg	200mg	Headaches GI upset Insomnia

GLAD-PC, 2010

FDA BLACK BOX WARNING

- 2004 FDA reviewed 24 clinical trials involving more than 4400 children and adolescents who had been prescribed any of nine antidepressants for tx of major depression, anxiety, or OCD
  - No suicides occurred in any of these trials.
  - 2/100 spontaneously reported suicidality in placebo group
  - 4/100 spontaneously reported suicidality in treatment group
- From the FDA warning, prescriptions of antidepressants in youth decreased substantially, in parallel, there has been an increase in completed suicides in youth
- Those who benefit from treatment with an SSRI outnumber those who become suicidal by a ratio of 14:1

GLAD-PC, 2010

SUICIDE PREVENTION

1. **Develop a safety plan and safety proof the home**
   - Most common methods of suicide from greatest to least include firearm, hanging, and suffocation
2. **Ask regularly about suicide**
   - Asking about this will not promote the idea of suicide
3. **Develop a suicide emergency plan**
   - Knowing how to proceed if an individual is suicidal
   - Emergency contact information

GLAD-PC, 2010

SUICIDE PREVENTION

4. **Watch for suicidal behavior**
   - Expressing self-destructive thoughts
   - Drawing morbid or death-related pictures
   - Listening to music that centers around death
   - Playing self-destructing video games
   - Watching books or TV that focus on death
   - Using the internet to browse death related content
   - Giving away possessions
   - Drinking or illicit drug use

GLAD-PC, 2010

ENHANCING CARE FOR ADOLESCENT DEPRESSION

- Barriers to overcome
  - Severe shortages of mental health professionals
  - Inadequate training in mental health issues
  - Inadequate reimbursement & variation in benefit structures
- Recommendations to improve care
  - Implement a system wide guideline policy including screening, diagnosis, treatment, follow-up and referrals
  - Greater use of combination antidepressants and psychotherapy
  - Incorporate the medical home concept into primary care
  - EMR and Web-based tools to support screening, scoring, and resource identification for efficiency
  - Coverage reform

GLAD-PC, 2010

RELEVANCE TO PRIMARY CARE

- The primary care office is the most common place where adolescents receive care
- Gatekeepers to early identification and treatment of behavioral health concerns
- The primary care setting is convenient and encapsulates a comprehensive and multidisciplinary model of care
- Families and patients feel more comfortable in the primary care setting and prefer to receive all of their health care needs with their primary care provider

KEY PRACTICE RECOMMENDATIONS

- Use standardized screening tools to improve identification
- Select brief counseling and evidence-based treatments based on diagnosis and symptom severity
- Monitor symptoms at regular intervals during treatment by using standardized tools
- Depression should be treated until symptom remission is sustained and full role functioning restored
- Adjust treatment if symptom remission is not reached
- Refer to mental health specialist if depression becomes severe and difficult to manage

QUESTIONS?

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APPENDIX B. PRE-EDUCATION SURVEY: SCREENING FOR YOUTH DEPRESSION IN PRIMARY CARE

1. Gender: ☐ Male ☐ Female

2. Age ☐20s ☐30s ☐40s ☐50s ☐60s

3. How many years have you been in practice?

☐0-5 ☐5-10 ☐10-15 ☐15-20 ☐20+

4. Which population(s) do you primarily see? Select all that apply.

☐ Pediatrics

☐ Adolescent

☐ Adults

☐ Geriatrics

5. What is your position?

☐ Physician

☐ Nurse Practitioner

☐ Physician Assistant

☐ Other

6. How important do you feel it is to screen for youth depression?

Not important 1 2 3 4 5 Very Important

7. How often do you screen for youth depression?

Never 1 2 3 4 5 Always

8. Please list any barriers that contribute to screening for youth depression:

9. What would help facilitate universal screening for youth depression?

10. How confident are you in your ability to recognize signs/symptoms of youth depression?

Not confident 1 2 3 4 5 Confident

11. How confident are you in your ability to treat youth depression?

Not confident 1 2 3 4 5 Confident

APPENDIX C. POST-EDUCATION SURVEY: SCREENING FOR YOUTH DEPRESSION IN PRIMARY CARE

Participant name (optional):_____

Check participant type: ☐ Physician ☐ PA, NP ☐ RN ☐ Other (please specify):_____

		Agree	Disagree
1 |	**Were the learning objectives met?**		
	Explore the Guidelines for Adolescent Depression in Primary Care (GLAD-PC) and develop strategies for effective use.		
	Have increased confidence in ability to identify, manage, and provide excellent care to those with youth depression.		
	Identify and apply recommendations for screening, diagnosis, and management for patients with youth depression.		
	Comment:		

2 | **How confident are you in your ability to recognize signs/symptoms of youth depression?**

Not confident 1 2 3 4 5 Confident

3 | **How confident are you in your ability to treat youth depression?**

Not confident 1 2 3 4 5 Confident

4 | **How important do you feel it is to screen for youth depression?**

Not important 1 2 3 4 5 Important

5 | **How useful do you feel the education seminar was regarding youth depression?**

Not useful 1 2 3 4 5 Useful

6 | **In your practice, do you feel you have the instruments available to effectively screen for youth depression?** *Circle one.*

Yes **No**

If NO, what tools do you need to effectively screen for youth depression?

7 | **In your practice, do you feel you have the resources available to effectively treat -youth depression?** *Circle one.*

Yes **No**

If not, what resources do you need to effectively treat youth depression?

8 | **After the educational session, do you feel that your intent to screen for youth depression has increased?** *Circle one.*

Yes **No**

9 | Other comments or suggestions:

APPENDIX D. KEY-INFORMANT INTERVIEW QUESTIONS

1. Multiple studies show that adolescent depression is consistently under-recognized and undertreated in primary care. What do you feel contributes to this finding? Do you feel you have adequate training regarding youth depression?

2. What are the barriers to screening for youth depression? What are the barriers to treatment? What will help combat these barriers? (Examples to address: stigma, space, time, billing, cost, provider ambivalence, culture/race, and socioeconomic status).

3. In the United States, suicide is the third leading cause of death for individuals aged 15 to 24. In North Dakota, suicide is the second leading cause of death for individuals aged 15 to 24. Why do you believe North Dakota has a higher suicide rate for young individuals compared to the nation? How can we help lower this statistic?

4. Is universal screening for youth depression feasible in the primary care setting? Please discuss ways to promote universal screening.

APPENDIX E. IRB APPROVAL

NDSU NORTH DAKOTA STATE UNIVERSITY

March 20, 2015

Molly Secor-Turner
Nursing
Sudro 222J

Re: IRB Certification of Exempt Human Subjects Research:
Protocol #PH15197, "Screening for Youth Depression in Primary Care"

Co-investigator(s) and research team: Kayla Chesley

Certification Date: 3/20/15 Expiration Date: 3/19/18
Study site(s): Essentia Health
Sponsor: n/a

The above referenced human subjects research project has been certified as exempt (category # 2) in accordance with federal regulations (Code of Federal Regulations, Title 45, Part 46, Protection of Human Subjects). This determination is based on the original protocol submission (3/5/15) with consent and questionnaires (received 3/20/15).

Please also note the following:
☐ If you wish to continue the research after the expiration, submit a request for recertification several weeks prior to the expiration.
☐ The study must be conducted as described in the approved protocol. Changes to this protocol must be approved prior to initiating, unless the changes are necessary to eliminate an immediate hazard to subjects.
☐ Notify the IRB promptly of any adverse events, complaints, or unanticipated problems involving risks to subjects or others related to this project.
☐ Report any significant new findings that may affect the risks and benefits to the participants and the IRB.

Research records may be subject to a random or directed audit at any time to verify compliance with IRB standard operating procedures.

Thank you for your cooperation with NDSU IRB procedures. Best wishes for a successful study.
Sincerely,
Kristy Shirley

Kristy Shirley, CIP, Research Compliance Administrator

For more information regarding IRB Office submissions and guidelines, please consult www.ndsu.edu/irb. This Institution has an approved FederalWide Assurance with the Department of Health and Human Services: FWA00002439.

INSTITUTIONAL REVIEW BOARD
NDSU Dept 4000 | PO Box 6050 | Fargo ND 58108-6050 | 701.231.8995 | Fax 701.231.8098 | ndsu.edu/irb

Shipping address: Research 1, 1735 NDSU Research Park Drive, Fargo ND 58102

APPENDIX F. IRB AMENDMENT

NDSU NORTH DAKOTA STATE UNIVERSITY

INSTITUTIONAL REVIEW BOARD
office: Research 1, 1735 NDSU Research Park Drive, Fargo, ND 58102
mail: NDSU Dept. #4000, PO Box 6050, Fargo, ND 58108-6050
p: 701.231.8995 f: 701.231.8098 e: ndsu.irb@ndsu.edu w: www.ndsu.edu/irb

Date Received: received 9/8/2015

IRB Protocol #: PH15197

Protocol Amendment Request Form

Changes to approved research may not be initiated without prior IRB review and approval, except where necessary to eliminate apparent immediate hazards to participants. Reference: *SOP 7.5 Protocol Amendments.*

Examples of changes requiring IRB review include, but are not limited to changes in: investigators or research team members, purpose/scope of research, recruitment procedures, compensation strategy, participant population, research setting, interventions involving participants, data collection procedures, or surveys, measures or other data forms.

Protocol Information:

Protocol #: **PH15197** Title: **Screening for Youth Depression in Primary Care**

Review category: ☒ Exempt ☐ Expedited ☐ Full board

Principal investigator: **Molly Secor-Turner** Email address: **molly.secor-turner@ndsu.edu**
Dept: **Nursing**

Co-investigator: **Kayla Chesley** Email address: **kayla.chesley@ndsu.edu**
Dept:

Principal investigator signature, Date: Molly Secor-Turner (email) 9/8/2015

In lieu of a written signature, submission via the Principal Investigator's NDSU email constitutes an acceptable electronic signature.

Description of proposed changes:

1. Date of proposed implementation of change(s)*: **As soon as approved**
   * *Cannot be implemented prior to IRB approval unless the IRB Chair has determined that the change is necessary to eliminate apparent immediate hazards to participants.*

2. Describe proposed change(s), including justification:
   In order to assess the process of implementing the screening tool, we propose adding individual interviews with providers who used the screening tool at Essentia Health. Questions will ask participants their experience using the screening tool, if they are capturing more adolescents with depression, if they have increased referrals, and other aspects regarding the screening process. No identifiable information will be collected from participants. All questions asked will be about the process of using the screening tool.

3. Will the change(s) increase any risks, or present new risks *(physical, economic, psychological, or sociological)* to participants?
   ☒ No
   ☐ Yes: *In the appropriate section of the protocol form, describe new or altered risks and how they will be minimized.*

4. Does the proposed change involve the addition of a vulnerable group of participants?
   Children: ☒ no ☐ yes – include the *Children in Research* attachment form
   Prisoners: ☒ no ☐ yes – include the *Prisoners in Research* attachment form
   Cognitively impaired individuals: ☒ no ☐ yes*
   Economically or educationally disadvantaged individuals: ☒ no ☐ yes*

   **Provide additional information where applicable in the revised protocol form.*

5. Does the proposed change involve a request to waive some or all the elements of informed consent or documentation of consent?
   ☒ no
   ☐ yes – Attach the *Informed Consent Waiver or Alteration Request.*

6. Does the proposed change involve a new research site?
   ☒ no
   ☐ yes

If information in your previously approved protocol has changed, or additional information is being added, incorporate the changes into relevant section(s) of the protocol. Draw attention to changes by using all caps, asterisks, etc. to the revised section(s) and attach a copy of the revised protocol with your submission. *(If the changes are limited to addition/change in research team members, research sites, etc. a revised protocol form is not needed.)*

Impact for Participants (future, current, or prior):

1. Will the change(s) alter information on previously approved versions of the recruitment materials, informed consent, or other documents, or require new documents?
   ☒ No
   ☐ Yes - attach revised/new document(s)

2. Could the change(s) affect the willingness of *currently* enrolled participants to continue in the research?
   ☒ No
   ☐ Yes - describe procedures that will be used to inform current participants, and re-consent, if necessary:

3. Will the change(s) have any impact to *previously* enrolled participants?
   ☒ No
   ☐ Yes - describe impact, and any procedures that will be taken to protect the rights and welfare of participants:

----------FOR IRB OFFICE USE ONLY--------

Request is: ☒ **Approved** ☐ **Not Approved** **Review:** ☒ **Exempt, category#:** 2 ☐ **Expedited method, category #** ____ ☐ **Convened meeting, date:** ____ ☐ **Expedited review of minor change**	
IRB Signature: Kristy Shirley	**Date:** 9/10/2015
Comments:	

APPENDIX G. PATIENT HEALTH QUESTIONNAIRE (PHQ)

PHQ-2

Over the past 2 weeks, how often have you been bothered by any of the following problems? Use X to mark answer.	Not at all (0)	Several days (1)	More than half the days (2)	Nearly every day (3)
Little interest or pleasure in doing things?				
Feeling down, depressed, or hopeless?				

PHQ-9

Over the past 2 weeks, how often have you been bothered by any of the following problems? Use X to mark answer.	Not at all (0)	Several days (1)	More than half the days (2)	Nearly every day (3)
Little interest or pleasure in doing things				
Feeling down, depressed, or hopeless				
Feeling tired or having little energy				
Poor appetite or overeating				
Feeling bad about yourself or that you are a failure or have let yourself or your family down				
Trouble concentrating on things, such as reading the newspaper or watching television				
Moving or speaking so slowly that other people could have noticed, or being so figety or restless that you have been moving around a lot more than usual				
Thoughts that you would be better off dead, or of hurting yourself				

* 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? Circle one (not difficult at all, somewhat difficult, very difficult, or extremely difficult)

PHQ-A

The PHQ-A has the same exact same 10 questions as the PHQ-9 above, but has one more added section with the following three questions:

In the past year have you felt depressed or sad most days, even if you felt okay sometimes?	Yes	No
Has there been a time in the past month when you have had serious thoughts about ending your life?		
Have you ever, in your whole life, tried to kill yourself or made a suicide attempt?		

APPENDIX H. BECK DEPRESSION INVENTORY-II (BDI-II)

0. I do not feel sad 1. I feel sad 2. I am sad all of the time and I cant snap out of it 3. I am so sad and unhappy that I cant stand it	0. I make decisions about as well as I ever could 1. I put off making decisions more than I used to 2. I have greater difficulty in making decisions more than I used to 3. I cant make decisions at all anymore
0. I am not particularly discouraged about the future 1. I feel discouraged about the future 2. I feel I have nothing to look forward to 3. I feel the future is hopeless and that things cannot improve	0. I don't feel that I look any worse than I used to 1. I am worried that I am looking old or unattractive 2. I feel there are permanent changes in my appearance that make me look unattractive 3. I believe that I look ugly
0. I do not feel like a failure 1. I feel I have failed more than the average person 2. As I look back on my life, all I can see is a lot of failures 3. I feel I am a complete failure as a person	0. I can work about as well as before 1. It takes an extra effort to get started at doing something 2. I have to push myself very hard to do anything 3. I cant do any work at all
0. I get as much satisfaction out of things as I used to 1. I don't enjoy things the way I used to 2. I don't get real satisfaction out of anything anymore 3. I am dissatisfied or bored with everything	0. I can sleep as well as usual 1. I don't sleep as well as I used to 2. I wake up 1-2 hours earlier than usual and find it hard to get back to sleep 3. I wake up several hours earlier than I used to and cannot get back to sleep
0. I don't feel particularly guilty 1. I feel guilty a good part of the time 2. I feel quite guilty most of the time 3. I feel guilty all of the time	0. I don't get more tired than usual 1. I get tired more easily than I used to 2. I get tired from doing almost anything 3. I am too tired to do anything
0. I don't feel I am being punished 1. I feel I may be punished 2. I expect to be punished 3. I feel I am being punished	0. my appetite is no worse than usual 1. my appetite is not as good as it used to be 2. my appetite is much worse now 3. I have no appetite
0. I don't feel disappointed in myself 1. I am disappointed in myself 2. I am disgusted with myself 3. I hate myself	0. I haven't lost much weight, if any, lately 1. I have lost more than five pounds 2. I have lost more than ten pounds 3. I have lost more than fifteen pounds
0. I don't feel I am any worse than anybody else 1. I am critical of myself for my weaknesses or mistakes 2. I blame myself all the time for my faults 3. I blame myself for everything that happens	0. I am no more worried about my health than usual 1. I am worried about physical problems like aches, pains, upset stomach, or constipation 2. I am very worried about physical problems and its hard to think of much else 3. I am so worried about my physical problems that I cannot think of anything else
0. I don't have any thoughts of killing myself 1. I have thoughts of killing myself, but would not carry them out 2. I would like to kill myself 3. I would kill myself if I had the chance	0. I have not noticed any recent change in my interest in sex 1. I am less interested in sex than I used to be 2. I have almost no interest in sex 3. I have lost interest in sex completely
0. I am more irritated by things than I ever was 1. I am slightly more irritated now than usual 2. I am quite annoyed or irritated a good deal of the time I feel irritated all the time	0. I don't cry any more than usual 1. I cry more now than I used to 2. I cry all of the time 3. I used to be able to cry, but now I cant even though I want to
0. I have not lost interest in other people 1. I am less interested in other people than I used to be 2. I have lost most of my interest in other people I have lost all of my interest in other people	**SCORING:** a. 1 to 10 points, these ups and downs are considered normal, b. 11 to 16 points, mild mood disturbance, c. 17 to 20 points, borderline clinical depression, d. 21 to 30 points, moderate depression, e. 31 to 40 points, severe depression, f. over 40, extreme depression

APPENDIX I. MOOD AND FEELINGS QUESTIONNAIRE- SHORT VERSION

To code, please use an X for each statement **In the past two weeks:**	**Not True**	**Sometimes**	**True**
I felt miserable or unhappy			
I didn't enjoy anything at all			
I felt so tired I just sat around and did nothing			
I was very restless			
I felt I was no good anymore			
I cried a lot			
I found it hard to think properly or concentrate			
I hated myself			
I was a bad person			
I felt lonely			
I thought I could never be as good as other kids			
I did everything wrong			
I thought nobody really loved me			

APPENDIX J. FLYER EXAMPLE

Screening for Youth Depression in Primary Care

Date/Time: June 26, 2015 12:00 — 1:00 pm

Location: Essentia Health - West Fargo Clinic
1401 13th Avenue East
West Fargo, ND

Presenter: Kayla Chesley, RN, BSN

Learning Objectives

1. Explore the Guidelines for Adolescent Depression in Primary Care (GLAD-PC) and develop strategies for effective use.
2. Have increased confidence in ability to identify, manage, and provide excellent care to those with youth depression.
3. Identify and apply recommendations for screening, diagnosis, and management for patients with youth depression.

Target Audience

All members of the health care team

Faculty Disclosure

To comply with ACCME Standards for Commercial Support, Essentia Health requires faculty members to disclose the existence of any relevant financial interest or other relationship with companies whose products or services are related to the subject matter of the presentation.

All planners and faculty have submitted signed disclosure forms indicating that they do not have actual or potential conflicts of interest that might have a direct bearing on the subject matter of this CME activity.

Accreditation

Essentia Health is accredited by the Minnesota Medical Association (MMA) to provide continuing medical education for physicians.

Essentia Health designates this live activity for a maximum of 1.0 *AMA PRA Category 1 Credit™*. Physicians should only claim credit commensurate with the extent of their participation in the activity.

This program offers 1.0 contact hours for continuing education. Most medical professional organizations accept *AMA PRA Category 1 Credits™*. Go to your respective organization's website for more detailed information regarding credit requirements.

NOTE: If you have any special mobility, vision, or hearing needs, please contact Andrea Carlson, CME Education Specialist at Andrea.Carlson2@essentiahealth.org or 218-855-5264.

Essentia Health

Continuing Medical Education

APPENDIX K. EXECUTIVE SUMMARY

Depression is a critical problem both locally and nationally. According to the World Health Organization (2012), depression affects approximately 350 million people worldwide and is the leading cause of disability, and results in approximately one million people who take their own lives by suicide each year. The burden of depression and other mental conditions is on the rise worldwide. Depression is the leading cause of work absenteeism and compromised productivity in adults (National Institute of Mental Health, 2014). Unfortunately, depression often starts at a young age. Half of all lifetime cases of mental illness begin before the age of 14 (Hagan, Shaw, & Duncan, 2008).

Youth depression is a serious mental health disorder that can have detrimental consequences. Depression in youth is linked to increased morbidity and mortality along with risk taking behavior. Mental health and mood disorders are the leading cause of illness and burden in the youth population (Patel, 2013). The lifetime prevalence that youth will experience a depressive disorder before the age of 20 is approximately 20 percent (Pereira, Egan & Stevermer, 2010). The rate of depression increases significantly between the ages of 13 and 18, with 11 percent of youth experiencing a depressive disorder by the age of 18 (Gray & Dihigo, 2015). Nationally, suicide is the third leading cause of death for individuals aged 15 to 24 and the second leading cause of death for individuals aged 25 to 34. In the state of North Dakota, suicide is now the first leading cause of death for individuals aged 15 to 24. Unfortunately, depression remains underdiagnosed and undertreated, with only about 50 percent of youth with depression being diagnosed before they reach adulthood (Zuckerbrot, Cheung, Jensen, Stein, & Laraque, 2007).

This project was created to improve the mental health of youth through increasing universal screening in the primary care setting, along with improving the confidence and ability of the primary care provider to diagnose and treat youth depression. Regarding concerns facing youth depression, Healthy People 2020 (U.S. Department of Health and Human Services, 2014) identified goals to improve youth mental health services through prevention and ensuring access to quality mental health services, which included: reducing the proportion of youth who experience major depressive episodes, to reduce suicide attempts by youth, and to increase youth depression screening by primary care providers.

There are many risk factors that contribute to youth depression, including family history, environmental factors, acute or chronic health conditions, death of a loved one or parent, substance use, sexual abuse, physical abuse, emotional abuse or neglect, divorce, family conflict, low socioeconomic status, racial and ethnic minorities, and being female.

A thorough literature review was conducted to examine screening practices for youth depression with identification tools and standards of care in the primary care setting. Inclusion criteria included literature regarding primary care, and the youth population aged 13-24 who experienced depression. Articles that were not relevant to youth depression, primary care, and published prior to 2001 were excluded. The highlights of the literature review covered relevance to primary care and various screening tools.

The purpose of this practice improvement project was to increase awareness of the significant problem regarding youth depression in the community and across the nation. Through primary care provider education the intention was to increase the confidence and knowledge of primary care providers in identifying and managing youth depression. Primary care provider education was launched through collaboration with Essentia Health, providing education

regarding youth depression, which stressed the importance of universal screening, the importance of identifying youth depression early, and various treatment modalities.

Implementation of the practice improvement project started on June 26, 2015 after approval from the Essentia Health continuing medical education committee. Flyers were placed in various places around Essentia Health to advertise the project, along with an email notification of the project details, dates, and times inviting providers to attend and offering them one continuing medical education credit. The primary care provider education was presented through a PowerPoint lunch educational session at five different Essentia Health primary care locations from 12:00pm to 1:00pm, including the West Fargo clinic, South University clinic, Moorhead clinic, West Acres clinic, and the Wahpeton clinic.

Key informant interviews were selected to help aid the project with information regarding the pressing issue of youth depression and to to determine the effectiveness and various elements of universal screening in the primary care setting. Individuals were selected who have first hand experience, knowledge and understanding regarding the subject of youth depression and possess the ability to provide insight on the problem the community faces with youth depression along with recommendations for solutions. The face-to-face key informant interviews took place at three separate times in December of 2015 and lasted approximately 45 minutes. The names of the providers selected include Dr. Lara Lunde, M.D., Heidi Fitzgerald-Olson, PA-C, and Penni Weston, MSN, C-NP.

To evaluate the primary care provider education, a pre-education survey and post-education survey were completed. The surveys were used to determine if the education was effective, and if there was an increase in intent to screen and confidence in identifying and managing youth depression. Data through the pre and post PowerPoint education were obtained

after each of the five educational sessions. Once the educational session was completed, the data were compiled together in an Excel spreadsheet and sent to a statistical consultant at North Dakota State University for descriptive analysis. There were a total of 15 primary care providers who attended the educational sessions. The main findings show that providers felt screening for depression was more important after they had the education, and that the providers had an increase in confidence in their ability to recognize and treat youth depression after the educational session. All providers who attended the educational session felt that the education was either useful or very useful. Also, 100 percent of the providers felt the objectives of the educational PowerPoint were met.

At the end of the key-informant interview process the results were evaluated for themes and similarities. The data were analyzed to identify barriers, assets, and other content related to the screening process and management of youth depression. Qualitative data were retrieved through the three key informant interviews and overall highlighted the need for increased and improved mental health services for youth in the area, along with increased awareness regarding the significance of youth depression.

All three of the key-informants felt that it was feasible to screen for youth depression in primary care and that this should be done universally. The main barriers to screening identified were time, nursing demands, provider ambivalence, parents, and lack of provider knowledge and education. The recommendations found from the key-informant interviews included making screening for youth depression a universal part of the rooming process, increased provider awareness and knowledge regarding youth depression through education and training, school programs to instill resiliency and healthy coping mechanisms in youth, insurance reform, increased provider and mental health awareness statewide.

The main limitations from the project were the small number of participants (15) and that the project was only implemented at one health system in North Dakota. Given the significant problem of youth depression and the problems that follow, future research is warranted. Nurse practitioners in the primary care setting care for a wide variety of patient populations and need to be equipped to assess and manage youth with mental health concerns. It is essential that nurse practitioners in primary care continue to stay up to date with continuing education regarding the youth population, especially in terms of health promotion and disease prevention for the leading causes of morbidity and mortality. Family nurse Practitioners are in an excellent position to advocate for improved mental health in the youth population and to create change through appropriate identification, assessment, and early treatment initiation of youth depression. Through advanced planning and preparation, nurse practitioners can lead the way to combat youth depression and positively impact the future health of the Nation's youth.