AN IMPROVED APPROACH TO SCREENING OF EATING DISORDER RISK IN A PEDIATRIC PSYCHIATRIC CARE FACILITY

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TABLE OF CONTENTS

1. AN IMPROVED APPROACH TO SCREENING OF EATING DISORDER RISK IN A PEDIATRIC PSYCHIATRIC CARE FACILITY 1

Screening Adolescents for Eating Disorder Risk 1
Significance of Problem 2
Scope of Problem in the Community 5
Problem: Screening Prevalence 6
Purpose 7
Benefit to Facility 7

2. REVIEW OF LITERATURE 9

Introduction 9
Eating Disorders 11
Obesity 11
Bulimia Nervosa (BN) 11
Anorexia Nervosa (AN) 12
Binge Eating Disorder (BED) 12
Screening Methods 13
SCOFF Questionnaire 13
Alternative Screening Tools 14
Strengths and Limitations in Literature to Planned Practice Change 16
Summary and Discussion of Practice Change 17

3. METHODOLOGY 20

Theoretical Framework 20
Agency Description 23
Prior Screening Method on Site 24
Project Implementation 25
SMART Goals 33

4. RESULTS 37

Introduction 37
Discussion 40
Lessons Learned 42
Limitations 43
Recommendations for Future Practice 45
Conclusion 46

TABLE OF CONTENTS CONTINUED

5. MEETING DNP ESSENTIALS 48

Introduction 48
DNP Essentials 48
Essential I: Scientific Underpinnings for Practice 48
Essential II: Organizational and Systems Leadership for Quality Improvement and Systems Thinking 50
Essential III: Clinical Scholarship and Analytical Methods for Evidence-Based Practice 51
Essential VI: Interprofessional Collaboration for Improving Patient and Population Health Outcomes 52
Essential VIII: Advanced Nursing Practice 53
Project Impact on Future Career 54

REFERENCES CITED 57

APPENDICES 61

APPENDIX A: SWOT Analysis 62
APPENDIX B: SCOFF Questionnaire 64
APPENDIX C: Project Timeline 66

LIST OF TABLES

Table Page

1. Weekly Project Steps 30

2. Variable Screening and Referral Rates 39

LIST OF FIGURES

Figure Page

1. Screened Admissions....38

2. Positive Referrals....39

ABSTRACT

Eating disorders (EDs) have emerged as a prominent but underrecognized problem in the pediatric population from lack of screening. Reviewed were multiple screening tool options for risk of EDs to utilize in the admission assessment at a pediatric psychiatric care facility, resulting in the use of the Sick-Control-One-Fat-Food (SCOFF) questionnaire. Additionally, screening on admission was moved from nursing staff to that of the project's population—the medical group of nurse practitioners (NPs) who facilitated referrals based on results. The goals of this quality improvement project included a 100% screening rate for all patients aged 6 to 18 years admitted to the facility and a subsequent 100% referral rate for all positive screenings to psychiatry and the registered dietitian. These changes were implemented at the facility over eight weeks with weekly data collection and analysis comparing weekly census reports to SCOFF screened admissions and positive screenings to the number of referrals made. Every two weeks in the implementation, Plan-Do-Study-Act (PDSA) cycles were used in meetings with the medical group NPs to address and overcome barriers in implementation. The results showed overall improved screening rates, but the goals of 100% screening and 100% referral rates were not met. An average of 88% screening rate and 85% referral rate for positive screenings were achieved. Findings of this study inform future practice to utilize a risk for EDs screening tool that is valid, reliable, brief, and easy to score implemented in similar populations. Additionally, more time should be allowed in implementation—at least 12-weeks to allow for more data collection and PDSA cycle completions.

CHAPTER ONE

AN IMPROVED APPROACH TO SCREENING OF EATING DISORDER RISK IN A PEDIATRIC PSYCHIATRIC CARE FACILITY

Screening Adolescents for Eating Disorder Risk

Eating disorders (EDs) are a prevalent threat with known morbidity and mortality to the pediatric population aged 6 to 18 in the United States and globally, especially in those suffering from comorbid psychiatric conditions, which often dominate the attention of providers and caregivers. However, the signs and symptoms of EDs are not always readily apparent. School-aged to adolescence is a vulnerable developmental period with increased risk factors associated with the development of EDs, including peer pressure, social media stigmas of body image, and coercion to be thin. The lifetime prevalence of eating disorders is only 0.5% to 2% for anorexia nervosa (AN), 0.9%–3% for bulimia nervosa (BN), and 4.8% for EDs not otherwise specified (Campbell & Peebles, 2014). Screening for EDs is also substandard and general practitioners (GPs) commonly under detect EDs with less than one in ten cases of BN and less than 50% of AN and subclinical AN being detected in all age groups (Cadwallader et al., 2016). Increased screening performed by providers to better serve this young community and promote their health is needed. Lack of and sporadic screening for EDs in the school-aged to adolescent pediatric population is the problem that guides the purpose of this project to increase screening of EDs in the pediatric population aged 6 to 18 to 100% in a pediatric psychiatric care facility.

Significance of Problem

Three overarching categories of EDs have been identified by the National Institute of Mental Health (NIMH) (2017): 1) anorexia nervosa, 2) bulimia nervosa, and 3) binge eating disorder (BED). The incidence of EDs in the adolescent population aged 13 to 18 years is 2.7%; rates among females are more than double that of males (3.8% vs. 1.5%, respectively) (NIMH, 2017). ED prevalence follows children into adulthood with a reported median age of onset for BED at 21 years old and for both AN and BN at 18 years old (NIMH, 2017). Multiple complications result from the effects of EDs occurring in every organ system and at any weight. Medical complications associated with EDs are either a direct result of physiologic adaptations made by the body in response to malnutrition or as a result of unhealthy weight management behaviors (Golden et al., 2016). Cardiac complications are common in patients with EDs and present as bradycardia, hypotension, arrhythmias, a risk for cardiomyopathy among patients who purge, and mitral valve prolapse and pericardial effusion among those with AN (Campbell & Peebles, 2014). Electrolyte disturbance may also occur from vomiting, laxative abuse, or diuretic use and may lead to further complications such as hyperchloremic metabolic alkalosis, refeeding syndromes, and cardiac arrhythmias (Campbell & Peebles, 2014). Further complications include pancreatitis, gallstones, amenorrhea, osteoporosis, and psychiatric illnesses that are often comorbid in EDs including depression, anxiety, obsessive-compulsive disorder, posttraumatic stress disorder, personality disorders, substance abuse disorders, and self-injurious behaviors (Golden et al., 2016; Campbell & Peebles, 2014). Data from the National Comorbidity Survey Replication (NCS-R) shows lifetime comorbidity to any mood disorder was 42.1% for AN, 70.7% for BN, and 46.4% for BED (NIMH, 2017). AN's mortality rates, 5–6%, are the highest

of any psychiatric disorder (Campbell & Peebles, 2014). Mortality rates for BN are approximately 2% but are associated with increased lifetime suicidality and suicide attempts (Campbell & Peebles, 2014). Substance use disorders also occur comorbidly at higher rates with EDs at 27% in AN, 36.8% in BN, and 23.3% in BED (Campbell & Peebles, 2014).

Vulnerable populations for EDs include the female pediatric population and typically account for most ED patients. However, males also makeup 10% of overall cases and, in some studies, up to 25% (Campbell & Peebles, 2014). In younger populations, ED diagnoses differ and have increased prevalence among boys with a 6:1 female to male ratio of ED diagnosis compared to the 10:1 ratio ED diagnosis among adults (Campbell & Peebles, 2014). Overweight children and adolescents have an elevated risk for EDs and delayed diagnosis in addition to adolescents with chronic illness, especially those with insulin-dependent diabetes mellitus (Campbell & Peebles, 2014). Factors most commonly associated with EDs epidemiology are female sex, younger age, having experienced sexual or physical abuse, participation in aesthetic or weight-oriented sports, and heritability; additionally, ethnicity, socioeconomic status, education, and urbanicity do not have a strong effect (Mitchison & Hay, 2014).

EDs are a costly problem and one with increasing prevalence for hospitalization and sequelae in those it affects. EDs account for some of the deadliest mental illnesses, second only to opioid overdose (National Association of Anorexia Nervosa and Associated Disorders [ANAD], 2021). There are 10,200 deaths each year as a direct result of EDs, averaging out to about one death every 52 minutes (ANAD, 2021). Economic costs of eating disorders were estimated at $64.7 billion in the fiscal year of 2018 to 2019, with an equivalent of $11,808 per affected person (Streatfeild et al., 2021). In the National Institutes of Health's (NIH) "Estimates

of Funding for Various Research Condition, and Disease Categories,", eating disorder research expenditure for 2020 was an estimated $49 million compared to anxiety disorders at $236 million, depression at $602 million, and posttraumatic stress disorder at $143 million. This uptake in prevalence and cost associated with EDs, in contrast to minimal research funding compared to other psychiatric illnesses, is cause for concern.

Current processes for screening EDs consist of a patient seeking care through a primary care provider (PCP) before getting referred to a mental health specialist or placement in the hospital. Screening may occur at the PCP but is often inconsistent due to a lack of PCP knowledge and comfort with the process, commonly leading to the negation of screening altogether.

Identification and screening through this process are inadequate in design and negates the purpose of screening to detect disease risk at an early stage causing a delay in care.

Screening has the purpose of identifying risk for disease development or presence. Success in treatment and recovery with an ED depends on early detection and identification and is vital in preventing medical complications that could result in death (Rindahl, 2017). Furthermore, missed identification of ED risk can result in patient discharge from a facility and seeking care elsewhere, causing the patient further cost burden. No national standards for eating disorder screenings exist for the pediatric population in the United States in primary care offices, clinics, or schools. Lack of in-place standards and adequate systems for ED screenings leaves the vulnerable pediatric population with a comorbid psychiatric disorder and their families with financial and health burdens as delayed identification and treatment allow for ED progression.

Scope of Problem in the Community

One of the medical group NPs provided personal communication on the issue that demonstrated EDs' extent in the community at the pediatric psychiatric hospital in Montana, where this project will be implemented. She reports 99% of the patient population are from Montana communities, and in a recent email she received from the hospital's CEO, the facility had helped to serve over 4,000 children in the past year alone (personal communication, September 15, 2021). She reported that four years ago, no ED screening was in place at the facility, and EDs were not on "anyone's radar" unless a child presented with explicit identifiers such as low body mass index (BMI) or reported restricting, purging, or bingeing behaviors (personal communication, September 15, 2021).

Around two years ago, she said some steps in the right direction were made when a former registered dietician (RD) at the facility attended a small internship at the Eating Recovery Center in Washington and came back with three questions to ask patients on nursing admission to help identify EDs. According to the medical group NP, the three questions seemed to flag more kids and at least "put them on the radar," but also indicated they were not always completed consistently by nursing staff (personal communication, September 15, 2021).

The medical group NP stated that there has been an increase in the number of pediatric patients admitted to the facility with possible EDs and referrals from hospital emergency departments in the past year and a half. There was expressed concern that, currently, the facility is not equipped to care for severe ED cases. Many Emergency Department patient referrals are already in a state of severe unstable illness from the extent of their EDs with electrolyte imbalance and other comorbid conditions not appropriate for care at the facility. The medical

group NP stated that due to the increase in referrals and admissions, a consistent EDs screening process in the admission for the facility is needed to ensure proper care delivery through resources available there or at a more acute facility. Further, screening and early risk identification would expedite referral to the more acute facilities and prevent delay in care and further disease progression since waitlists are often over six months long.

Vulnerabilities for EDs at the facility can be identified as a young school-aged to adolescent population with an overall stigma related to mental health disorders and treatment, presence of comorbid mental health diagnosis, inconsistent admission screening methods, and location in a rural state with limited psychiatric resources. Improved EDs prognosis for the pediatric population at the facility is possible with a consistent early screening method to detect risk and expedite treatment with available resources or referral to proper care early in the disease course. Before implementing this project, there has been no consistently used screening performed for EDs at the facility; as a result, SWOT analysis was performed for addition of a new consistent screening measure (Appendix A).

Problem: Screening Prevalence

Admission screenings for EDs risk are not performed consistently at the facility, leading to the missed opportunity to identify EDs early in development and prevent an overlooked diagnosis. Current EDs screening consists of three questions in the nursing admission assessment that are not always asked routinely. The nursing staff asked the following three questions: “Does your weight affect the way you feel about yourself?” “Are you satisfied with your eating patterns?” “Do you eat differently when you are by yourself?” Saying yes to two or more of these questions results in positive flagging and notification of the medical or psychiatric care

teams or the RD. Problems exist with this current process since the three questions are asked by nursing staff on patient admission in a one-on-one manner on very busy units where the nurse may be responsible for multiple patients and admissions at once, so the questions may not always be completed. The facility has a standard for EDs screening and a multidisciplinary care team in-house with medical, psychiatric, and nutrition services, but in its current state, it does not provide adequate EDs risk identification due to inconsistency, and thus, cannot utilize its resources or provide the proper referral effectively.

Purpose

Inconsistent screening of EDs on admission to the facility is the problem; therefore, the purpose of this project is to improve the screenings of EDs to 100% on patient admission to inpatient and residential units at the facility by the end of its implementation with a subsequent goal of a 100% referral rate for those screenings identified to be positive. Inserting an EDs risk screening tool into the admission assessment of the medical NP group, who act as the GPs at the facility, will bring about proper identification of EDs risk for each patient at admission and provide an opportunity for early disease detection and treatment.

Benefit to Facility

Unparalleled opportunity exists to improve and expand pediatric psychiatric care in Montana to include EDs. The facility is a central hub for pediatric psychiatric care built on a mission statement of “to heal, help, and inspire hope” and a vision “to be Montana's leading resource in children's mental health, family well-being, and genomic care” (SCH, 2021). The addition of a consistent EDs risk screening assessment will further this mission and vision. Early

detection of EDs risk through consistent admission screening will allow early intervention, disease progression prevention, and prompt referral where warranted. Screening for the risk of EDs and utilizing available treatment options internally reduces costs for the patient and increases revenue gains for the facility. Campbell and Peebles (2014) identify the most effective treatment options for EDs being family-based treatment (FBT) and cognitive-behavioral therapy (CBT), with FBT being particularly effective in those 12 years of age and under, while CBT has research proving its effectiveness in adolescents. CBT and FBT are both seen as long-term management options, and although they do not have a defined time frame, they typically require multiple sessions providing long-term earnings opportunities. Both CBT and FBT are available in-house at the facility.

CHAPTER TWO

REVIEW OF LITERATURE

Introduction

A review of the literature was performed to glean comprehensive knowledge and understanding of the magnitude of the disease process in EDs and their screening. Multiple sources were searched, including the National Eating Disorders Association (NEDA), NIMH, NIH, American Academy of Pediatrics (AAP), American Academy of Family Physicians (AAFP), Medscape, CINAHL, and Centers for Disease Control (CDC). Furthermore, a complete search of peer-reviewed research utilizing databases from PubMed, Google Scholar, CINAHL, Cochrane Databases, ProQuest, and Medscape was completed. These databases helped research screening recommendations, treatments, incidence and prevalence of EDs, definitions of EDs, and financial implications in practice.

In large part, evidence shows that only a minute percentage of EDs in any age group are identified due to lack of screening. Because of their definition as mental health disorders according to DSM-V criteria, EDs are often not noticed in primary care settings (Campbell & Peebles, 2014). Mental illness is any mental, behavioral, or emotional disorder (NIMH, 2019). To better differentiate and include EDs among mental health disorders, a review of mental illness was performed and showed less than half of individuals are consulted for any mental health disease (NIMH, 2019).

Screening rates at this level are of great concern. EDs becoming lost amid a myriad of other mental illnesses in any care setting is potentially disastrous as alone, EDs are among the

deadliest of mental illnesses (ANAD, 2021). Considering that EDs affect 9% of the US population, or 28.8 million individuals, the fallout potential from their effect is of great significance (ANAD, 2021). AN is known to have the highest mortality rate of any mental health disorder and additionally, BN has shown a higher rate for suicidality and attempts when compared to other EDs (Campbell & Peebles, 2014). Overall, around 26% of individuals afflicted with EDs attempt suicide (ANAD, 2021). Finally, when considering EDs among other mental illness identification, it is important to know that EDs are often comorbid to other psychiatric disorders such as depression and anxiety, which often leads to their overshadowing and further difficulty in their recognition and treatment.

In addition to the deficiency of screening for EDs and difficulty in their recognition surrounded by other mental illnesses, comfort in the use of their screening tools is also lacking in providers. Primary care settings and GPs are the most common resources patients will seek for the care of health-related concerns and often the first place they go for treatment of EDs and their assorted presentations (Rowe, 2017). Most primary care GPs, however, feel unprepared in their ability to recognize and manage EDs and leave them to the care of specialists, but due to prognostic significance in early detection, GPs should feel confident in their ability to detect EDs (Johns et al., 2019; Rowe, 2017). More training and support of GPs is indicated as they may encounter EDs in their practice. Screening for EDs begins the process as the first step for identification and acts as a launch point for care and referrals to appropriate resources by the GPs in their management. To improve screening rates and address training and support in GP's understanding of EDs in their practice, it is also important to identify the main EDs that are likely to present in a care setting.

Eating Disorders

Obesity

BMI is the determining factor of obesity in adolescents and is defined as being above the 95th percentile of the same sex and age (CDC, 2018). Misinterpreted recommendations to patients by providers raise concerns for the development of EDs (Golden et al., 2016). Most adolescents with EDs did not have obesity prior, but some teenagers may develop EDs in an effort to lose weight (Golden et al., 2016). Additionally, if adolescents achieve a weight goal with EDs, they become further engrossed with weight loss and can develop a deepened body image distortion (Golden et al., 2016).

Bulimia Nervosa (BN)

DSM-V criteria for BN incorporate objective binge eating within a two-hour period defined as a larger amount of food consumption in a similar time frame than most people (Allen et al,, 2013). Identification of BN can also be seen in short periods of binge eating with feelings of inability to stop eating (NEDA, 2021b). Individuals with BN will attempt to prevent weight gain by induction of vomiting, fasting, abuse of medications and laxatives, and excessive exercise (Allen et al., 2013). Binge eating with subsequent weight preventative behavior must be present once weekly for at least three months to meet the criteria for diagnosis. Signs and symptoms are the development of food rituals, skipping meals, being uncomfortable when eating around others, swelling in the cheek or jaw, disappearing after eating, and frequent trips to the restroom after eating (NEDA, 2021b). Further signs include dental discoloration, enamel erosion,

callus development of dorsum of hands, social withdrawal, bloating from fluid retention, frequent dieting, and extreme mood swings (NEDA, 2021b).

Anorexia Nervosa (AN)

The distorted body image conception of individuals with AN is that they are overweight, even when they are underweight. AN most frequently is seen in adolescents, but there is an increasing number of children being diagnosed. DSM-V criteria for AN include restricting caloric intake relative to requirements needed causing a significantly low body weight for age, sex, developmental trajectory, and physical health (NEDA, 2018a). Further DSM-V criteria include an intense fear of weight gain or becoming overweight even if underweight, and disturbance to how one's body weight or shape is experienced (NEDA, 2018a). AN creates a cycle of starvation in which the body is denied essential nutrients for normal function, causing a forced slowdown of all processes for the conservation of energy and results in serious medical consequences (NEDA, 2018a). Adolescents with AN have a 10 times greater risk of dying than their same-aged peers (NEDA, 2018a).

Binge Eating Disorder (BED)

BED differentiation presents some difficulty as it mimics depression in many ways, and it does not present physically in a distinct way. BED is characterized by repeating episodes of consumption of a large amount of food to the point of discomfort, often in a short period, feeling of loss of control during the binge, and not regularly using unhealthy compensatory measures to counter the binge (NEDA, 2018b). There are five criteria for diagnosis of BED. The first criteria are episodes of binge eating, which is eating a more significant food sum than most people would in a discrete amount of time with a sense of lack of control and overeating during the

binge episode (NEDA, 2018b). Criteria two is binge eating episodes associated with three or more of the following: eating more rapidly than usual, eating until physically uncomfortable, eating large amounts when not hungry, eating alone to avoid embarrassment, and feeling disgusted with oneself. The remaining criteria include marked distress over the eating, bingeing on average at least once a week for three months, and binge eating not associated with the recurrent use of inappropriate compensatory behaviors (NEDA, 2018b).

Screening Methods

After gaining an understanding of what general definitions, presentations, and criteria are for EDs likely to present to a healthcare setting, it is important for a health care provider to then choose a tool for use in screening for ED's risk or presence. Over the years, there has been a multitude of options presented for screenings of EDs in a variety of different healthcare settings, ethnic populations, ages, and other demographics. In this time, a few screening tools have emerged as dominant choices for utilization based on testing and usage with reflected sensitivity and specificity, reliability, and validity. Each tool has its own strengths and weaknesses, but one option that has shown its applicability in multiple settings and age ranges including that of the child to adolescent population is the Sick-Control-One-Fat-Food (SCOFF) questionnaire, which was employed in this quality improvement (QI) project.

SCOFF Questionnaire

The SCOFF questionnaire was a tool designed in 1999 to be simple, memorable, easily scored, and applied to identify a likely case of ED rather than provide an ED diagnosis (Morgan et al., 2000). SCOFF was initially designed to be used in a primary care setting to identify AN

and BN. However, due to the dualistic response options and direct nature of the tool, it can identify other EDs (Morgan et al., 2000). The five questions of the SCOFF questionnaire create the acronym sick, control, one, fat, and food (Appendix B). Sick differentiates if the individual makes themselves sick because they feel uncomfortably full. Control refers to loss of control when eating. One is related to the loss of one stone (14 pounds) in three months. Fat explains if the individual sees themselves as fat when others see them as thin. Finally, food determines whether the individual constantly thinks about food.

Patients will respond "yes" or "no" to each question with one point allotted to each "yes" response. Should a score of two or greater be discerned, further investigation for EDs presence is warranted as the risk is identified. The literature has determined that the SCOFF questionnaire has variable sensitivity and specificity but has been effective at identifying risk for more EDs other than just AN and BN (Rindahl, 2017). Compared to a structured interview for EDs, SCOFF has a specificity of 94.7% and a sensitivity of 94.6% (Garcia et al., 2011). SCOFF provided a 53.7% sensitivity and a 93.5% specificity in use on a multiethnic general population (Solmi et al., 2015). Sensitivity of 86% and specificity of 83% were shown in the amalgamated results of systematic review and meta-analysis for SCOFF resulting in a high validity for the questionnaire (Kutz et al., 2020).

Alternative Screening Tools

Multiple different tools in addition to SCOFF have been developed and proven successful in screening for the risk of EDs. Eating Disorder Examination (EDE-Q), Eating Attitudes Test-26 (EAT-26), Eating Disorder Diagnostic Scale (EDDS), and NEDA questionnaire have all been successfully utilized tools (Fitzsimmons-Craft et al., 2019).

EDE-Q uses clinician interviews for differentiation and contends as a method of choice for ED-specific diagnosis (Fitzsimmons-Craft et al., 2019). Scoring of EDE-Q involves a more in-depth system where the frequency of behaviors is measured and rated on a scale from 0 to 6 and includes a portion for write-in responses (Fitzsimmons-Craft et al., 2019). Screening times utilizing the EDE-Q can be extensive compared to other tools related to it having a 36-item composition and additional write-in responses.

EAT-26 is a questionnaire containing 26 items for completion and addresses general eating disorders. Scores of 20 or more out of 26 items indicate problematic eating behaviors (Fitzsimmons-Craft, et al., 2019). EAT-26 relies on self-report, and answers are scored on a six-point scale from “never” to “always” (Fitzsimmons-Craft et al., 2019). Shortfalls of EAT-26 are its negation of questions focusing on the preoccupation with food and thinness (Rindahl, 2017).

EDDS is a questionnaire containing twenty-two items designed specifically for individuals with suspected AN, BN, and BED (Fitzsimmons-Craft et al., 2019). Rating is done with a seven-point system of “yes” and “no” responses, and behaviors specific to Eds are measured on a scale of 0 to 14 (Fitzsimmons-Craft et al., 2019). The scoring of this tool is moderate in complexity and time-consuming related to multiple component completion (Fitzsimmons-Craft et al., 2019).

The NEDA questionnaire is relevant for ages 13 and older (NEDA, 2021a). This questionnaire is completed on the NEDA website and will refer the user to treatment options if results indicate a potential risk for EDs. Links are provided to the user upon questionnaire completion, but this is a lengthy process that will not occur in a clinical setting for monitored treatment and care and relies on user discretion and motivation to follow through.

Strengths and Limitations in Literature to Planned Practice Change

The literature identified a few barriers to the utilization of risk screening tools for EDs. There is a want in the healthcare community for a screening tool that functions universally and has been proven valid in use for primary care; however, one does not exist (Johns, et al., 2019). Other barriers include lack of generalization to gender and culture of the SCOFF tool, the inexperience of the tool's use among screening resources, and time constraints (Rindahl, 2017). Additionally, many providers feel they do not know what to screen for in the disorders and assume the process will be complex and time-consuming, and some hold the opinion that EDs in comparison to other psychiatric illnesses are "low prestige" (Johns et al., 2019).

SCOFF as a risk assessment tool for EDs in adolescents has been frequently identified in the literature as easily applied and effective in the family practice setting, but not yet validated for the age group (Campbell & Peebles, 2014). Variability in sensitivity and specificity of the screening tool is likely related to follow-up screening and is thought to be a weakness of the SCOFF questionnaire (Rindahl, 2017). Analysis of previous research shows that SCOFF had other limitations. Many SCOFF studies only involved female samples in a limited age range of mostly younger individuals of White European or Northern American ethnicity (Solmi et al., 2015). Additionally, some studies used a research frame comparing SCOFF use in a healthy control sample to a sample with clinical eating disorders creating easy differentiation and thus leading to a conclusion that SCOFF was very successful in risk populations; however, this also created high validity but possibly overestimated sensitivity (Richter et al., 2017).

The AAP stands behind the SCOFF questionnaire and recommends its use in demonstrating its applicability to the pediatric population (Campbell & Peebles, 2014). In their

mental health toolkit, the AAP recommends the use of SCOFF in screening for EDs and cites it as a freely accessible tool that takes one minute to administer and one minute to score (AAP, 2021). Eleven studies using SCOFF in 10 countries in adolescent populations demonstrated its reliability (Rindahl, 2017). Furthermore, SCOFF has significant strength related to many studies utilizing the tool providing a large number of participants bolstering its power in research. Sensitivity of 100% was demonstrated with only 12.5% false-positive rates in Morgan et al.'s (2000) original publication, which included participants ages 18 to 40 years. SCOFF is easy to administer and score due to its brevity, even in cases involving large sample sizes (Richter et al., 2017). The study performed by Rindahl et al. (2017) further supports the brevity of SCOFF and demonstrates it as a primary strength, allowing for effective implementation into existing screening processes to reach a broader range of patients. Honest answers are also more likely from the SCOFF questionnaire because its brevity prevents respondents feeling pressured to rush their answers (Rindahl et al., 2017). Despite being designed initially to identify AN and BN, studies have shown SCOFF can detect disordered eating in general health surveys and epidemiological studies (Richter et al., 2017). Overall, SCOFF has a high pooled sensitivity and specificity of 95%, each found in a meta-analysis of 25 studies utilizing the tool (Kutz et al., 2020).

Summary and Discussion of Practice Change

Screening for EDS in the adolescent population is lacking and thus unrecognized and undermanaged (Campbell & Peebles, 2014.) It is important to note that there were already existing current screening methods utilized at the facility prior to this project, but the current methods were not consistently applied. The addition of an easily applied and brief screening tool

into an already existing practice correcting the inadequacy of the current system would aid in risk identification for EDs on patient admission to the facility. Missing EDs because of inadequate screening has detrimental outcomes and should not be allowed to occur. Studies conclusively identify that BN and AN have some of the highest mortality rates of any mental illness and have been identified as occurring in ages as young as 10 (Rindahl et el., 2017). Adverse effects of EDs are also widespread and affect nearly every body system and can have lasting effects that follow the adolescent into adulthood and create a lifetime of sequelae.

The facility is an existing pediatric psychiatric care hospital offering treatments of FBT and CBT. These therapies have been identified as the most effective treatment modalities for EDs (Campbell & Peebles, 2014). The facility has an innate ability to follow up with its own identified risk for EDs cases providing these treatments or the ability to refer with greater efficacy to a more specialized facility or emergency departments if needed. Despite this, a consistent screening method is required if these services are provided. Sufficient support for SCOFF's utilization in the screening for risk of EDs in the pediatric population has been established in the literature. This is the vulnerable population the facility serves, and SCOFF can minimize fallout related to EDs.

In this QI project, SCOFF replaced the three screening questions being used at the facility by nursing staff on patient admission and became a part of the admission assessment of the NPs working in the medical team as the facility's GPs. This practice change ensured the benefits of SCOFF and its ability to recognize risk for EDs in the pediatric population implemented in a fashion that supports long-term adherence. The effects of SCOFF can reach a wider population within the facility as its application is more consistent in a two-fold manner. First, SCOFF's

strengths in brevity, validity, and reliability for use in the pediatric population help identify EDs in the pediatric population at the facility. Second, moving the screening protocol to the medical team's NP admission assessment dramatically reduces the likelihood of screening not occurring as with the registered nurses (RN) group due to the more individual one-on-one assessment the NPs provide. SCOFF and its use by the medical group NPs provides appropriate changes to the current risk screenings for EDs at the facility. Additionally, with implementation for use, SCOFF aids in referral to proper treatment for the identified vulnerable pediatric population with EDs and comorbid psychiatric illness served at the facility.

CHAPTER THREE

METHODOLOGY

Theoretical Framework

Change is a necessary and inevitable part of health care, and all change initiatives, no matter the size, have three major components: pre-change, change, and post-change (Barrow et al., 2021). Operating within these three major component stages, healthcare providers work as change agents and champions and select actions that match change theories (Barrow et al., 2021). The transtheoretical model (TTM) is one change theory that has been extensively used and is a model that is considered the "standard-bearer" for change (Raihan & Cogburn, 2021).

TTM encompasses the three major components of change initiatives and can be applied to healthcare providers and their practice in a manner that facilitates change and provides them the ability to select their actions in a series of stages to deliver lasting change. TTM effectively provides a structure for how an individual, group, or organization can integrate new changes in behaviors, goals, or programs at various levels and has been found effective in health promotion and disease prevention programs that address a range of populations and settings (Rural Health Information Hub [RHI], 2021). Additionally, TTM is a staple in commonly applied theoretical frameworks for mental health due to its effectiveness across a broad spectrum of problems (Raihan & Cogburn, 2021). This model was utilized for this project due to the present EDs screening at the facility being inadequate and requiring change, the model's ease of use for steps toward change, and the applicability to the steps in a clinical format for providers to facilitate

lasting change in their practice. Change with TTM occurs in five easy-to-follow steps: pre-contemplation, contemplation, preparation, action, and maintenance (Raihan & Cogburn, 2021).

Pre-contemplation is the first stage. This stage is effective at uncovering those individuals who would be unmotivated to see change and who do not see purpose in finding solutions for a problem because they do not think it exists (Raihan & Cogburn, 2021). Those individuals at this stage are usually unaware or have limited insight and awareness of the problem and lack the ability to see the consequences of their behavior (Raihan & Cogburn, 2021). Of significant note is that individuals in this stage will often deny and defend their actions and present as resistant, unmotivated, unwilling, and not ready for a change to occur (Raihan & Cogburn, 2021). Also seen by individuals in this stage is a tendency to focus on the negative rather than the positive providing a viewpoint of cons outweighing the pros (Raihan & Cogburn, 2021).

Contemplation is the second stage. This stage is identified as having awareness and acknowledgment that a problem exists and there is a need to consider change (Raihan & Cogburn, 2021). However, the caveat is that those in this stage are not yet certain that the problem identified is worthy of change and thus leads to a lack of commitment in the change steps (Raihan & Cogburn, 2021). The problem is the central focus of this stage; however, indecisiveness and uncertainty can lead to a stalemate in which change does not occur for an extended period until proper insight is gained. The primary benefit to this stage is those in it are generally more open to receiving feedback on a problem and solutions to provide change and correct it (Raihan & Cogburn, 2021).

Preparation is the third stage. In this stage, a commitment to correcting the problem is made, and individuals can acknowledge that there is a problem (Raihan & Cogburn, 2021).

Essential in this stage is recognizing that the pros outweigh the cons regarding making change and correcting the existing problem (Raihan & Cogburn, 2021). At this point, those involved in the change can gather information from various sources to develop a plan of action. The accumulation of information is a vital component of the preparation stage. If bypassed, those involved will have plan insufficiency and make the change prone to failure and relapse back into the pre-existing problem (Raihan & Cogburn, 2021).

Action is the fourth stage. This stage is pivotal and where change occurs. It is required in this stage that there is complete restraint from adverse behavior by those involved; there cannot be a lapse back to the original problem (Raihan & Cogburn, 2021). In this stage is the development of confidence that the change can remain and be consistent. There is a continual review of the importance of the change and evaluation of the commitment to maintain it (Raihan & Cogburn, 2021). Short-term positive reinforcement can also be beneficial in maintaining the actions of change during this stage (Raihan & Cogburn, 2021). Consideration and development of contingency plans to overcome barriers and avoid triggers that could lead to lapse are also created (Raihan & Cogburn, 2021). Overt changes to practice are acknowledged in this stage, but visible changes should not be mistaken as the only components of the change. The main mistake made in the action phase is that action is the sole proprietor of change; if this is believed and this stage is prematurely implemented without the prerequisites potential for failure dramatically increases.

Maintenance is the fifth and final stage of TTM. In this stage, the focus is on continuing the implemented change in practice. Individuals involved in the shift here have sustained the change in practice and negated lapse to what was previously used. In this stage, a new status quo

has been identified, and those involved will continue to remember the progress made in the change of practice (Raihan & Cogburn, 2021). Those engaged in the practice change will have identified potential triggers that could cause relapse to previous practice and have constructed contingency strategies to counteract these situations (Raihan & Cogburn, 2021).

Agency Description

The facility for this project is a psychiatric children's hospital containing four child and adolescent treatment units comprised of an acute children's unit, an acute adolescent unit, and two residential units. Overall, the hospital is divided into four units containing 30 acute beds and 44 residential beds, for a total of 74. The facility provides mental health services to children and adolescents in Montana suffering from mental, emotional, and behavioral problems. Complete supportive treatment and care are provided through an in-house multidisciplinary care team. The psychiatric team includes pediatric psychiatrists, psychiatric nurse practitioners, mental health technicians (MHTs), RNs, and mental health therapists. Additionally, medical needs and care are overseen by the medical group NPs who act as the facility's GPs. Each unit is led by a psychiatrist responsible for that unit's patients and a collection of RNs and MHTs. The medical NPs are responsible as GPs for each of the four units and perform a full medical assessment with history and physical at each patient's admission. The medical NPs are also responsible for daily unit rounding to address medical health concerns identified by the care team of each unit or reported by patients on a complaint list located at each nursing station in the four units. Finally, an RD oversees the nutritional needs and support of the patients seen at the facility.

Prior Screening Method on Site

Before implementing the QI project, when patients were admitted to an acute or residential unit at the facility, they were seen by multiple care groups. Patients would be admitted to a unit and have multiple intakes completed from nursing staff, the psychiatric care team, mental health therapists, and the medical group NPs. The facility guidelines state that the medical group must see patients for their intake within 24 hours of admission. The past EDs screening was a part of the nursing staff intake as part of their admission assessment at the time prior to this project's inception. The previous screening method on the RNs intake contained a set of three yes/no questions to identify the presence of EDs under nutrition screening: "Does your weight affect the way you feel about yourself?" "Are you satisfied with your eating patterns?" "Do you eat differently when you are by yourself?" Saying yes to two or more of these questions would result in a positive flagging, and a notification would be placed to the medical or psychiatric care team and the RD. The medical group NPs provided information that the previous RD implemented these screening questions at the facility, but no one followed up with management after the RD left; therefore, consistency of screening completion was lacking because screening was a part of the nursing admission assessment. As a result, the NPs of the medical group had assumed some control in managing the positive screenings when identified by the RNs. Prior to this project's implementation, the NPs would determine if a referral should be made to the psychiatric care team and RD for further workup and management via electronic health record (EHR) communication in their admission assessments for positive screenings reported to them by nursing. For patients deemed medically unstable before assessment or during as a result of existing sequelae or through the effect of potential EDs or other diagnoses, care

would be deferred to holding facilities, hospitals, or treatment centers better equipped for their status. If the patient became medically unstable due to their EDs or other illnesses while at the facility, they were transferred to the local hospital's ER for stabilization before returning.

Project Implementation

This project was QI in design and implemented into an already existing system for managing EDs at the facility. Participants included the medical group NPs screening patients aged 6 to 18 years at the facility on admission to either the residential or acute units. The medical group NPs had recommended that all admissions to the acute and residential units at the facility be utilized in the screening process as they all are evaluated and seen by the multidisciplinary care team. Educational packets containing instructions on using the SCOFF questionnaire and its scoring were provided to each of the facility's medical group NPs through email correspondence prior to the project's implementation. Each of the three main NP medical group providers was also given their own packet and teaching for the use of the SCOFF questionnaire prior to the project implementation in early December of 2021 through an online meeting using web-based videocall software due to COVID concerns at the facility. In this meeting, and in a series of communications via email and phone conversations starting in August of 2021, it was discussed with the medical group NPs how the project's implementation would occur as well as how the SCOFF questionnaire would be scored, interpreted, and used in referral to the multidisciplinary care team. Time was allowed at the end of the meeting to address any questions by the NPs, of which there were none. Additional packets and contact information for this author were made available to be provided to the NPs who are not a part of the main group but work part-time on call for weekend coverage.

The project was designed to follow implementation using the previously described TTM framework. Much of the pre-action phases, including pre-contemplation, contemplation, and preparation, were started and parts completed in preliminary discussions with facility personnel. The medical group NP, acting as the primary site contact and representative for the project, and the other NPs making up the main medical group team, were those involved in the preliminary discussions and all decisions in these pre-action phases.

The pre-contemplation phase was effectively completed after extensive discussion with the NPs of the medical group. Communications occurred in person, through email, online videoconference, and by phone, starting in August of 2021. During these discussions, it was determined that there were no individuals involved in the medical group opposed to a change in practice for the screening of EDs, and it was agreed that the current screenings being used at the time before the project were inconsistent and inadequate. After a brief description of the project's intended design and purpose was provided to the medical group NP acting as the site representative, the information was forwarded to the chief medical officer (CMO) of psychiatry who also approved the project.

The contemplation phase was completed much in conjunction with the pre-contemplation phase since no one in the medical group opposed the need for a change. Everyone involved in the discussions was aware and agreed that the current screening methods for EDs at the facility were a problem, and consideration for change in current practice was warranted. They were open to feedback and supportive solutions to apply the change and correct the current screening method problem. The facility was arguably in the stage of contemplation before the start of the project with their current screening methods. The medical group NPs identified that it had been several

years since the RD who implemented the current screening methods had left the facility, and no one had taken point on the management of the screenings and referrals since that time or knew who was supposed to. These are examples of indecision and uncertainty—hallmark components of the contemplation phase.

The preparation phase was focused on correcting the existing problem of screening for EDs as part of the RN admission assessment providing inconsistent completion results. During this stage, there were numerous considerations as potential solutions to this problem, including changes to screening methods, changes to who performs the screenings, and changes to who will manage interpretation and referral based on results. Ultimately, it was determined that a combination of changes, including the screening method, who performs the screening, and who interprets the results and makes a referral, would be used. Here it was realized that the pros of this new screening implementation outweighed the cons. Pros included increased EDs risk identification, decreased adverse outcomes and harm to patients because of EDs progression, and proper management and referral for treatment of EDs through existing care available at the facility or referral to facilities with appropriate capabilities. Cons included disruption in current practice workflow due to change and potential for missed EDs risk identification early in implementation as providers become accustomed to using the new screening tool and method. The research identified in this phase and discussion with the medical group NPs led to the group's decision to utilize the SCOFF questionnaire in place of the current screening methods. It was also agreed that the medical group NPs be the ones to administer the screenings in their admission assessments and manage interpretation and referrals to the rest of the multidisciplinary care team.

An accumulation of information from the research of multiple EDs risk management screening options was completed in a review of literature and evidence supporting the SCOFF questionnaire, and its use in the child and adolescent population aged 6 to 18 years that the facility services was established. SCOFF and other screening options for EDs were also discussed with the medical NPs. Through their decision and from the research in the review of literature, it was determined SCOFF was the best fit option for use as a screening tool in the already existing process for EDs management at the facility as a QI change implementation. In conjunction with the screening tool change, responsibility and interpretation for referral would also become the responsibility of the medical group NPs. Extensive discussion and use of review of literature bolstered the choice to utilize SCOFF and its likelihood of success after implementation to prevent risk for relapse to the previous inadequate screening practice.

The action phase is where the SCOFF questionnaire was implemented into the current practice of EDs management at the facility, acting as the initial screening for risk of EDs identification by the medical group NPs in their admission assessment. Use of the three questions on the old RN admission assessment for EDs screening was no longer utilized once the project was started in this phase. The SCOFF questionnaire was implemented into the EHR admission assessment for the medical group NPs. Each patient, aged 6 to18 years old admitted to the residential or acute units at the facility, was screened for risk of EDs using the SCOFF questionnaire by one of the medical group NPs as a part of their admission assessment. Hard copies of the questionnaire were taken into each admission assessment by the medical group NPs, filled out, and later copied to the patient's EHR. Results of the questionnaire screening were interpreted by the medical group NPs. Based on NP discretion of questionnaire results,

positive screenings were sent through the existing referral system of the EHR at the facility as part of the medical NPs admission assessment to either the psychiatric care team or RD for further workup, treatment, and management in diagnosis and for nutritional support and direction. Additionally, some screenings both positive and negative were either sent or not sent for referral despite their status for multiple reasons ranging from patient refusal to NP discretion; these results were tracked separately and will be covered further in this document's results and discussions section. If present in the action phase, those patients found to have positive results for EDs risk on the SCOFF questionnaire and to be medically unstable and thus not appropriate for care management at the facility were referred to other more acute care facilities capable of managing the patients' condition and stability, including either local hospital emergency departments for stabilization before management or to specialized eating disorder care facilities.

Referrals occurred through the already existing practice of EHR communication utilized at the facility between the multidisciplinary care team for those who were medically stable; for those who were not, referrals were made through phone contact by providers to the appropriate facilities. Positive screenings with referrals were tracked via hard copy by the medical group NPs; overall screenings were also followed in this capacity. The hard copies were collected for cumulative screening results utilizing SCOFF and kept in a separate file area behind the locked door of the medical NP group's office, accessible only to medical group NPs for collection. These hard copies included a checkbox identifying if a positive result was referred to either the psychiatric care team or to the RD to be filled in by the medical group NPs. Additionally, there was a space provided for a rationale for why a patient was not referred if they had a positive screening. Each hard copy was de-identified of patient-protected information. The weekly cycles

for screenings started on Wednesday and stopped at the end of the day on the following Tuesday to meet the needs and availability of the medical group NP's schedule for meetings and handoff of data. The completed hard copy screening handoffs for the previous week were performed at the start of each new screening cycle week on Wednesdays for analysis by the author through direct in-person handoff from the medical group NPs. Interpretation of the previous week's data was made available to the medical NPs within three days of handoff. A timeline was created for interpretation of the project steps and schedule (Appendix C). Additionally, Table 1 provides simplified steps to the project repeated each week.

Table 1. Weekly Project Steps

Wednesday	Wednesday–Tuesday
-Data Collection from previous week from NPs -PDSA cycle meeting (every two weeks)	NPs track: -Admission census -SCOFF screenings -Positive referrals Report: -Metric results reported to NPs (within three days of collection)

Maintenance was the final stage of the project's implementation of the SCOFF questionnaire into the facility's existing management of EDs. The maintenance stage is where the project remains now that SCOFF is the established new status quo in the screening process for risk of EDs at the facility. Here potential triggers that could lead to regression and use of previous screening methods are being avoided by providing success metrics obtained using SCOFF information provided through routine reports. Furthermore, a change champion is in place to continuously support the SCOFF questionnaire's implementation at the facility locally

since the project's completion to answer questions regarding use, interpretation, and management in utilization.

One of the medical group NPs agreed to take on the role of change champion early in the project development after the pre-change period when she decided to be the primary site representative and help in the project implementation. She was the first individual at the facility contacted who had suggested a need for the QI project aimed at EDs risk identification. Post-implementation, she continuously facilitates the success of the SCOFF questionnaire screening practice for EDs risk identification at the facility. Having a local change champion is vital in the project's survival, and maintaining the SCOFF questionnaire for EDs risk identification as the status quo post-implementation ensures any questions in use and interpretation can be addressed by a knowledgeable source. Change champions are critical in their ability to persuade early and late buy-in by the majority of staff and help encourage the embrace of change and increase project success (Barrow et al., 2021). Additionally, the change champion has been able to impart her knowledge to others and provide the opportunity to expand the role to multiple individuals. Expanding this role will help ensure that there is not another lapse in screening and management of EDs at the facility, as seen when the previous RD left the facility after implementing the three questions utilized for EDs screening in the RN admission assessment.

Implementation and continued use of the SCOFF questionnaire at the facility was supported by its pre-existing management and treatment options for EDs. The project's QI change implementation was to use an existing system to improve risk screening for EDs and subsequent referrals, replacing a single part in an otherwise already well-established framework for EDs management at the facility and merging its function with the medical group NPs to

increase reliability and consistency of completion. Further facilitators included the already existing treatment options for EDs at the facility if their risk was identified on screening for appropriate treatment through referral by the discretion of the medical group NPs. Referrals were made to the RD for nutritional support and the psychiatric care teams for CBT, FBT, and other care. Additional benefits occurred by moving screening from the larger nursing group to the smaller group of medical NPs. The smaller medical group of NPs provided greater efficacy in screening by functioning in a more individualized one-on-one admission setting and improved tracking of screening results and referrals over time by not relying on screening results from another group to be sent for interpretation. The patient admission census was manually tracked by the medical group NPs, and they were able to provide if a screening had been missed or not based on this tracking.

There were a few potential barriers to implementing the SCOFF questionnaire at the facility specific to the site. Resistance to the new screening method by other multidisciplinary team members occurred due to changes in existing practice and upset of routine. The informatics technology (IT) department was contacted by the medical group NPs to help generate a census of patients meeting project criteria for the screening weeks. The goal of this was to provide comparison and tracking of SCOFF screenings by the medical group NPs in the EHR so that manual tracking would not be necessary and hopefully remove some potential for human error in missed screenings. Unfortunately, IT never provided this electronic census ability. The medical group NPs had to track screenings manually over the entirety of the project's implementation. Despite multiple attempts by the NPs to reach out for this help generating an electronic census tracking, IT did not respond to their requests. Another site-specific barrier to implementing this

project was the increase of COVID cases around the state and its influence and spread within the facility in conjunction with a lack of staffing to support the facility's full functionality. The spread of COVID in the facility and lack of adequate staffing resulted in project barriers of missed screening cases and difficulty in tracking admissions. The final barrier that was presented in the project's implementation was the resistance and refusal of completion of the questionnaire by patients during the NPs admission assessment or a refusal of the referral afterward if screenings were complete and found to be positive. This document's results and discussions section provides further insight into these facilitators and barriers and their outcomes.

SMART Goals

The goal of this QI project was to increase screening for risk identification of EDs in pediatric patients aged 6 to 18 years on admission to the facility's residential and acute care units to 100% and additionally attain a 100% referral rate for positive screening to the RD and psychiatric care team. This objective was attempted by replacing the previous screening methods performed by nursing for EDs identified as inadequate due to inconsistency with the SCOFF questionnaire. Additionally, the questionnaire was used, interpreted, and managed for referral by the medical group NPs as part of their admission assessment. The change to the use of the SCOFF questionnaire and positive result referrals were monitored over an eight-week action phase. After collecting data at the end of each weeklong cycle, weekly updates were provided to the medical group NPs on the overall screening rate and the referral rate for positive screenings within three days of collection through email. Additionally, every two weeks, there was tracking for objective improvement during this action phase, using a meeting with the NPs, usually in person with a single representative from the group or by email. Use of Plan-Do-Study-Act

(PDSA) cycles was employed to implement any changes the NPs brought up in the every two-week meetings and felt were necessary to address project barriers they identified during the project implementation. The PDSA cycles helped attempt to meet the project's overall goal by implementing change to help facilitate better outcomes and address barriers in the action phase.

The utilization of weekly updates to the NPs, every two-week meetings, and PDSA cycle use provided an increase in screening rates and positive result referrals and drew the project closer to the goal of 100% screening rate and 100% referral rate for positive screenings by the end of the eight-week action phase implementation. Barriers to the implementation (plan) were identified, and changes to address these barriers were developed (do), evaluation of barrier cause was identified (study), and finally, changes were implemented to address barriers (act). PDSA cycles act as a final tool to facilitate project implementation and have been used in hundreds of healthcare organizations successfully when documenting a test of change (IHI, 2021). Weekly updates, every two-week meetings, and PDSA cycles in this project provided valuable communication and change during the action phase of the project and helped attempt more effective outcomes over the limited implementation window of eight weeks.

Unfortunately, the only change need identified was with the first PDSA cycle in week two of the project where it was determined EHR tracking of admissions would be beneficial to the medical group NPs and where IT had initially been contacted for help with this. The second and third PDSA cycles consisted of continued attempts by the NPs to contact IT for help, which was never provided. Final evaluations for improvement in the screening for risk of EDs and referral rates for positive screenings were done at the eight-week mark, and measurement of goal success was completed by comparing total admissions seen by the medical group NPs divided by

the number of SCOFF screened admissions to the facility, and for referrals, the total positive screenings divided by total sent referrals. Outcomes are provided in the results and discussion portion of this document.

Screening utilizing the SCOFF questionnaire remains in use for the procedural screening of new patient admissions to the facility past the completion of the project. Some of the medical group NPs utilize SCOFF as their only screening tool while others have opted to use it supplementary with the previously used three questions to open more dialogue with the patients and glean more insight into the ED risk for referral. The project's long-term goal is to attain a 100% risk of EDs screening rate utilizing the SCOFF questionnaire in the medical group NPs admission assessment with patient admissions to the facility and a 100% referral rate for positive screenings. To achieve this, the change champions remain as local resources to maintain the use of the SCOFF questionnaire and continue the upkeep of necessary components, including data monitoring, education, and barrier identification and countermeasures. Data is still collected and analyzed to monitor results monthly by the medical group NPs. Additionally, monthly meetings and PDSA cycles are completed by the medical group NPs to continue addressing any barriers to maintaining the use of the SCOFF questionnaire and referrals of positive screenings. This long-term goal provides lasting patient impact in identifying risk for EDs and subsequent referral for treatment with positive screening results to prevent negative effects and promote patient health at the facility. Those seen at this facility are a vulnerable population of young individuals who should have every effort made to ensure their health and promote their best possible outcomes, avoiding lasting negative health impacts or even death. Identifying the risk of EDs helps provide this, and the SCOFF questionnaire as a part of the medical group NPs assessment, interpretation,

and referral acts as a bastion to the identification process. Although it is outside this project's scope, the facility was encouraged to track referral completion after positive screening is sent. Following the referral completions will help monitor the overall effectiveness of screening on patient outcomes and further bolster the relevance of the screening change.

CHAPTER FOUR

RESULTS

Introduction

Throughout this project's development and implementation, three main NPs from the medical group who act as the facility's GPs and two additional NPs who help cover weekend call shifts at the facility helped implement the QI changes. Replacing the previous screening methods for EDs at the facility completed by nursing, the SCOFF questionnaire was implemented to identify the risk of EDs in new pediatric patient admissions to the facility aged 6 to 18 years as a part of the medical group NPs admission assessment.

Overall screening rates for the risk of EDs utilizing the SCOFF questionnaire were improved compared to the facility's previous screening methods. The medical group NPs were provided the SCOFF questionnaire to use, interpret, and manage the risk for EDs. They were also provided weekly updates with success metrics and every two-week meetings with PDSA cycle usage to overcome barriers identified in the project's action phase and allow for change to address barriers while still in this phase. Cumulative outcome evaluation for this project's success is seen in the process measure metrics of percent SCOFF screened patients on admission to the facility and the percent of positive SCOFF screenings referred out to the psychiatric care team and RD.

Findings of this project showed a 60% screening rate of new patient admissions with the SCOFF questionnaire at the lowest and a 100% rate at its highest over the eight-week implementation period. Overall, an average 88% screening rate with the SCOFF questionnaire

was seen over the eight-week action phase of the project's implementation with a total patient admission census of 69 patients meeting criteria and a total of 61 SCOFF screened patients. Eight patients were missed for screening. Missed screenings were a result of COVID upset in admission processes and having to manually track admission census, patients having positive COVID results and inability to screen, and finally, human error from NPs forgetting about the assessment.

To monitor outcomes of the SCOFF screenings, referral of positive screenings was tracked. The lowest referral rate of positive SCOFF questionnaire screenings throughout the project was 0% and 100% at the highest. The average positive SCOFF questionnaire screening referral rate over the eight-week action phase of the project's implementation was 85%, with a total of 27 positive SCOFF screened patients and 23 total positive SCOFF screened referrals. Four positive SCOFF questionnaire screenings were identified but did not receive a referral, and seven were negative but still provided a referral to either the RD or psychiatric care; rationale for this is provided in the discussion portion of this document.

Figure 1. Screened Admissions

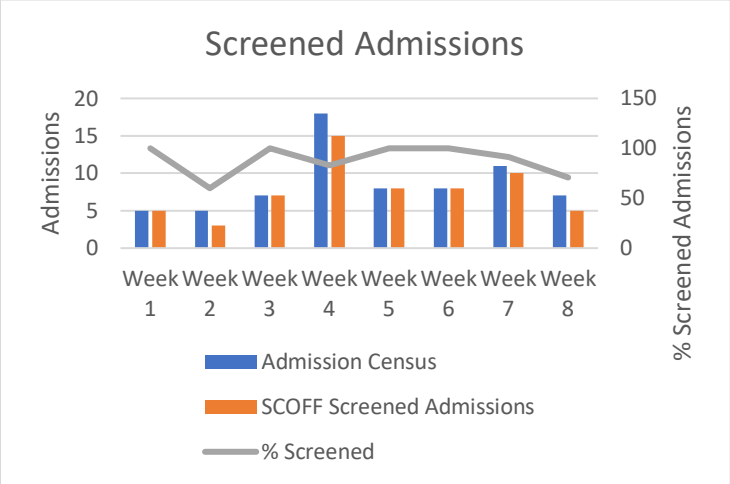


Figure 2. Positive Referrals

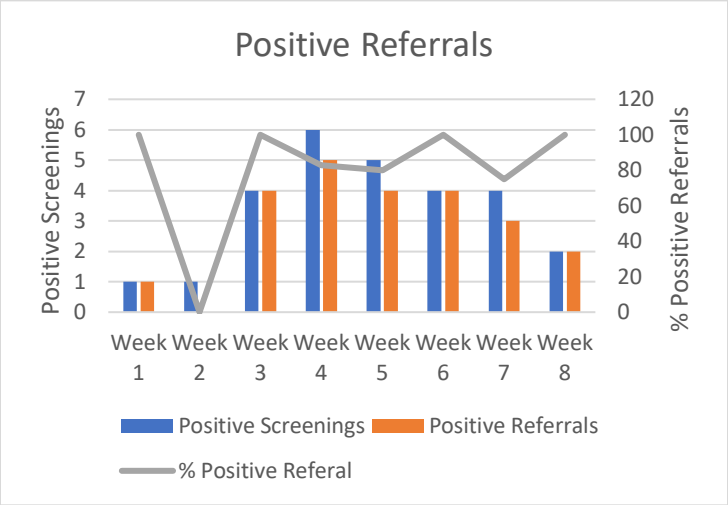


Table 2. Variable Screening and Referral Rates

	SCOFF Screened Admissions	Admission Census	% Screened	Positive Screenings	Positive Referrals	% Positive Referrals
Week1	5	5	100	1	1	100
Week2	3	5	60	1	0	0
Week 3	7	7	100	4	4	100
Week 4	15	18	83	6	5	83
Week 5	8	8	100	5	4	80
Week 6	8	8	100	4	4	100
Week 7	10	11	91	4	3	75
Week 8	5	7	71	2	2	100
Total	61	69	88%	27	23	85%

Discussion

The goal and purpose of this project were to increase screening for EDs risk in the pediatric population aged 6 to18 years to 100% at the pediatric psychiatric care facility in which it was to be implemented by the end of an eight-week action phase and have a subsequent 100% referral rate for identified positive screenings. This overarching project goal was not met to the intended completion metric of a 100% screening rate or the 100% referral rate for identified positive screenings. Still, it was fulfilled in four out of the eight weeks for screenings and four of eight weeks for positive referrals. Overall, the reason these goals were not met to completion was in relation to the presence of the COVID pandemic during implementation and its effect on the facility, the limited time for the project's implementation, the presence of human error, and the design of the SCOFF questionnaire itself not being able to adapt to certain limitations in the patient population all of which are discussed in the lessons learned and limitations portion of this document.

Despite the project not meeting the goal of 100% screening and 100% positive referral rate, there was a significant increase in screenings reported by the medical group NPs compared to the previously used methods at the facility and additionally an increase in referrals to the psychiatric care team and RD for further management and workup of potential EDs based on risk identification. Metrics for screening and referral rates of EDs using the previous site methods were not attainable for direct comparison to this project's methods. This inability for retrograde comparison was due to a lack of IT department participation in metric provision when asked for by the medical group NPs and due to the lack of tracking by a specific group of this data after the previous RD left, and no one oversaw the takeover of the responsibility.

Results of the SCOFF questionnaire's use in this project compared to existing literature provided mixed results. The literature describes SCOFF's ability to identify risk for EDs other than AN and BN based on its dualistic response options and direct nature; however, throughout the project's implementation, the medical group NPs noticed it did not identify risk factors such as BMI with significant efficacy in relation to risk for EDs presence and additionally could not accurately be used in those with mental delay or disability. Additionally, overall sensitivity and specificity in SCOFF's ability to identify EDs risk at the facility were not available in this project as it was beyond its scope to track if referrals resulted in ED diagnosis. The medical group NPs reported that the SCOFF questionnaire was easy to use and score in a timely manner but that it did not seem to identify risk with any more efficacy than the previously used three questions on the nursing admission assessment. However, they did note that the SCOFF questionnaire seemed to open more dialogue with patients resulting in more accurate and meaningful risk identification than the previously used three questions and was helpful when forwarding a referral with ED risk identified as having a positive SCOFF screening in their rationale. SCOFF in the existing literature is a well-developed and validated risk for EDs screening tool in the pediatric population. However, these outcomes support that the most significant increase in screening efficacy and consistency was related to changing the party performing the screening rather than the screening tool itself. This outcome reported by the NPs was not the expected finding. In addition to the change in who performs the screenings, it was thought the SCOFF questionnaire as a tool would prove more effective in EDs risk identification than the previously used three questions in the nursing admission assessment and thus increase the rate of screenings and referrals based on its ease of use.

Finally, it is important to note the screening results that were not included in the overall reported metrics of SCOFF screened admissions and positive screenings referred. As noted in the previously described results, there was a total of seven SCOFF questionnaire screenings with negative results that were still referred. These negative referrals were not tracked in the screenings results due to wording within the project indicating that "positive" screenings would be tracked. The medical group NPs' notes on the hard copies they completed provided the rationale for negative screenings receiving the referral. The rationale for negative screenings with referral included patient's report of ED behavior and activity, NP interpretation of need based on statements made by patient and patients presenting with BMI greater than the 99th percentile, and patient request to meet with the RD to discuss eating habits. There were an additional four positive SCOFF screened patients without a referral. Reasons for positive screenings without referral were again listed on the hard copies by the NPs. They included patient declination of referral, NP interpretation based on patient presentation including severe anxiety, manic and depressive states, and mental disability due to autism.

Lessons Learned

Upsets occurred in the project's implementation phase internally early on at the facility because of a surge of COVID cases in the care units. This surge was also accompanied by staffing shortages and led to the forced closure of two units, including one acute unit for children under the age of 10 and one residential unit serving school-aged to adolescent children. Overall, these changes and upsets also led to some admissions being missed in some weeks of the project's implementation due to changes in admission processes and practice as reported by the medical group NPs. The COVID increase also led to fewer patient admissions during a few

weeks of implementation. It would have been beneficial to extend the project's implementation into at least 12 weeks allowing for more PDSA cycles to occur and help potentially improve screening with changes that could be made to address barriers identified in those cycles to overcome the issues caused by COVID. Additional screening weeks added to the implementation phase would provide a potential increase in the screening volume of patients seen and provide further data.

There was a lack of access to screening metrics tracked in electronic form in the EHR throughout the implementation of the project. It was determined after the first PDSA cycle that the medical group NPs would communicate with their IT department to receive census metrics during the project for tracking purposes. IT did not provide this information or ability, and the NP, who was the site contact, voiced that IT had repeatedly not responded to her requests. It would have been beneficial to connect with IT directly as the project lead and obtain their participation in metric tracking before project implementation. It could have removed the need for manual tracking by the medical group NPs and the propensity for human error in the tracking.

Limitations

The time constraint of an eight-week implementation phase for the project acted as a limitation in the overall design of the QI itself. Furthermore, COVID exacerbated this issue further by leading to fewer patients being screened as the facility was forced to close some units and decrease the number of patients it could see during the implementation phase. This two-fold limitation in the potential pool of screened patients limits the project's generalizability by constraining the data gleaned in results for extrapolation.

Human error in the tracking of admissions and adapting process change into the admission assessment acted as another limitation in the project. The required manual tracking of census data by the medical group NPs also served as a limitation by relying on multiple NPs tracking their results and providing the information to the site contact NP for the project. Manual tracking left the potential for additional human error in missed information that could have been avoided if electronic abilities were available. Unfortunately, this was attempted to be remedied, but as discussed, IT declined to provide the ability to track information in this way, leaving manual tracking as the only option. In addition to human error in tracking, the NPs also noted that a few missed screenings were the result of forgetting the screening in the admission process; this speaks more to the potential for human error and likely would improve if the project was given more time in implementation to become a regular part of the medical group NPs' routine. Potentially missed data skews the generalizability of results as part of the data could be missing or misrepresented.

The last limitations were noted to be in the SCOFF questionnaire itself and the project's design in only tracking positive SCOFF screened referrals. The NPs noted that the SCOFF questionnaire did not function adequately in specific populations throughout its use in the project. They reported that the questionnaire failed to identify those patients with obesity with risk factors identifying them as at-risk for EDs. There were patients with apparent EDs risk factors such as a BMI greater than the 99th percentile who scored negatively on the questionnaire. Furthermore, the medical group NPs also noted that the questionnaire could not account for mental disability and delay such as autism and traumatic brain injury history. They reported that such patients could not understand the questions on the questionnaire or were non-

verbal, limiting the study's generalizability to those admitted to facilities such as this. Finally, the project's design focused on tracking positive SCOFF screened referrals instead of overall referrals. Overall referrals based on SCOFF screened results and the interpretation of the medical group NPs for need would have provided more generalizable results since the QI portion of this project was focused on both a change in the screening tool and the screening party, not just the tool itself.

Recommendations for Future Practice

There are various gaps in knowledge surrounding risk for EDs screening in the pediatric population at psychiatric care facilities. With the findings of this study and the aim to provide a 100% screening rate for risk of EDs in the pediatric population aged 6 to18 years of age at a pediatric psychiatric care facility, use of a valid and reliable screening tool that is brief and easy to score and interpret should be utilized. Additional time and research should be spent in identifying a screening tool of this nature that can also account for variations in mental acuity to further validate results in those with impairment. The implementation phase of such a tool into a QI project should be achieved over at least a 12-week phase, allowing at least every two-week meetings to discuss barriers and solutions to overcome them in the following weeks while still in implementation utilizing PDSA cycles. However, more time is not always a possibility. Healthcare continues to become a rapidly changing landscape demanding change adapts with it or be left behind. To address this and combat human error, systemization of change into processes that can keep up should be made. EHRs exist as a framework and tool allowing for change to adapt to the shifting landscape of healthcare, to this capacity, tools for change such as the SCOFF questionnaire should be implemented into the EHR eliminating the need for its

manual completion and copy into electronic format. A solid theoretical framework such as the TTM should also be used as the backbone for such a study to provide a better structure for each phase in development. Additionally, the buy-in of all parties involved in such a QI change should be achieved before starting the project, including but not limited to the participants, IT or equivalent department, and all proponents in the multidisciplinary team. Finally, a change champion should be chosen and put in place before the project's implementation to smooth the transition, provide further buy-in from all parties involved, and remain in place to further facilitate the QI change in post-implementation periods.

Conclusion

The SCOFF questionnaire is a valid and reliable screening tool providing a fast and easy application for risk of EDs screening in the majority of pediatric patients aged 6 to18 years at a pediatric psychiatric care facility. The tool is efficient and concise enough for the medical group NPs to use in their intake of newly admitted patients and applied well to most patients in this setting. The questionnaire fits into the routine admission assessment of the medical group NPs acting as a non-obstructive change in current practice. It creates no limitation in workflow in the already well-established process for the management of EDs at the facility. However, the difference in screening tools was only part of the impact to practice with this project. Changing who performs the screenings from being part of the nursing admission to that of the medical group NPs was identified to have the most significant cumulative impact on consistency in screening for EDs and subsequent referral rates for those screenings identified as positive.

Screening for the risk of EDs in the pediatric population is required for early treatment and success in this treatment. It was beyond this project's scope to investigate those screenings

found to be positive and their resulting diagnosis. It would be cursory to assume they resulted in a diagnosis of an ED. However, positive screenings were referred to appropriate resources, including the psychiatric care team and RD, for proper management and further workup when interpreted as warranted by the medical group NPs and accepted by the patient.

This project aimed to increase screening for EDs risk to 100% and provide subsequent 100% referral for identified positive screenings, but only an 88% and 85% rate were achieved overall, respectively. Although, the medical group NPs did report the QI changes were effective and noted an overall increase in screening and referral rates compared to previous methods. With continued use of this new practice where the medical group NPs perform the screening on intake and utilize the SCOFF questionnaire, and with continued monitoring of success metrics and use PDSA cycles to overcome barriers, this QI project stands to meet the 100% screening and 100% positive referral rate goal with time. Meeting these goals will mean the reduction and prevention of morbidity and mortality related to EDs within the vulnerable pediatric population aged 6 to 18 years.

CHAPTER FIVE

MEETING DNP ESSENTIALS

Introduction

As I complete my doctor of nursing practice (DNP), a terminal degree in nursing, there are a few select DNP essentials that my program has helped me achieve. The essentials most related to my practice-focused degree best correlate to what *The Essentials of Doctoral Education for Advanced Nursing Practice* describe as unitive practice experiences with intense practice immersion experience (AACN, 2006). I have had both unitive practice experiences working on my DNP scholarly project and my advanced practice registered nurse (APRN) coursework during various clinical experiences within a wide range of settings and patient populations, where I additionally gleaned immersion in practice. These DNP essentials further focus on my core competencies learned throughout my program and home in on my degree's practice-oriented nature.

DNP Essentials

Essential I: Scientific Underpinnings for Practice

This essential is centered around doctorate-level nursing providers using terminal academic preparation for complex practice and processes governing human beings' life-process, well-being, and optimal function (AACN, 2006). Furthermore, one should be able to integrate nursing science and knowledge to apply science-based theories and concepts to their work and

improve outcomes of those they care for and additionally develop and evaluate new practice approaches utilizing theories from both nursing and other disciplines (AACN, 2006).

In my DNP scholarly project, I implemented a new practice into the procedure to attempt policy improvement. Through QI of existing policy and practice, I tried to achieve optimal well-being and function for those seen at a pediatric psychiatric care facility by better identifying their risk for EDs. Using the SCOFF questionnaire, I used nursing science and knowledge to help achieve this overall outcome. I acted as a leader in my project to implement its change utilizing the TTM to develop and evaluate this new practice change with a theoretical framework adapted from disciplines outside of nursing but focused on healthcare. My DNP program provided me with the curriculum and learning to seek these frameworks and knowledge to implement change and achieve this essential.

I had multiple opportunities to apply this essential in my APRN clinical courses. One of the main focuses of this essential is patterning human behavior and interaction with their environment in normal and critical life situations and understanding the wholeness of health and the continuum it is associated within the human environment (AACN, 2006). This was present in all my clinical experiences but perhaps best seen in one of my family care settings where I had a myriad of health conditions being addressed in patients from various environmental actions each individual had experienced. The uniqueness of each individual seen in this setting highlights this essential as each case was different from the next but would allow me to address routine check-ups to acute visits focused on individual systems or expanded problems in complex situations. These coursework experiences through my DNP program cumulatively provided me with the knowledge and preparation needed to meet and use this DNP essential.

Essential II: Organizational and Systems
Leadership for Quality Improvement and Systems Thinking

The American Association of Colleges of Nursing (AACN) (2006) indicates that organizational and systems leadership are critical components to DNP graduates' ability to achieve improved healthcare outcomes and eliminate health disparities. This essential is also focused on the needs of target populations or a broad community.

Specifically, through my DNP scholarly project, I focused on and achieved organizational system leadership in implementing a QI project aimed at better identifying risk for EDs in a target population at a pediatric psychiatric care facility through leading change to existing policy and procedure for screening risk. With the completion of this QI project, my leadership has left the facility with lasting changes that, in a short amount of time, have increased EDs' risk screenings providing elimination of healthcare disparity by identifying risk and allowing for it to be addressed accordingly.

In the broad community, my APRN clinical coursework has seen me in various settings. I have been able to eliminate health disparity by working in populations to better identify, treat, and manage health concerns with teachings and preparations provided to me through the tailored learning experiences of my DNP program, allowing me to meet this essential. During my APRN and DNP coursework, I have addressed health and health disparity in pediatric, obstetric, geriatric, psychiatric, family practice, and specialty practice. This customized experience has grown my knowledge and practice base and provided me a robust platform over various disciplines to meet this DNP essential in any setting I pursue upon graduation and be an organizational leader in my work.

Essential III: Clinical Scholarship and
Analytical Methods for Evidence-Based Practice

This essential highlights nursing scholarly practice characterized by learning new phenomena and applying new discoveries to increasingly complex situations (AACN, 2006). Additionally, the integration of knowledge from diverse sources to solve practice problems is seen in this essential (AACN, 2006).

My DNP scholarly project was a perfect example of meeting this essential. I was given a complex situation and practice problem in which I had a pediatric population with comorbid psychiatric illness that needed improved screening for risks of EDs to help provide them better screening and care through referral for identified positive cases. It was discovered that screening methods before implementing my project were lacking, and thus, research was done by myself to find a solution to this complex situation. I performed a review of literature using analytic methods to critically appraise available knowledge. Additionally, I searched for EDs' risk identification methods across multiple scholarly sources. In conjunction with the medical group NPs at the facility to whom I presented my research, it was determined that SCOFF was the best screening tool for the problem. It was also determined that the role of risk for EDs screening should be moved to the medical group NPs on patient admission instead of its current bearer of nursing. I led this implementation of change in practice at the pediatric psychiatric care facility where my project took place. As a result, I met this essential by utilizing the knowledge I gleaned from diverse sources in the review of literature and translated this knowledge into practice at the facility to improve the reliability of health care practice and outcomes with my QI project while helping to eliminate health disparity.

Essential VI: Interprofessional Collaboration for Improving Patient and Population Health Outcomes

This essential sees health care as a multi-tiered environment depending on contribution from highly skilled and knowledgeable individuals from multiple professions (AACN, 2006). Since health care is multi-tiered, healthcare professionals must be able to function as a highly collaborative team, and depending on the patient's needs, the leadership of this team must adapt and evolve.

In my clinical coursework, this essential was a staple. Specifically, I cared for a patient in a family care practice who came in with a sudden increase in her blood pressure not explained by her family or past medical history. I became the leader in her care in this setting when I looked further into her complete history. I found she had recently undergone gamma-knife surgery of her brain for a tremor in her hand. I had to reach out to her neurosurgeon in another city and collaborate with him to see if her current blood pressure issues could be related to her gamma-knife procedure, even though the surgery was six months prior. Additionally, on discovering this was not an expected outcome, I had to work with the neurosurgeon to collaborate imaging studies and further workup from where the patient and I were in an area with more limited resources. When imaging ruled out the gamma-knife as a causative factor, I had to further work with nephrology and consult them as laboratory results came back suggesting an adrenal tumor as a possible cause for the patient's sudden blood pressure increase. Throughout all this time, I met this DNP essential acting in interprofessional collaboration and as a leader in my patient's care to provide her the best possible outcome by managing her overall care and collaborating with the interprofessional healthcare team. Skills taught to me in my DNP program brought me

to a level where I could meet this essential and collaborate within the multi-tiered healthcare team to provide my patient the best possible collaborative care.

I also met this essential while working on my DNP scholarly project. I was a leader in implementing my QI project to screen for risk of EDs in patients at a pediatric psychiatric care facility utilizing the SCOFF questionnaire and changing the responsibility of screening from the nursing staff to the medical group NPs. My QI project additionally had a secondary component. Providing referrals for identified positive screenings further helped achieve better patient outcomes by sending them to appropriate care available at the facility through the psychiatric care team and RD. This DNP scholarly project was built on interprofessional collaboration and improving patient health outcomes by identifying risk for EDs and providing referrals for appropriate care. Structured learning from my DNP program provided me with the teaching required to research and implement such a QI project over multiple semesters, breaking the work down into individual achievable components.

Essential VIII: Advanced Nursing Practice

The foundational goal of this essential is to have all DNP graduates at a level where they have achieved refined assessment skills and can perform these skills in a variety of patient care settings (AACN, 2006). Furthermore, the DNP graduate should be able to conduct a comprehensive systematic assessment of health and illness and design and implement therapeutic interventions based on nursing and other sciences (AACN, 2006).

I achieved this essential best when working in a family practice care setting, seeing multiple Medicaid and Medicare patients. Here I utilized teachings from my DNP program provided over years of APRN coursework and clinical assignments in multiple settings. I worked

with a patient on Medicare services who had fallen at home and was not found for days. Once she was found, she was in an acute state of illness and spent many days in the hospital. On her discharge from the hospital, once she was stabilized, she required follow-up care with her PCP, which was my role as the DNP student. I assessed her and found that she needed much more assistance at home as she could no longer function independently for many daily activities. Overall, her health condition had improved, and from the hospital's standpoint, she was stable, but from my assessment, she needed additional help to heal and get back to her everyday life capabilities. I met this DNP essential and led the development of a therapeutic plan for this patient after assessing her overall health and developing a healthcare plan. By using a plan with at-home physical therapy, weekly clinic visits for follow-up, and constant communication with her and the physical therapy group, we achieved a return for this patient to her regular pre-hospitalization activity and independence levels.

Project Impact on Future Career

I have learned an immense amount throughout the implementation of my QI DNP scholarly project. Much of what I have learned in this time will significantly impact my future career as a DNP. Select experiences and findings in my time with the DNP scholarly project stand out to me and will provide this impact and inform my future career.

I have learned that addressing a practice problem is not as simple as identifying the problem and taking over to provide a solution. I found that the buy-in of all potentially affected parties in change to address a practice problem should be achieved before implementation of later stages. Limited buy-in results in the incomplete potential for the best possible outcomes of the changes involved, and I saw this in my own project. When I did not have the IT department

on board for something as simple as weekly electronic metric tracking, it resulted in potential data loss and skewed or limited results for analysis and use within the assessment of the project's success resulting from the changes made. In this capacity, what I learned in my project will inform my future as a DNP provider who will work in a practice where I may wish to implement change to provide improved health care delivery to my patient population. I will ensure that I have full group buy-in for all those involved in the changes I plan to implement in my future.

I also learned that true QI requires a great deal of time to succeed. In my project, I achieved a measure of success in increasing screenings for risk of EDs and ensuring referral for positive screenings over eight weeks. However, if given more time, more adjustments could have been made to address barriers and complications in the project's implementation and allow for more data to be collected and better understand the effect of changes made. What I learned here will inform my future practice as a DNP provider. When I make changes to my practice to better my health care provision for my patients, I will allow for ample time to implement the change and allow for flexibility in my design to address barriers found in implementation.

My work with the DNP scholarly project has informed my future practice by showing me the value of utilizing theoretical frameworks to implement change. The best of plans have a propensity for failure when implemented without structure. Through my work on the DNP scholarly project, I was prompted to use a theoretical framework or model in implementing change. The model I used in my project was that of TTM, and this model showed me how important each stage to change can be and the value in completing each to fruition without skipping steps that could lead to failure. As a result of this teaching, I will ensure change I use to address a practice problem will follow a structural framework that supports its success.

Overall, my future as a DNP graduate and moving into a career as a DNP provider will see a few implementations learned in my DNP project coursework. Change addressing practice problems I find in my career will be structured using a supportive theoretical framework for guidance. Additionally, complete party buy-in of all those potentially involved in the change will be achieved so the best possible outcome of the change can occur with everyone working in collective understanding and support of the change before moving forward with further framework steps. And last, the change process will be given ample time to occur and structured with flexibility to allow for adaptation and overcoming barriers in implementation to provide the best possible outcome and result in a lasting change.

REFERENCES CITED

Allen, K. L., Byrne, S. M., Oddy, W. H., & Crosby, R.D. (2013). DSM-IV-TR and DSM-5 Eating Disorders in Adolescents. Journal of Abnormal Psychology (1965), 122(3), 720–-732.

American Academy of Pediatrics. (2021). *Mental health tools*. https://downloads.aap.org/AAP/PDF/Mental_Health_Tools_for_Pediatrics.pdf.

American Association of Colleges of Nursing, & American Association of Colleges of Nursing. (2006). The essentials of doctoral education for advanced nursing practice.

Barrow, J. M., Annamaraju, P., & Toney-Butler, T. J. (2021). Change Management. In *StatPearls [Internet]*. StatPearls Publishing. https://www.ncbi.nlm.nih.gov/books/NBK459380/.

Cadwallader, J., Godart, N., Chastang, J., Falissard, B., & Huas, C. (2016). Detecting eating disorder patients in a general practice setting: A systematic review of heterogeneous data on clinical outcomes and care trajectories. *Eating and Weight Disorders, 21*(3), 365-381.

Campbell, K., & Peebles, R. (2014). Eating disorders in children and adolescents: State of the art review. *Pediatrics (Evanston), 134*(3), 582-592.

Centers for Disease Control. (2018). *Defining childhood obesity*. https://www.cdc.gov/obesity/childhood/defining.html.

Fitzsimmons-Craft, E. E., Karam, A. M., Monterubio, G. E., Taylor, C. B., & Wilfley, D. E. (2019). Screening for Eating Disorders on College Campuses: A Review of the Recent Literature. Current Psychiatry Reports, 21(10), 1–-17.

Garcia, F. D., Grigioni, S., Allais, E., Houy-Durand, E., Thibaut, F., & Dechelotte, P. (2011). Detection of eating disorders in patients: Validity and reliability of the French version of the SCOFF questionnaire. Clinical Nutrition, 30, 178–-181.

Golden, N., Schneider, M., & Wood, C. (2016). Preventing Obesity and Eating Disorders in Adolescents. *Pediatrics (Evanston), 138*(3), E20161649.

Institute for Healthcare Improvement. (2021). *Plan-do-study-act (PDSA) worksheet.* http://www.ihi.org/resources/Pages/Tools/PlanDoStudyActWorksheet.aspx.

Johns, G., Taylor, B., John, A., & Tan, J. (2019). Current eating disorder healthcare services–the perspectives and experiences of individuals with eating disorders, their families and health professionals: systematic review and thematic synthesis. *BJPsych Open*, *5*(4).

Kutz, A. M., Marsh, A. G., Gunderson, C. G., Maguen, S., & Masheb, R. M. (2020). Eating disorder screening: a systematic review and meta-analysis of diagnostic test characteristics of the SCOFF. *Journal of general internal medicine*, *35*(3), 885-893.

Mitchison, D., & Hay, P. J. (2014). The epidemiology of eating disorders: genetic, environmental, and societal factors. *Clinical epidemiology*, *6*, 89.

Morgan, J. F., Reid, F., & Lacey, J. H. (2000). The SCOFF questionnaire: a new screening tool for eating disorders. *The Western journal of medicine*, *172*(3), 164.

National Association of Anorexia Nervosa and Associated Disorders. (2021). *Eating disorder statistics*. https://anad.org/education-and-awareness/about-eating-disorders/eating-disorders-statistics/.

National Eating Disorders Association. (2018a). *Anorexia nervosa*. https://www.nationaleatingdisorders.org/learn/by-eating-disorder/anorexia.

National Eating Disorders Association. (2018b). *Binge eating disorder*. https://www.nationaleatingdisorders.org/learn/by-eating-disorder/bed.

National Eating Disorders Association. (2021a). *Eating disorders screening tool*. https://www.nationaleatingdisorders.org/screening-tool.

National Eating Disorders Association. (2021b). *Warning signs and symptoms*. https://www.nationaleatingdisorders.org/warning-signs-and-symptoms.

National Institutes of Health. (2021). *Estimates of funding for various research, condition, and disease categories (RCDC)*. https://report.nih.gov/funding/categorical-spending#/.

National Institute of Mental Health. (2017). *Eating disorders*. www.nimh.nih.gov/health/statistics/eating-disorders.shtml.

National Institute of Mental Health. (2019). *Mental illness*. https://www.nimh.nih.gov/health/statistics/mental-illness.

Raihan, N., & Cogburn, M. (2021). Stages of change theory. *StatPearls [Internet]*. StatPearls. https://www.ncbi.nlm.nih.gov/books/NBK556005/.

Rindahl, K. (2017). A systematic review of literature on school screening for eating disorders. International Journal of Health Services, 5(3), 1–-9.

Richter, F., Strauss, B., Braehler, E., Adametz, L., & Berger, U. (2017). Screening disordered eating in a representative sample of the German population: Usefulness and psychometric properties of the German SCOFF questionnaire. *Eating Behaviors : An International Journal, 25*, 81-88.

Rowe, E. (2017). Early detection of eating disorders in general practice. *Australian Family Physician*, *46*(11), 833-838.

Rural Health Information Hub. (2021). *Stages of change model (transtheoretical model)*. https://www.ruralhealthinfo.org/toolkits/health-promotion/2/theories-and-models/stages-of-change.

SCH (2021). About us: Mission, vision & values. Website protected.

Solmi, F., Hatch, S. L., Hotopf, M., Treasure, J., & Micali, N. (2015). Validation of the SCOFF questionnaire for eating disorders in a multiethnic general population sample. *International Journal of Eating Disorders*, *48*(3), 312-316.

Streatfeild, J., Hickson, J., Austin, S. B., Hutcheson, R., Kandel, J. S., Lampert, J. G., ... & Pezzullo, L. (2021). Social and economic cost of eating disorders in the United States: Evidence to inform policy action. *International Journal of Eating Disorders*, *54*(5), 851-868.

APPENDICES

APPENDIX A

SWOT ANALYSIS

SWOT Analysis

Strengths	**Weaknesses**
-Need for consistent screening method -Current screening methods are not always followed -Aligned with the facility's Mission	-Short project window time -Limited patient population -Incomplete research at implementation
Opportunities	**Threats**
-Improved patient outcome, decreased adverse health effects -Proper ED risk assessment and referral -Early detection of ED risk	-Screening inconsistency -Provider non-compliance -Patient refusal, fear, or masking

APPENDIX B

SCOFF QUESTIONNAIRE

SCOFF Questionnaire

Date:_____ Age:_____ Gender:_____

1) Do you make yourself Sick because you feel uncomfortably full? YES/NO

2) Do you worry that you have lost Control over how much you eat? YES/NO

3) Have you recently lost more than One stone (14 lb) in a 3-month period? YES/NO

4) Do you believe yourself to be Fat when others say you are too thin? YES/NO

5) Would you say that Food dominates your life? YES/NO

For positive screenings (2 or more "yes" answers) please indicate if you sent referral to Psychiatric Care Team and/or Registered Dietician.

Referral sent: YES/NO

Positive screening without referral (reason):

Please note: participation in use of this survey is strictly voluntary.

Morgan, J. F., Reid, F., & Lacey, J. H. (2000). The SCOFF questionnaire: a new screening tool for eating disorders. *The Western journal of medicine*, *172*(3), 164

APPENDIX C

PROJECT TIMELINE

Project Timeline

Pre-implementation/action phase (December 1)	-Education on SCOFF use provided to medical group NPs
Begin implementation (8-week cycle) (December 29th)	-Start SCOFF use at facility, screening admissions to acute and residential units
End week 1 (January 5th)	-Collect/analysis of data, email results to NPs
End of week 2 (January 12th)	-Collection and analysis of data -Email results to NPs -Discussion of barriers, PDSA cycle use to address barriers. -Implementation of PDSA change addressing barrier for next 2-weeks
End of week 3 (January 19th)	-Collect/analysis of data, email results to NPs
End of week 4 (January 26th)	-Collection and analysis of data -Email results to NPs -Discussion of barriers, PDSA cycle use to address barriers. -Implementation of PDSA change addressing barrier for next 2-weeks
End of week 5 (February 2nd)	-Collect/analysis of data, email results to NPs
End of week 6 (February 9th)	-Collection and analysis of data -Email results to NPs -Discussion of barriers, PDSA cycle use to address barriers. -Implementation of PDSA change addressing barrier for next 2-weeks
End of week 7 (February 16th)	-Collect/analysis of data, email results to NPs
End of week 8 (February 23rd)	-Collection and analysis of data -Email results to NPs -Discussion of barriers, PDSA cycle use to address barriers. -Implementation of PDSA change addressing barrier for next 2-weeks

Post-Implementation/action phase (February 23rd)	-Total patient admissions over 8-week implementation compared to total SCOFF screened patients. -Total positive referrals over 8-week implementation compared to total sent referrals. -Data/results provided to medical group NPs
Maintenance (ongoing)	-NPs continue use of SCOFF -Monthly data collection and discussion -Monthly PDSA cycles addressing barriers