

Improving Depression Screening in Rural Transitional Care Facility

Submitted by

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GRAND CANYON UNIVERSITY

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Abstract

Mental health screening may facilitate possible identification of depression and referrals to mental health care. At the project site, depression screening were not standardized or implemented standardly. The purpose of this quantitative quasi-experimental quality improvement project was to determine if the implementation of Pfizer's PHQ-2 depression screening tool would impact the identification of problem symptoms related to mental health disorders and referrals to mental health providers among adult patients in a transitional care facility in rural Idaho over four weeks. The project's theoretical frameworks were Peplau's theory of interpersonal relations and Michie et al.'s behavior change wheel. The total sample size was $N=114$, $n=61$ in the comparative group and $n=53$ in the implementation group. Data was obtained from the PHQ-2 screening tool. A chi-square test of independence was used to analyze the data which indicated clinical and statistically significant results $\chi^2(1) = 4.51, p = .034$. An independent t -test was used to analyze the number of referrals which were not statistically significant $t(50) = -0.96, p=.342$. However, clinical significance is found in the identification and referrals made to needed resources which did not occur prior to implementation. Based on the results, Pfizer's PHQ-2 depression screening tool might improve the identification of problem symptoms related to mental health disorders and referrals to mental health providers in this population and setting. Therefore the recommendations include sustaining the project and data analysis over six months to determine if the short project time and small sample impeded statistical significance.

Keywords: Mental health screening, transitional care unit, mental health, depression screening, older adults, Peplau theory of interpersonal relations, behavior change wheel framework, PHQ-2

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Chapter 1: Introduction to the Project

Mental health disorders in the United States are a growing public health concern. Suicide is the second leading cause of death for young people ages 10-24 years and is globally the most prevalent cause of death among older men (Cui & Fiske, 2020; Doan et al., 2020; National Institute of Mental Health [NIMH], 2019b). Major depression is a common and treatable mental disorder characterized by changes in mood, and cognitive and physical symptoms over a two-week period (Brody et al., 2018). It has been associated with high societal costs and greater functional impairment than many other chronic diseases, including diabetes and arthritis (Brody et al., 2018).

Mental health and substance use disorders were found to affect up to 20% of adults older than 65 years (Falk & Taylor-Schiller, 2019). For many families, Transitional Care Facilities (TCFs) may be the initial interaction with the mental health care system. When there is a mental health or behavioral crisis at a TCF, the patient may be transferred to the emergency department for evaluation and services before contacting their primary care physician (Hoffman et al., 2019).

Aging is characterized by avoiding diseases and disabilities to maintain high cognitive and physical function for prolonged active engagement in life; this life stage is an important period in which cognitive, physical, emotional, and social skills should be maintained (Kim & Park, 2017). During this life stage, lifestyle habits and behaviors developed over the years influence an individual's health and psychological well-being (Foster & Walker, 2021). The lack of coping and interpersonal skills in combination with experiencing adverse childhood events can impact the physical and mental development of older adults (World Health Organization [WHO], 2017). Undiagnosed or

underdiagnosed mental health disorders, such as depression and anxiety, are often mistaken as a natural reaction to life changes in the older adult leading to disabilities in adulthood or early death because of suicide (Brimblecombe et al., 2017; Centers for Disease Control and Prevention [CDC], 2021; WHO, 2017). Early identification and management of depression and other mental health disorders can be addressed by routine depression screenings according to recommendations from the U.S. Preventive Services Task Force (USPSTF) (American Academy of Family Physicians [AAFP], 2017).

The aim of this direct practice improvement (DPI) project is to evaluate and measure the impact of implementing a brief mental health screening tool in a rural TCF to facilitate early identification of mental health conditions in older adults and thus providing referrals to mental health services for improved patient outcomes. Early identification and supportive interventions are crucial as depression has often been overlook and viewed as normal in older adults, leading to poorer health, frequent hospitalizations, and increased mortality (Bowman, 2019; NIMH, 2018b).

This chapter will present the background of the problem of mental health among older adults. It will provide a discussion of the specific problem at the rural TCF and the purpose and clinical question which guided this DPI project. How the project advanced scientific knowledge and its significance are also addressed. The methodology, design, key terms, assumptions, limitations, and delimitations of the project are introduced. The chapter ends with a summary of the remainder of the project.

Background of the Project

Rural communities have limited mental health resources (Andrilla et al., 2018; Colligan et al., 2020). The lack of access to mental health care has had an impact on the

adult community. Among older adults in the United States, 20% do not have access to mental health services, which accounts for their higher mental health rates (Arbore, 2019; Gill et al., 2017; National Coalition on Mental Health & Aging, 2017). Behaviors related to alcohol and substance-use, unexplained somatic symptoms, or unclear changes in behavior have been reported as cause of visits to primary care providers or emergency departments, resulting in a possible mental health diagnosis (Beiser et al., 2019).

Cui and Fiske (2020) reported that suicide is a global public health problem, and the highest rates occur among older men. Suicide is also a major public health concern in the United States (CDC, 2018a). Even more common than suicide are suicide attempts and suicidal thoughts (CDC, 2018a; Cui & Fiske, 2020). Early detection of depression is a critical prevention strategy for risk of suicide as one of the strongest predictors of suicide risk (Cui & Fiske, 2020). In one study, approximately 6% to 12% of ED patients seeking medical treatment acknowledged suicidal ideation and 12% reported a history of a past suicide attempt (Petrik et al., 2015). A transition from ideation to attempt often occurs within the first year of ideation onset, and over half of suicidal patients never verbalized their intent (Puuskari et al., 2018).

The Joint Commission mandated that every patient presenting for emotional and or behavioral problems be evaluated for risk of self-injury to improve assessment and management of suicidal attempts (Petrik et al., 2015; TJC, 2019). In February 2016, the Joint Commission also issued a Sentinel Event Alert recommending that all medical patients in all health care settings (hospital units, primary care practices, and skilled nursing) be screened for suicide risk (NIMH, 2019b; TJC, 2019). Mental health screening during TCF was recommended and supported by the American Academy of Family

Physicians and the United States Preventive Service Task Force (USPSTF) (Newton et al., 2017; Siu & USPSTF, 2016). Nevertheless, mental health screening remains uncommon in TCFs even though research has shown that adults with chronic medical conditions report higher rates of mental health problems in comparison to their healthy peers (Herbert & Hardy, 2019).

During a quality measures review, the clinical staff in the rural TCF noticed that there were high rates of depression in the facility. Although the facility has implemented a depression screening tool on the skilled nursing units to address the patients' safety as recommended by The Joint Commission, the staff used the tool for depression monitoring and did not screen all admissions to the transitional care unit. With this practice, they missed opportunities for early detection and implementation of recommended best practices, such as safety planning as a preventive strategy. Incorporating mental health screening tools in the TCF that are specific toward the older adult population may address The Joint Commission's recommendation of increasing patient safety by decreasing suicide risk (Gill et al., 2017; Herbert & Hardy, 2019; U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau, 2019).

Problem Statement

The literature indicated that mental health screening in TCFs may improve early detection of mental health conditions. It was not known if or to what degree the implementation of Pfizer's PHQ-2 depression screening tool would impact the identification of problem symptoms related to mental health disorders and referrals to mental health providers among adult patients. Based on Center for Medicare and

Medicaid Services (CMS) quality measures embedded in the project site Minimum Data Set, depression measures triggered high within the project site at 18.05% and at 2.38% to 20.1% of short-stay and long-term stay residents receiving antipsychotic medications (Medicare List, n.d.). These ratings are higher than the state and national average of 5% to 17% (Health Care for People, 2021). Residents are routinely screened every 90 days on the PASRR (Pre-Admission Screening and Resident Review) tool yet was not consistently screened for depression during admission.

Mental health disorders account for 25% of all health-related disabilities worldwide, and the mental health disorders with the highest rates are major depression (5.6%) and anxiety (4%) (Kroenke & Unutzer, 2017). The rise in mental disorders is concerning as causes of mental illness have been linked to stressful, adverse childhood events, such as unhealthy family relationships, trauma, poverty, and community distress (Lal et al., 2017; Martinez & Opalinski, 2019). In rural communities, factors, such as poverty, stigma, and lack of access to mental health resources, increases the risk for mental health issues that remain undiagnosed, underdiagnosed, and frequently under-treated (Kelleher & Gardner, 2017). Chun et al. (2016) cited high therapists' turnover rates, lack of services in HRSA-designated shortage areas, limited health insurance coverage, and limited availability of hours as contributing factors for mental health concerns.

The quality improvement project contributed to the identification of mental health conditions by increasing rural nurses' awareness of the impact of undiagnosed mental health conditions on older adults in efforts to optimize mental-health well-being. Implementation of Pfizer's PHQ-2 screening tool in a rural TCF may benefit rural

communities by identifying at-risk patients and providing patients with available community mental health resources and appropriate referrals, thus saving lives.

Purpose of the Project

The purpose of this quantitative quasi-experimental quality improvement project was to determine if the implementation of Pfizer's PHQ-2 depression screening tool would impact the identification of problem symptoms related to mental health disorders and referrals to mental health providers among adult patients in a transitional care facility in rural Idaho over four weeks. This project was translated from evidence in the literature supporting the utilization of specialized mental health screening instruments in TCFs to facilitate early identification of mental health conditions, treatment, and access to mental health care in rural communities (Gill et al., 2017; Hoffman et al., 2019; Kirkland et al., 2018; O'Loughlin et al., 2019). The findings from evaluation of the literature demonstrated that the use of brief mental health screening tools, such as PHQ-2, facilitates early identification of depression. The PHQ-2 tool demonstrated strong reliability, accuracy, and concurrent predictive validity in psychiatric consultation, showing that early detection is a critical preventive strategy (Leon et al., 2017).

The PHQ-2 screening tool (independent variable) was measured as completed or not completed during the project implementation. The identification of mental health condition (dependent variable) was measured by PHQ-2 assessment scores and the number of mental referrals. Nurses took part in an educational intervention prior to implementing the PHQ-2 that included a description and purpose of screening tool using adult learning principles and communication techniques. This education was provided as

a review of the PHQ-2 instruction sheet and was developed by Bright Futures™ (American Academy of Pediatrics, n.d.).

The quantitative method was used to help identify how many adults were administered the PHQ-2 screening tool by the nurses and how often the nurses referred patients to the nurse practitioner or physician for further evaluation based on results of the PHQ-2 tool. A quasi-experimental design was used to evaluate the intervention of training the staff on the mental health screening tool prior to implementation and the results after the intervention, and because the project population (TCF patients), there was no randomization or control group. In quasi-experimental designs, a pre- and post-survey can be used to measure the effects of an intervention as was the case in this project (Rutberg & Bouikidis, 2018). It was determined that the DPI project would achieve meaningful and sustainable patient outcomes by implementing the PHQ-2 screening tool in the TCF aiming to address the growing concern of the facility staff in improving quality measures related to depression and limited mental health care among rural populations. The quality improvement project contributed to the knowledge of using skilled nurse assessments of older adults to identify individuals at risk for or undiagnosed with mental health conditions, thus improving quality of life of older adults.

Clinical Question

Mental health symptom presentations can be unique in their level of complexity and at times, difficult to diagnose due to the advancing age of adults and less willing to report feelings of depression (Chun et al., 2017; Crick et al., 2020). Older adulthood can be marked by the impacts of experimental use of alcohol and other illicit substances, risky behaviors, and mood or behavior changes which affect cognitive and physical

functioning, disability and chronic illness, and social activities (Barimbing et al., 2019; Kim & Park, 2017). During this life stage, lifestyle habits and behaviors developed over the years influence these individuals' health and psychological well-being (Foster & Walker, 2021). Early identification and timely treatment of mental health concerns are crucial, because when mental illness is undiagnosed or poorly managed, the risk for experiencing negative effects on psychosocial functioning and increased risk of developing other psychiatric disorders increases (Gill et al., 2017; NIMH, 2018b). Herbert and Hardy (2019) found mental health screening programs could generate clinical benefits beyond identifying depressive symptoms or patients in need of mental health treatment. In certain instances, screening programs may also be tailored to provide patient- and caregiver-reported information that can help clarify diagnostic impressions, identify psychosocial issues contributing to medical presentations, and inform multidisciplinary interventions (Herbert & Hardy, 2019).

The quantitative project, using a quasi-experimental design, sought to address the problem at the TCF by evaluating the impact of the PHQ-2 mental health screening intervention on identification of mental health disorders in older adults. The following clinical question guided this quantitative project:

Q1: To what degree does the implementation of Pfizer's PHQ-2 depression screening tool would impact the identification of problem symptoms related to mental health disorders and referrals to mental health providers among adult patients in a transitional care facility in rural Idaho

The independent variable was the implementation of the PHQ-2 for four weeks. The dependent variable was the identification of mental health disorders. The dependent variable was measured by completed PHQ-2 scores and mental health referrals.

Advancing Scientific Knowledge

Mental health disorders are a growing concern worldwide, and the prevalence of individuals experiencing mental health conditions in the United States is growing at an alarming rate of an estimated 10-20% (WHO, 2019). Among the mental health disorders, depression is of the most concerning as it is a risk factor for suicide, which is the second leading cause of death among adolescents and globally the highest cause of death of older men (Doan et al., 2020). Kelleher and Gardner (2017) identified poverty, stigma, and lack of access to mental health resources may negatively impact those living in rural communities and place them at-risk for mental health issues that remain undiagnosed, underdiagnosed, and frequently under-treated. In accordance with guidelines from the WHO and the USPSTF, the AAFP (2017) recommended that the general adult population and those 65 years and older receive routine depression screening. However, literature showed these recommendations were not being met (Maurer et al., 2018; Samples et al., 2019). Therefore, this project provided data on how regular screening impacted patients' quality of life and health outcomes.

Peplau's theory of interpersonal relations (TIR) served as the framework for this nurse-led implementation of the PHQ-2 mental health screening tool at the TCF by establishing a trusting, therapeutic relationship which is essential to patient care (Peplau, 1998). Peplau's TIR is used to identify the effects anxiety levels have on perception and learning and nursing initiatives and nurses' comfort level of initiating discussion about

mental health with adults (Pehlivan & Guner, 2016; Peplau, 1998). The concept of communication in TIR assists with developing a therapeutic patient-nurse relationship for facilitating the problem-solving skills of the patient (Pehlivan & Guner, 2016), which impacts patients' health behavior intentions and the perceived ability in motivation and decision-making to address coping skills (Johnson & Possemato, 2019).

A therapeutic relationship is needed for motivational interviewing required for assessing and evaluating childhood adversities, facilitating assistance with, and supporting problem-solving skills, and assessment skills to evaluate for somatic as well as psychosocial complaints that factor into mental well-being (Johnson & Possemato, 2019; Pehlivan & Guner, 2016; SAMHSA, 2018). The TIR model was used to design the pre-intervention nursing education regarding the purpose of PHQ-2 screening, how to implement and review the tool, and the benefits of providing this service. The best method to assess for disorders is the structured comprehensive interview, which is rarely applied in the clinical setting as clinicians describe them as being time-consuming (Colligan et al., 2020; Doan et al., 2020). Thus, creating an opportunity for the utilization of a valid and reliable brief mental health screening tool in efforts to identify if further detailed assessment was warranted (Burge et al., 2019; Coulton et al., 2018; Maurer et al., 2018).

In addition to Peplau's TIR, Michie et al.'s (2011) behavior change wheel (BCW) framework and behavior change techniques was used to identify specific behavioral targets of clinical staff that create barriers to the use of evidence-base PHQ-2 screening tool (Mangurian et al., 2017). Michie et al.'s (2011) BCW framework steps include identifying the problem, which was the need to identify mental health screening questions

for adults; targeting the behavior that would most likely bring about change to address the problem through simulation training; detailing the specified target behavior; recognizing what needs to change in order to achieve the target behavior; identifying policy categories that could support the intervention function; identifying behavioral change techniques such as motivational interviewing; and identifying the mode of delivery of the intervention and how its integrated, for example in-services on developmental stages of the older adult and appropriate nurse interventions (Mangurian et al., 2017; Michie et al., 2011; Weatherly & Smith, 2019). The BCW framework aided in identifying the specific behaviors that may create barriers to implementing the integration of the PHQ-2 in the TCF.

The DPI project of a nurse-led implementation of the PHQ-2 in the TCF advanced population health outcomes by enhancing early identification of the need for mental health services. The project, thereby, mitigated risks of early death or chronic illnesses associated with depression, substance abuse, and suicide. The aim of the DPI project was to amplify nurses' cognizance of the impact undiagnosed mental health conditions have on patients with the intention of promoting mental health well-being and patient safety among a rural older adult community.

Significance of the Project

In rural communities, mental health issues, such as depression, anxiety, and suicide are often undiagnosed, underdiagnosed, or under-treated due to lack of access to mental health services (WHO, 2017, 2019). Barriers to access to services in the rural communities include the shortage of behavioral and mental health specialists, culture, and stigma, leading to patients not receiving mental health care; further, this has also been

linked to chronic medical conditions that interfere with normal healing and functioning (Nager et al., 2017). Rural TCFs are ideal locations for mental health assessments of those patients admitted for rehabilitative care to occur as part of routine assessments conducted by nurses (Liu et al., 2018; Rodriguez & Gamboa, 2020). Screenings would facilitate a healthcare culture that reduces and mitigates the stigma associated with mental health problems, which is particularly a concern among older adults, and provide opportunity for early identification and treatment for all (Nager et al., 2017).

As a first step in addressing this issue, the PHQ-2 screening tool guided nurses in determining if further evaluation was warranted. Individuals screened as likely having depression or another mental health disorder were referred to a nurse practitioner or physician to determine disposition using the PHQ-9 or for immediate intervention such as telepsychiatry. Telepsychiatry could improve access to behavioral health resources and has been associated with reducing stigma and reducing barriers for transportation (Robinson et al., 2017). It could also help address disparities of access to mental health care, promote early identification and intervention, and mitigate the severity of incidence of unmet mental health needs within rural communities (Robinson et al., 2017).

The DPI project contributed to the field of skilled nursing by affording nurses the screening tool necessary to rapidly identify older adults who were at risk for mental health issues and presented to the TCF for reasons other than mental health crisis. Rural skilled nursing facility nurses and nurse practitioners are expected to think critically, are skilled, and knowledgeable in all areas of nursing in the care of patients of all ages and conditions (Beks et al., 2018; Crumb et al., 2019). For this reason, the collaborative relationship between the TCF nursing staff, nurse practitioner, and physician in

facilitating a nurse-led mental health screening tool encouraged nurses' professional growth while improving patient outcomes.

Rationale for Methodology

This project used a quantitative methodology with a quasi-experimental design. Quantitative methodologies are used to describe and explain phenomena that are being observed by analyzing the relationship between variables and outcomes in the form of numerical data to identify how much, how often, how many, or average response (Zaccagnini & White, 2017). Qualitative methodologies examine something of interest, what worked, and how useful was the project; they provide context to quantitative data (Zaccagnini & White, 2017).

In this project, the quantitative methodology was effective for identifying how many participants screened positive for mental health disorders or suicide risk and how many received referrals or treatment. The quantitative data supported efforts to demonstrate the feasibility of implementing a screening protocol. Using the quantitative methodology, the data were analyzed consisted of individuals who had a PHQ-2 screen, individuals with a positive PHQ-2 screen, and individuals diagnosed with a mental health condition using retrospective chart reviews. Descriptive statistics were used to analyze the clinical and sociodemographic characteristics of the participants in the full sample (positive vs. negative screening), in those with positive screen results, and in those with mental health condition (Jha et al., 2019). Nonparametric statistical analysis was also conducted using percentage, median and standard deviation. The data were used to support the use of the PHQ-2 screening tool as a routine screening process among patients appearing at the TCF.

The methodologies of qualitative and mixed methods were reviewed but not selected for this project. The qualitative method may aid in identifying factors or barriers to nurses screening TCF patients for mental health risks (Zaccagnini & White, 2017). The mixed method quantitative methodology would have been used to evaluate data for the outcome by identification of an amount, how many, how much, how often, or an average in combination with the qualitative methodology seeking to provide contextual meaning of the data, what factors influenced the success or failure of the intervention, and how the project was useful in meeting the outcome (White & Zaccagnini, 2017). While these methods would have facilitated investigation into the nursing staff's self-reported views, attitudes, motivation, and confidence towards mental health screening, these methods would require up to one year to implement the project and evaluate and analyze the outcomes (Shaw et al., 2020). Other outcomes evaluated using both the mixed methods methodology and the qualitative methodology would have been examining the perceptions of staff about how education designed to communicate the evidence for screening for mental health facilitated a behavior change in screening implementation (Shaw et al., 2020).

Due to time constraints of the DPI project, possible costs, and challenges of quantifying descriptions, the quantitative methodology was selected as the best method for this project. The quantitative methodology was effective for identifying how many participants screened positive for mental health disorders or suicide risk and how many received referrals or treatment. The quantitative data supported efforts to demonstrate the feasibility of implementing a screening protocol.

Nature of the Project Design

The quasi-experimental design was used to establish a cause-effect relationship among variables without manipulating the independent variable or randomly assigning groups in the implementation of PHQ-2 screening in the TCF (Machluf et al., 2017). The process included collecting and sharing big data retrospectively from electronic health records (EHRs), research and analysis of the data to support the sustainability of the screening protocol (Machluf et al., 2017). The data were used to aid hospital administrators, health care providers, and TCF nursing and staff in understanding the prevalence of older adults experiencing symptoms of mental disorders and the factors that may prevent access to mental health evaluation and care. A workshop and/or in-service on the prevalence of adult mental health, understanding the purpose and function of the PHQ-2 tool, and review of appropriate communication techniques was provided prior to implementing the mental health screening protocol in the TCF. The PHQ-2 screening tool was selected due to the high sensitivity (83%) and specificity (92%) for detecting depression and mood disorders (Jha et al., 2019).

The PHQ-2 screening tool is a two-item questionnaire that asks the following: how often in the past two weeks had the respondent experiences (a) little to no interest or pleasure in doing things and (b) feeling down, depressed, or hopeless (Bridges et al., 2019). Responses range from 0 (not at all) to 3 (nearly every day) for a total of 6 cumulative points (Bridges et al., 2019). A cut score off 3 is recommended as a suggestion of probable depression, requiring further evaluation and screening using the PHQ-9 tool, and the tool has demonstrated good psychometric properties with sensitivity and specificity as a rapid first-line screening tool for major depression in adults (Arrieta

et al., 2017). The quasi-experimental design for this project included administration of the PHQ-2 screen to all TCF patients over the age of 18 years who did not meet the exclusion criteria. Completed PHQ-2 surveys were collected, and the number of screens were compared to the number of patients admitted to the TCF. Descriptive data, such as demographics, were sorted based upon age and gender. Screens administered were evaluated and analyzed for positive or negative scores on the PHQ-2 over a four-week period. Of those surveys with positive scores, data were also reviewed for whether referrals were made. This design was the best approach for the project as the numerical data could be a powerful representation of the situation due to the preciseness and lack of ability to be manipulated as in textual data (Greener, 2013).

Definition of Terms

Definitions for the terms used in this project were developed from peer-reviewed, scholarly articles. The definitions were determined to be valid as they provide context, relevancy and meaning. Often terms in health care can have more than one meaning, which can be confusing to the reader. Therefore, the following terms were operationally defined to provide standardization and clarity in this project.

Older Adult

An individual greater than 65 years (Chalise, 2019). This life stage is strongly influenced by extrinsic or environmental factors resulting in molecular and cellular damage throughout the life course as well as intrinsic genetic factors, including predispositions to certain health conditions, decrease in physical and mental capacity, growing risk of disease and ultimately death (Foster & Walker, 2021; WHO, 2017).

Electronic Health Record (EHR)

The EHR is an electronic version of a patient's chart that contains information such as patient's medical and treatment histories, diagnosis, medications, and diagnostic test results (HealthIT.gov, 2019).

Depression

Depression is a common but serious medical condition that negatively affects how one feels, thinks, and behaves in handling daily activities. It can cause feelings of sadness and or loss of interest in activities that once was deemed pleasurable (NIMH, 2018).

Mental Health Screening

Mental health screening is an examination of an individual's emotional and mental state. The examination consists of a series of questions that inquire about mood, feelings, and behaviors that may have changed over time. Screens are used to evaluate risks for mental health disorders (Herres et al., 2018; National Alliance on Mental Illness (NAMI), 2021).

Mental Health Referrals

A mental health referral is a recommendation to a patient to see a provider who is skilled in mental health care for further evaluation and or treatment. A mental health referral can also include recommendations to community resources that help with those experiencing mental health conditions, such as depression or anxiety (CDC, 2018a; Fairchild et al., 2019; Herres et al., 2018).

Patient Health Questionnaire (PHQ) 2-Item Screening Tool

The PHQ-2 is a specialized tool used for assessing for depression using two questions: how often in the past two weeks had the respondent experiences (a) little to no

interest or pleasure in doing things; and (b) feeling down, depressed, or hopeless.

Responses range from 0 (not at all) to 3 (nearly every day) for a total of 6 cumulative points (Bridges et al., 2019). The cut-off score for depression is 3.

Rural Community

Rural communities can be defined as all population, housing, and territory from densely settled small towns to more sparsely populated and remote areas not built up within an urban area boundary. Frequently, they are at a distance from various resources (Broffman et al., 2017; Health Resources & Services Administration, 2020).

Assumptions, Limitations, Delimitations

Several assumptions are relevant to this DPI project. First assumption, it was assumed that implementation of the PHQ-2 screening tool in the TCF population would facilitate early identification of mental health conditions in patients presenting to the TCF for reasons other than mental health concerns (Dueweke et al., 2018). The second assumption was that screening with the PHQ-2 would improve access to mental health care by receipt of referrals and patient education. As there was a shortage of mental health providers in the area, the ability to refer to local providers may be limited. The third assumption was that all patients who presented to the TCF would be screened with the PHQ-2 screening tool. According to the National Alliance on Mental Illness (2021) approximately 50% of mental health conditions begin by age 14. Mental health screening during this age of development allows for early identification of mental health risks, leading to treatment and improved outcomes (National Alliance on Mental Illness (NAMI), 2021).

Limitations of the project included the limited timeframe of four weeks, possible small sample size, and supply of local mental health specialists. The utilization of quantitative statistical analysis may have provided correlation between the variables of number of screens completed, the screening scores, and the number of referrals, but it may not have provided the causal relationship between the variables (Theofanidis & Fountouki, 2018). Other limitations could have been variability in how the PHQ-2 screening tool was administered. It may be administered electronically in the EHR or by paper questionnaire. If administered by paper, the questionnaire would need to be scanned into the secure document management software, DocuWare.

Delimitations of the project include the type of facility in which the project was implemented project, a TCF and the type of screening tool administered. Another delimitation was the age range of the participants, 18 years and older. By including these individuals, the aim to improve mental health care in the rural community was met through identification and treatment interventions, in addition to interprofessional collaboration among stakeholders.

Summary and Organization of the Remainder of the Project

Transitional Care Facilities in rural communities and critical access hospitals often do not have dedicated psychiatric support staff, have limited access to mental health resources, and staff often acknowledge gap in skills in assessing and treating patients experiencing mental health crises (Burge et al., 2019; Chun et al., 2017; Colligan et al., 2020). Implementation of the PHQ-2 depression screening tool would help improve screening and risk detection in individuals as an important step toward preventing this highly painful experience for all involved (Dueweke et al., 2018). There was some

evidence that the use of screening and intervention for mental health disorders or health compromising behaviors could improve health outcomes (Webb et al., 2016).

Mental health disorders in the United States are a growing public health concern (Doan et al., 2020; NIMH, 2019b). The lack of coping and interpersonal skills in combination with experiences of adverse childhood events could impact the physical and mental development of older adults (WHO, 2017, 2019). Undiagnosed or underdiagnosed mental health disorders, such as depression and anxiety, could lead to disabilities in adulthood or early death because of suicide (Brimblecombe et al., 2017; Centers for Disease Control and Prevention [CDC], 2021; WHO, 2017). Older adults with undiagnosed or undertreated depressive symptoms may experience inadequate rehabilitation because of poor participation in rehabilitative process (Liu et al., 2018). While the literature indicated that mental health screening in the TCFs may improve early detection of mental health conditions, it was not known if implementing the PHQ-2 screening in this rural TCF was feasible. The data from this quantitative quasi-experimental project supported the need for implementing a brief mental health screening tool in the TCF. It was supported by Peplau's TIR and Michie et al.'s (2011) BCW.

Chapter 2 will provide an exploration of the current literature on adult mental health, including the use of brief mental health screening tools and access to mental health resources and providers. Chapter 3 will present the project methodology in more detail, including data collection and analysis procedures. Chapter 4 will present the results of data analysis. Chapter 5 will present the interpretation and implications of the results. Chapter 5 ends with recommendations for future projects and practice based on the results of this paper.

Chapter 2: Literature Review

Mental health disorders in the United States are a growing public health concern (Kroenke & Unutzer, 2017; NIMH, 2019b). Older adults are at-risk of experiencing symptoms of undiagnosed or misdiagnosed mental health conditions that could lead to incidents of poorer health and suicidal ideation or suicide (NIMH, 2018b). Older adults with multiple chronic conditions are more likely to experience depressive symptoms than older adults without multiple chronic conditions (Markle-Reid et al., 2020).

The lack of access to behavioral healthcare can affect the health of a community as well as the health of the individual. In areas affected by shortage of mental health providers, such as in rural communities, primary care providers are thrust into the role of primarily treating behavioral issues (O'Loughlin et al., 2019). Approximately 96% of U.S. counties have a shortage of psychiatrists, and other mental and behavioral health professionals (Fairchild et al., 2019). The increasing rate of mental health disorders have had an impact on the quality-of-care TCF staff are able to provide, thus playing a critical role in addressing the mental health concerns of older adults (Gill et al., 2017; Kirkland et al., 2018; O'Loughlin et al., 2019). This increase may reflect unmet mental health needs and barriers to accessing mental health services in the community.

For many families and adults, TCFs are often their first point of contact with the mental health care system (Hoffman et al., 2019). Approximately 20.6% of adults received a mental health diagnosis, and only 44.8% of those patients ever receive mental health services with an average delay of 4 -23 years between onset of mental illness and treatment (Johnson & Possemato, 2019; NAMI, 2021; National Coalition on Mental Health & Aging, 2017). The rise in mental health conditions as a national crisis requires

system-wide reforms, including more focus on prevention and increased integration of mental health care into TCF care for older adults (Hoffman et al., 2019).

In a local rural TCF, the facility had triggered high in the quality measures related to depression and other behavioral health issues. The region had limited known community mental health resources to aid in the management of mental health care among older adults. The use of brief mental health screening tools could identify unrecognized, significant medical conditions, resulting in earlier diagnosis and treatment, decreasing morbidity and mortality due to the disease, and ultimately, culminating in a decrease in disease burden in both the individual and society (Burke et al., 2019; Colligan et al., 2020; Maurer et al., 2018). This project presented a tremendous opportunity to identify those at risk and connect them with mental health resources, supporting the notion of early detection is a critical preventive strategy in health care (Chun et al., 2017).

The overall focus of this DPI project was to identify those adults who needed mental health services but had not been screened. Another aim was to provide recommendation for referrals and provide access to mental health resources available in the community. The purpose of this quantitative quasi-experimental quality improvement project was to determine if the implementation of Pfizer's PHQ-2 depression screening tool would impact the identification of problem symptoms related to mental health disorders and referrals to mental health providers among adult patients in a transitional care facility in rural Idaho over four weeks.

Chapter 2 includes discussions on the concepts of adult stages of development, the challenges of mental health symptom presentation in older adults, and nurses' roles in screening to improve identification of mental health conditions. Mental health symptom

presentations can be unique in their level of complexity and at times, difficult to diagnose due to the life stage of the adult (Barimbing et al., 2019; Gill et al., 2017). Aging or older adulthood is a life stage beginning from age 60 years that is marked by lifestyle habits and behaviors developed during adolescent years (Kim & Park, 2017; Webb et al., 2016). Experimental use of alcohol and other illicit substances, risky behaviors, and mood/behavior changes that are often considered common amongst adolescents impact the mental health development of the older adult (Barimbing et al., 2019; Kim & Park, 2017). As a result of these behaviors, it's impact over time may be factors associated with cause of first contact with mental health for safety and evaluation of behavior.

This chapter is organized to address the current literature associated with rural mental health, a review of brief mental health screening tools such as PHQ-2 item screener, and access to mental health care providers. A systematic literature survey was conducted accessing the following databases: Directory of Open Access Journals, Medline, APA PsycInfo, Cumulative Index of Nursing and Allied Health Literature (CINAHL) Complete, Google Scholar, Science Direct, and Complementary Index. Keyword search combinations included Transitional Care Facility and mental health screening and adults, mental health, older adults, depression, and PHQ-2 screen. Search terms also included mental health nursing, Peplau's theory of interpersonal relations, and Michie's behavior change wheel framework. The date range was initially broad to include any literature related to mental health issues as limited nursing literature published on the concept of mental health screening and transitional care facilities was noted when CINAHL and GOOGLE Scholar literature searches were conducted. The literature was then narrowed to date range of 2017-2021 and was limited to full-text and

peer-reviewed articles published in English. The Grand Canyon University library databases were also searched using the phrases nurse's role and mental health screening in skilled nursing, limiting the search to peer-reviewed journals and full text articles published in English. For the purposes of this literature review, 50 studies, including seminal resources, were evaluated and reviewed.

Worldwide, mental disorders were becoming more prevalent in the adolescent community as well as in the adult age or older community. According to the NIMH (2016), one in five (44 million) adults in the United States experience mental illness, and an estimated 49.5% of adolescents between the ages of 13-18 years are diagnosed with a mental disorder (i.e., mood issues, anxiety, eating issues, impulse control, substance use). Mental disorders in older adults are often difficult to detect due to the level of complexity of co-morbidities and chronic illnesses that individuals experience at varying degrees in daily life, often resulting in behavior changes viewed as a normal part of aging (Barimbing et al., 2019; Kvael et al., 2017; National Institute of Mental Health, 2018b; Samples et al., 2019). Psychosocial and biological factors that may affect the diagnosis of depression in the older adult are somatic complaints, history of cardiovascular disorders, diabetes, polypharmacy, and geographical location (Burge et al., 2019; Kvael et al., 2017; Palinkas et al., 2019; Samples et al., 2019).

In 1968, Wilson and Junger reported on established guidelines developed by the WHO, *Principles and Practice of Screening for Disease*. These guiding principles are used today in the evaluation of how medical conditions ought to be screened and how screening should be implemented (Wilson & Junger, 1968). Within these guidelines, the WHO explained that screening should identify people with unrecognized, significant

medical conditions (Wilson & Junger, 1968), which would result in earlier diagnoses and treatment, decreased morbidity and mortality, and ultimately a decrease in disease burden for both the individual and society (Johnson & Possemato, 2019).

The difficulty in making a correct mental health diagnosis has been attributed to clinical impressions of atypical symptomology, such as anxiety, and unspecified somatic symptoms with no known etiology (Samples et al., 2019). Johnson and Possemato (2019) made the case for the necessity for mental health screening given the prevalence and significant medical, psychosocial, and economic burden of mental health disorders on the individual and society. The literature demonstrated an association between childhood adversity and functional and structural changes of the nervous system leading to a heightened predisposition for mental disorders (Barimbing et al., 2019; Beutel et al., 2017; Lal et al., 2017). It was also suspected that early negative life events resulted in cognitive deficits, which in turn may influence suicidal behavior (Beutel et al., 2017). Beutel et al. (2017) described the buffering effects of resilience to childhood adversities on distress and physical symptoms using the effects of supportive and loving parental care, linking positive long-term outcomes, such as self-reliance, adaptive emotional regulation, and mental health in adulthood.

Globally, rural older adults were identified as at-risk for mental health concerns (Ferguson et al., 2019). The lack of access to behavioral healthcare in rural communities is a risk factor and has had an impact on TCFs. In rural communities, EDs meet the description of safety nets that provide care to populations that would not otherwise have access to healthcare, seeking to address the behavioral health disparities (O'Loughlin et al., 2019). Rural and community TCFs have limited mental health resources. The

prevalence of mental health diagnosis in adults occur at a rate of 20.6%, and of those individuals only 44.8% ever receive mental health services (Johnson & Possemato, 2019; NAMI, 2021; National Coalition on Mental Health & Aging, 2017). Early detection is a critical prevention strategy, particularly as most people who committed suicide visited a healthcare provider months before their death (Chun et al., 2016, 2017; Cui & Fiske, 2020; Leon et al., 2017). There was a tremendous opportunity to identify those at risk and connect them with the appropriate mental health resources in TCFs.

The ineffective management stressors play a role in difficulties of detecting and diagnosing mental health issues as well as family's perception of behavior changes in the older adult as common for this age group (Barimbing et al., 2019). Ineffective management of childhood and adolescent adverse stressors has been linked to chronic disease and illness later in life, with mental illness ranking first for causes of disability (Martinez & Opalinski, 2019). Nurses' understanding of adversities and distress are essential to supporting patients in their ability to manage those stressors when providing tools that support recovery (Martinez & Opalinski, 2019). Their contribution empowers the patient to make informed health decisions by considering resources that improve mental health literacy, such as information related to environmental, relations, and emotional well-being that supports healthy and positive attitudes (Silva et al., 2020).

Theoretical Foundations

A common concept noted in nursing theories is communication. Communication is a cornerstone of the interpersonal relationship in emergency nursing where tact and skilled communication between nurses and patients (Senn, 2013) are important for transactions to occur. According to Pehlivan and Guner (2016), the applicability of many

nursing theories to psychiatric nursing, such as Hildegard Peplau's theory of interpersonal relations, depend on the patient and the mental health issue at the time (Peplau, 1998). Peplau's TIR, which is used primarily in psychoanalysis and psychotherapy, plays an important role in providing the framework in psychiatric nursing practice for understanding dilemmas that patients experience and in what transpires during the development of the nurse-patient therapeutic-relationship (Peplau, 1998). The communication skills required to facilitate the nurse-patient therapeutic relationship with patients and or their family is important in helping patients make sense of and learn from their responses to health and illness experiences to develop problem-solving skills in the face of adversity and stress (Peplau, 1998).

Peplau's (1952) TIR consists of the following phases necessary in establishing the nurse-client relationship beginning with pre-orientation. In this stage, the nurse initiates the therapeutic relationship through self-identification, stating purpose, nature, and time available for the patient, and assessing their own preconceptions that impact the relationship (Nelson, 2018; Peplau, 1952, 1998). Within the orientation phase, client data are gathered, nursing diagnoses are developed, and the presented problem or issue is defined (Nelson, 2018). It is in this phase that the nurse's behavior signals a pattern of receptivity and interest or non-interest in the patient's concerns (Moreno-Poyato et al., 2018; Nelson, 2018). The working phase is also the therapeutic phase when nurse's role as advocate or teacher are employed and the aspect of interpersonal communication is critical in tapping into the needs of patients for respect, dignity, and the need to avoid feelings of shame, embarrassment, and humiliation (Moreno-Poyato et al., 2018; Nelson, 2018; Peplau, 1998). Finally, there is the resolution phase, which consists of termination

and transitioning in the closure of the nurse-patient relationship (Nelson, 2018; Peplau, 1952, 1998). In this final stage, there is a reduction of interactions as needs are met that require some nurse reflection to facilitate discharge plans that convey appropriate information to reduce stress and uncertainty in the patient (Nelson, 2018; Peplau, 1952, 1998).

The nurse-patient therapeutic relationship is the foundation for improvement in patient satisfaction, quality of care, improvement in levels of anxiety and depression, thus enhanced overall quality of care that incorporates nurse accountability for a therapeutic relationship with a patient that is essential in achieving quality outcomes (Kornhaber et al., 2016; Senn, 2013). Reluctance to implement or review mental health screening may exist when there is lack of confidence or discomfort in talking about mental health, perceived time constraints, and limited knowledge of the resources available in the community (Beks et al., 2018; Colligan et al., 2020; Smith & Meeks, 2019). Using Peplau's TIR in the TCF setting guided the nurses in implementating the PHQ-2 screen using a brief nurse-patient relationship of mutual trust facilitating the patients' independence by assisting them in making sense of and learning from their experiences (Peplau, 1998). In this project, TIR was also used to encourage positive health behaviors as well as communicate proactively with the patients and their families by utilizing empathy, assertiveness, and active listening (Senn, 2013).

The transition of educational initiatives and innovation into clinical practice such as the implementation of brief mental health screenings in the TCF as a preventive strategy, can be a slow process to navigate and implement (Murphy et al., 2017). The best method to assess for disorders is the structured comprehensive interview, which is rarely

applied in the clinical setting as clinicians describe them as being time-consuming (Lake & Turner, 2017; Margolis et al., 2018; Markle-Reid et al., 2020). Therefore, to facilitate behavior change, Michie et al.'s (2011) behavior change wheel framework and behavior change techniques was used. The BCW was grounded in behavior change theory and is used to identify specific behavioral targets of clinical staff that create barriers to the use of an evidence-base screening tool and design interventions to improve transition of training to clinical practice (Mangurian et al., 2017).

The eight steps of the BCW framework include identifying the problem (Michie et al., 2011). In this project, the problem was the TCF nurses' lack of comfort with mental health screening questions. Second, is targeting the behavior that would most likely bring about change to address the problem (Mangurian et al., 2017; Michie et al., 2011). This was performed by providing instructional pamphlet on the use of the Patient Health Questionnaire tool. Details on the specified target behavior are then considered (Mangurian et al., 2017; Michie et al., 2011), which was the implementation of the PHQ-2 screening tool. Following these actions, there needs to be recognition of what needs to change in order to achieve the target behavior (Michie et al., 2011), which was communicating with patients. Once the behaviors that needed to change are identified, policy categories that will support the intervention function must be put in place (Mangurian et al., 2017; Michie et al., 2011). In this project, the policy established was routine mental health screening of patients, which meet National Patient Safety Goal of The Joint Commission criteria 15.01.01 (The Joint Commission, 2019). The final two steps are identifying behavioral change techniques and the mode of delivery of the intervention. It was determined that motivational interviewing integrated into in-services

would be an appropriate nurse intervention that would address the need and lead to change.

The steps of the BCW framework assisted in developing the educational initiative teaching the TCF nurses regarding the implementation of the PHQ-2 into practice at the project site. The BCW framework aided in identifying the specific behaviors that may have created barriers to implementing the integration of brief mental health screening tool in the TCF which may need to be addressed as well as interventions to address the barriers, thus affecting changes in clinical staff behavior. Other interventions, such as developing an accountable environment through the use of EHR alert systems, as a cost-effective, evidence-based interventions that could be feasibly implemented and sustained to improve care for this vulnerable population were also considered (Gilmour et al., 2019; Mangurian et al., 2017). The goal of nurse staff behavior change is to increase identification of mental health conditions, improve access and identify helpful interventions and resources for individuals in need (Banh et al., 2019). Behavior change is likely to be optimal when all factors are influenced positively, providing a cascading effect of improved capability of the staff, enhanced opportunities, and stimulating motivation to improve the frequency of mental health screens of patients presenting to the TCF with or without symptoms associated with mental health (Musker et al., 2020).

Review of the Literature

The focus of the literature review was on the selection and implementation of a valid and reliable mental health screening in a transitional care facility. Nearly one in five persons in the United States resides in a rural area, and many of those live in remote or underserved areas (CDC, 2018a; Crumb et al., 2019; Health Resources & Services

Administration, 2020). Factors, such as time and distance, can create financial burdens on families resulting in suboptimal mental health care (Margolis et al., 2018). Each year, an estimated 25-40% of adults experience a mental or behavioral health issue, and of those, approximately 70% will not receive care (NAMI, 2021; NIMH, 2016, 2018, 2019).

Despite the large numbers of older adults affected by mental health conditions and the rapidly aging population, there are currently just over 8,300 practicing psychiatrists in the United States (Margolis et al., 2018).

In rural communities, mental health concerns are a significant public health burden (Johnson & Possemato, 2019). Identification of the scarcity of resources for mental health care needs in rural areas of the US was noted as most severe since it leads to burdens on financial and human resources. Edmonson et al. (2017) acknowledged the global inadequacies of distribution of financial resources and infrastructure in addressing mental health issues. The infrastructure includes human resources, the behavioral and mental health providers, allied health workers and nurses which is significantly underfunded, thus adversely affecting individuals who live in rural areas (Edmonson et al., 2017). Rural areas frequently do not attract specialists and health care workers since there are limited options for work, salaries tend to be lower, and work hours longer due to the limited number of providers (Edmonson et al., 2017; Lake & Turner, 2017).

Early identification and timely treatment are crucial as most mental illnesses start during adolescent, contributing to global burden and disability worldwide (Brimblecombe et al., 2017; Chun et al., 2016). When mental illness is undiagnosed or poorly managed, the individual may experience negative effects on psychosocial functioning and increases the risk of developing other psychiatric disorders (Brimblecombe et al., 2017; Centers for

Disease Control and Prevention [CDC], 2021; Kelleher & Gardner, 2017; WHO, 2017). Screening measures of patients are used for identifying individuals who are at-risk of having at least one mental health disorder or whose mental health screening score is high enough to warrant further assessment and thus, those who are likely to benefit from referrals to mental health services (Kuhn et al., 2017). The risk of mental health conditions increases in hospitalized older adults, those with chronic illnesses, and those adults requiring institutionalized physical rehabilitation (Burge et al., 2019).

A total of 50 sources were selected for review. Three themes were identified: health care visits, adult at-risk behaviors, and brief mental health screening tools. Health care visits included the subtheme first contact for mental health care. Adult at-risk behaviors included the subtheme alcohol use and suicide/suicidal ideation. Brief mental health screening tools included two subthemes: Ask Suicide-Screening Questions (ASQ) and the PCH-2.

Health Care Visits

The first theme developed from the literature review were based upon the recommendations from the WHO, NIMH, the AAFP, and the National Strategy for Suicide Prevention Agencies. These organizations recommended that all healthcare settings be prioritized as settings for early identification and evidence-based interventional management of behavioral health issues (Chun et al., 2016; Goldman-Mellor et al., 2019; NIMH, 2019; Weatherly & Smith, 2019). Among these settings that commonly have interactions with the older adult are primary care and long-term care. Most older adults are assessed and treated in primary care settings, and half of those patients seen go undetected and or undertreated with depression or other mental health

conditions (DeSantis et al., 2017; Jha et al., 2019; Kroenke & Unutzer, 2017; Samples et al., 2019).

First contact with mental health care may be due to failure by families to recognize mental health conditions before crisis, family requests for urgent or timely diagnostic evaluations, lack of access or knowledge about how to access services, reluctance to discuss concerns with a primary care physician, or reduced proficiency in English (Chun et al., 2017; Crick et al., 2020; Kvael et al., 2017). Certain mental health conditions may present as fatigue, irritability, chronic pain, or memory loss resulting in referrals or visits to primary care providers (Padayachey et al., 2017; Samples et al., 2019). When these conditions become a significant concern of those individuals in transitional care facilities, TCF staff may transfer patients to emergency department or primary care for evaluation.

Some of the factors that are known to contribute to hospital visits include inadequate community mental health resources, long wait-times for access to mental health services, and a chronic shortage of psychiatrists to serve these patients, especially in rural communities (Beiser et al., 2019; Coulton et al., 2018). The long wait times in ambulatory clinics may also be a factor for hospital use (Fairchild et al., 2019; Roberts et al., 2018). It is a vital setting for detecting those at risk for suicide (Dueweke et al., 2018). The TCF was found to be a feasible location for implementing screening due to non-disruptive workflow since the nurse practitioner and nurses are primary care providers in TCFs, and it acceptable to patients and their families with a positive impact on quality of life (Crick et al., 2020; Tesky et al., 2019).

First Contact for Mental Health Care. It is crucial to implement mental health screening in TCFs since these facilities are often patients' first contact with mental health care. This is particularly key in rural areas where poverty and poor access to mental health care are risk factors for undertreated and undiagnosed mental health disorders (Broffman et al., 2017; Crumb et al., 2019; Knight & Winterbotham, 2020). Leon et al. (2017) described factors, such as limited financial resources, difficulty in accessing mental services, or worsening of symptoms, that result in psychological distress and lead to poorer health and slow rehabilitation in a TCF. In rural communities, adults may delay seeking help for MH problems due to concerns about gossip, perceived social proximity, and limited availability of resources (Gill et al., 2017; Knight & Winterbotham, 2020).

The TCF plays an important role in mental health management, and the priority is stabilization for rehabilitation purposes (Crick et al., 2020; Kvael et al., 2017; Tesky et al., 2019). It is important for health care systems to identify strategies that improve access to appropriate primary care and referrals to specialized services aiding in improved participation in rehabilitative process and healing (Gill et al., 2017; Liu et al., 2018; Rodriguez & Gamboa, 2020).

In summary, in rural communities, the TCF may be the first mental health contact for families and patients experiencing a mental health or behavioral health crisis (CDC, 2018a; Gill et al., 2017; Knight & Winterbotham, 2020). Contributing to the increased use of TCF's are family's inability to recognize signs of mental health issues until the adult is in crisis such as substance abuse, acute intoxication, or depression and anxiety, knowledge deficit of community resources and access to mental health specialists (Barimbing et al., 2019; Broffman et al., 2017; Chun et al., 2017; Dueweke et al., 2018;

National Coalition on Mental Health & Aging, 2017). Patients and families may not be comfortable discussing mental health concerns with primary care providers, unaware that their provider serves as a mental health resource in rural communities due to shortages of psychiatrists in these areas (Kirkland et al., 2018; Leon et al., 2017). The TCF may not have the ability to provide the appropriate mental health services once stabilization is achieved, therefore, providing information of the available community resources for those vulnerable to psychosocial issues may be of benefit to patients and their families.

Adult At-Risk Behaviors

The literature for the second theme, adult at-risk behaviors, provided an understanding of which adults are of high-risk for mental health conditions. Roberts et al. (2018) combined factors, such as rates of childhood sexual abuse, substance use and learning disabilities among adolescents, and positive family psychiatric history of substance abuse, antisocial disorders, and mood disorders, to confer biopsychosocial vulnerabilities in patients. Patients suffering from chronic diseases, unexplained somatic symptoms or with unclear changes in behavior may also be at risk of depression and therefore, are possible candidates for mental health screening (Gill et al., 2017; Samples et al., 2019). Adults with history of childhood adversities and or stressful life events may suffer from psychological distress or medical disorders if their ability to cope (resiliency) is limited (Beutel et al., 2017; Kvael et al., 2017; SAMHSA.gov, 2018). Low depression rates can partially be explained by low identification rates possibly due to uncertainty of diagnosis when somatic complaints are involved when seen by a primary care provider (Samples et al., 2019).

Other behaviors reported by Farley (2020) were the patients' understanding of mental distress and ways to seek assistance (Collins & Crowe, 2017). In the literature, adverse childhood experiences were associated with reduced adjustment, social support, and resilience leading to multiple adverse somatic and mental diseases, maladjustment, and unhealthy lifestyles (Beutel et al., 2017). Adverse childhood experiences of abuse, neglect, and household dysfunction are linked to poor mental health and premature mortality in adulthood (Duke, 2019; Watanabe et al., 2020).

Alcohol Use and Suicide or Suicidal Ideation. Literature for the subtheme of alcohol use and suicide or suicidal ideation behaviors provided context to at-risk behaviors. Suicide risk often goes undetected with approximately 6-12% of adults seeking medical treatment who acknowledged suicidal ideation and in 12% of patients who reported a history of a past suicide attempt (Arbore, 2019; NIMH, 2019b; Petrik et al., 2015). A transition from ideation to attempt occurs within the first year of ideation onset, and over half of suicidal patients never verbalize their intent of suicide (Puuskari et al., 2018). A call to improve the assessment and management of suicide risk in health care settings by The Joint Commission has led to requirements that every patient be evaluated for risk of self-injury in TCF's (NIMH, 2018b; Petrik et al., 2015; The Joint Commission, 2019; Thom et al., 2020).

In summary the challenges associated with evaluating older adults at-risk for mental health conditions are attributed to the life developmental stage (Coulton et al., 2018). Neural development can be impacted by the adverse effects of alcohol and substance use during adolescence, which may increase chances of adverse mental health conditions and behaviors in the older adult (Coulton et al., 2018; Farley, 2020; Kuhn et

al., 2017; Watanabe et al., 2020). Screening for behaviors associated with depression and anxiety such as loss of interest or pressure, irritability, stress, or decline in cognition allows for early intervention and mitigation of premature death.

Brief Mental Health Screening Tools

Using specialized instruments to identify mental health problems among patients during TCF care was recommended and supported by the AAFP and the Committee on Pediatric Emergency Medicine (Newton et al., 2017). Mental health screening remains uncommon despite the rate of patients with chronic medical conditions reporting higher rates of mental health problems as compared with their healthy peers (Herbert & Hardy, 2019). Many popular mental health screening tools are condition specific, requiring the use of a variety of tools to confer mental health diagnosis and treatment (Maurer et al., 2018; NAMI, 2021; Newton et al., 2017; U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau, 2019). Also, there appears to be limited amount of geriatric specialized mental health tools that do not require a significant amount of time to complete (Colligan et al., 2020; Maurer et al., 2018; Smith & Meeks, 2019; Webb et al., 2016). These tools focus on health domains, such as substance use, depression and anxiety, physical activity, and suicide risk (Webb et al., 2016). This can create barriers to implementation of mental health screening tools in TCFs. Short and time economic diagnostic instruments such as opportunistic screening tools can facilitate the diagnostic process, a critical first step in the delivery of appropriate interventions to reduce the burden of mental health effects on the older adult (Coulton et al., 2018). However, this requires appropriate training, resources, and incentives for staff (Coulton et al., 2018). Screening needs to be improved

in TCF care as the patients have an increased risk of depression since many suffer from chronic diseases, unexplained somatic symptoms, substance/alcohol use, or unclear changes in behavior.

Patients who scored positively can be followed-up by a further clinical exploration to verify or falsify a diagnosis of depression using a systematic approach to investigating factors (Chau et al., 2021; Maurer et al., 2018). When the diagnostic suspicion is confirmed in a further clinical exploration, a referral to a mental health specialist to confirm or refute a diagnosis of depression is recommended (Colligan et al., 2020; Coulton et al., 2018; Maurer et al., 2018). By screening, the nurse practitioner and or nurses act as gatekeepers to mental health care services and can pave the way to early diagnosis and the initiation of treatment (Johnson & Possemato, 2019).

Ask Suicide-Screening Questions (ASQ). The Ask Suicide-Screening Questions (ASQ) is a rapid, psychometrically sound four-item screening tool designed for all patients presenting to EDs (NIMH, 2019) as well as other clinical patient settings. The tool can be used to evaluate young adults who present to the TCF with non-behavioral complaints or somatic symptoms (Hackfeld, 2020). The four questions focus on an individual's current thoughts of being better off dead, a wish to die, suicidal ideation, and past suicide attempts (Thom et al., 2020). A positive response to any one of the four questions is considered a positive screen (Thom et al., 2020). Although the ASQ tool has a high sensitivity and specificity, its questions are specific to suicide risk.

Patient Health Questionnaire 2-Item (PHQ-2) Screening Tool. An example of a simply formatted screening tool is the PHQ-2, which is a two-item questionnaire that assesses for depression and anhedonia (Dueweke et al., 2018). The PHQ-2 screening tool

asks the following: how often in the past two weeks had the respondent experiences (a) little to no interest or pleasure in doing things and (b) feeling down, depressed, or hopeless. Responses are on a 3-point Likert-type scale, ranging from 0 (not at all) to 3 (nearly every day) for a total of 6 cumulative points (Bridges et al., 2019). A cut-off score of 3 is recommended as a suggestion of probable depression, requiring further evaluation and screening using the PHQ-9 tool. The PHQ-2 has demonstrated good psychometric properties with sensitivity and specificity as a rapid first-line screening tool for major depression (Arrieta et al., 2017). Although many clinics rely on a two-stage screening process in which suicide risk is only assessed if a patient screens positive for depression, a subset of patients who are contemplating suicide could respond to the PHQ-2 depression screener questions in such a way that they fall below the clinical cut-off and are not further assessed (Bridges et al., 2019; Dueweke et al., 2018). Also, screening for suicide risk is not a sufficient intervention in the absence of adequate clinical follow-up (Dueweke et al., 2018; Duke, 2019).

As noted in the literature, there are some limitations to the PHQ-2 and ASQ. One limitation is that the focus is on suicide screening and these tools only comprises topics of suicidal behavior, emotional problems of social withdrawal and depression, and substance abuse (Patel et al., 2018). Additionally, they only ask about recent behaviors, such as in the past two weeks, limiting the consideration of a broader context of behavioral health concerns (Herres et al., 2018). Despite mixed evidence for the efficacy of the various tools, most experts agree screening for suicide can be useful in detecting risk of suicide and assisting in limiting rates of suicide if conducted as part of a more

comprehensive effort that supports targeted follow-up evaluation and appropriate treatment (Patel et al., 2018).

In summary, mental health screening protocols have been viewed as beneficial in identifying mental health conditions in patients who visit healthcare for reasons other than mental health and in suicide prevention (DeSantis et al., 2017; Kroenke & Unutzer, 2017; Maurer et al., 2018; Samples et al., 2019). The screening tools can be universal, which is when every patient is screened regardless of level of risk, or indicated by specific criteria for high-risk groups, such as depressed patients (Dueweke et al., 2018). Both the ASQ and the PHQ-2 have good psychometric properties (Arrieta et al., 2017; Bridges et al., 2019; Dueweke et al., 2018; Hackfeld, 2020; Thom et al., 2020). The ASQ tool focuses on suicide, limiting consideration of broader mental health concerns (Herres et al., 2018; Thom et al., 2020). The PHQ-2 tool is brief and includes the first two questions of the more comprehensive PHQ-9 screening tool (Arrieta et al., 2017; Dueweke et al., 2018). Due to its brevity, the PHQ-2 was used in this project.

Summary

Transitional Care Facilities in the U.S. are noted to have a high number of patients with depressive symptoms or mental health diagnosis. Causes for increased mental health visits include limited access to mental health resources, increased prevalence, and complexity of psychiatric disorders in older adults, such as substance-related disorders, anxiety, mood/affective disorders, and acute stress disorder (Colligan et al., 2020; Leon et al., 2017). When safety is a concern, professionals may tend to more readily direct older adults to the hospital for immediate monitoring and further assessment, especially suicidal intent is involved, but not necessarily for other mental health concerns (Leon et

al., 2017). Routine screening for psychosocial problems has been widely recommended by professional organizations, like the AAFP and the USPSTF (NAMI, 2021; National Coalition on Mental Health & Aging, 2017). In February 2016, The Joint Commission issued a Sentinel Event Alert recommending that all medical patients in all medical settings be screened for suicide risk (NIMH, 2016; TJC, 2019). Using valid suicide risk screening tools that have been tested in the medical setting, such as the PHQ-2 item screening tool, could help clinicians accurately detect who is at risk and who needs further intervention (NIMH, 2016).

Transitional Care Facilities, like primary care settings are ideal locations for providing initial mental health screening of patients experiencing emotional or mental health issues who otherwise would not have been screened (Bowman, 2019; DeSantis et al., 2017; NIMH, 2018b; Petrik et al., 2015). Transitional Care Facilities in rural communities often do not have dedicated psychiatric support staff and have limited access to mental health resources; moreover, staff acknowledge a gap in skills in assessing and treating patients experiencing mental health crises (Crick et al., 2020; Falk & Taylor-Schiller, 2019). Routine screening strategies could facilitate early identification of mental health conditions for this population (Deweke et al., 2018).

Improving efficiencies in and the adequacy of mental health care has been shown to reduce hospitalization and length of stay (LOS) (Kirkland et al., 2018). There is some evidence that the use of screening and interventions for mental health disorder or health compromising behaviors improves health outcomes and quality of life of the older adult (Twenge et al., 2019; Webb et al., 2016). Thus, increasing rates of early identification and intervention would mean that TCF nurse practitioners and nurses need annual, formal

education, such as seminars and written brochures, so that they adhere to evidence-based practices when using mental health screening tools in the TCF (Roberts et al., 2018).

Practice-level outcomes of depression screening among older adults in health care settings are deemed ideal as a key access point for early identification of mental health conditions (Chowdhury & Champion, 2020; Joseph et al., 2019). Among metrics assessed are timely identification of mental health problems, referrals, and rate of mental health screenings by staff and clinicians. The literature showed that implementing the PHQ-2 tool is a first step approach in depression screening, followed by use of PHQ-9 tool if PHQ-2 score was positive (Chowdhury & Champion, 2020). When there is early identification of mental health disorders, then there would be increased rates of referrals and mental health interventions which could lead to positive patient outcomes.

Mental health discussions that occur with families of adults with chronic illnesses are viewed favorably by patients and providers, thus conducting mental health screenings electronically while patients are waiting is feasible (Chowdhury & Champion, 2020; Herbert & Hardy, 2019; Moreno-Poyato et al., 2018). Providers who are presented with the results of the mental health screen prior to seeing the patient can refer to the results to guide parts of the visit (Herbert & Hardy, 2019), resulting in referrals to mental health or behavioral health care as appropriate. Nurses utilizing concepts of the therapeutic relationship such as empathy, the ability to listen, creating a safe and comfortable environment and teamwork are in position to facilitate implementation of brief mental health screening tool in the TCF setting (Moreno-Poyato et al., 2018). The aim of this project was to determine if implementing the PHQ-2 as a screening tool, as supported by

the TIR and BCW, would improve the identification of mental health disorders in the TCF.

In Chapter 3, the methodology used to implement this project is discussed. It will include a review of the problem and clinical question that guided this DPI project. It will detail the nature of the project design, the population sample, instrumentation, reliability and validity, data collection and analysis procedures, and limitations of the project.

Chapter 4 will provide details on the results of the project, and Chapter 5 will explain the project results in the context of the literature.

Chapter 3: Methodology

In rural communities, mental health issues in older adults, such as depression, anxiety, and suicide are often undiagnosed, underdiagnosed, or under-treated due to lack of access to mental health services (Brimblecombe et al., 2017; WHO, 2019). The AAFP in 2017 updated its preventive health care to include recommendations for routine depression screening for adults 18 years of age and older. These recommendations were in accordance with guidelines from the WHO and the USPSTF which both recommended routine mental health screening of older adults aged greater than 65 years (AAFP, 2017). The TCF was identified as an ideal setting for mental health assessments to occur as part of routine assessments conducted by staff nurses. The purpose of this quantitative quasi-experimental quality improvement project was to determine if the implementation of Pfizer's PHQ-2 depression screening tool would impact the identification of problem symptoms related to mental health disorders and referrals to mental health providers among adult patients in a transitional care facility in rural Idaho over four weeks. The focus of this DPI project was on evaluating the efficacy of implementing a nurse-led depression and suicidal ideation screening among TCF patients to identify early mental health conditions and refer them to appropriate mental health services as needed. The project site TCF reported an increase in depression in their quality measures assessments. Untreated depression could lead to suicide, which was listed as the second leading cause of death in the U.S. and was ranked high as a cause of death among older men (CDC, 2018a; NIMH, 2019). The proactive and standardized mental health screening of patients regardless of reason for admission could aid in addressing the question of whether mental

health screening in the Transitional Care Facility increases identification of mental health disorders as compared to the current practice.

In this chapter, the methodology used to implement the project is discussed beginning with a re-statement of the problem and clinical question that guided the project. Then, the quantitative method with a quasi-experimental design used to collect data and implement the screening tool will be discussed. The population sample and validity and reliability of the PHQ-9 will be reviewed. Data collection and analysis procedures will be described in detail. The chapter ends with considerations of bias, ethics, and limitations.

Statement of the Problem

It was not known if or to what degree the implementation of Pfizer's PHQ-2 depression screening tool would impact the identification of problem symptoms related to mental health disorders and referrals to mental health providers among adult patients. There was noted a high level in the depression quality measures reported from the Minimum Data Set 3.0 (MDS) at the project site. The current rating is 18.05% overall, with antipsychotic medication quality measures at 2.38% to 20.1% for short-stay and long-stay residents (Medicare List, n.d.). These ratings are higher than the state and national average of 5% to 17% (Health Care for People, 2021). Additionally, TJC had mandated that TCFs screen all patients presenting for care for mental health disorders, but it was not consistently completed during admission. Residents were routinely screened every 90 days on the PASRR (Pre-Admission Screening and Resident Review) tool yet was not consistently screened for depression during admission.

An estimated 4.5% of older adults have been diagnosed with a mental disorder

such as anxiety, mood or behavior issues, or substance use (Brody et al., 2018; Martinez & Opalinski, 2019). The rise in mental disorders is of concern, as causes of mental illness have been linked to stressful adverse events, such as unhealthy family relationships, trauma, poverty, and community distress (Beutel et al., 2017; Martinez & Opalinski, 2019; Siu & USPSTF, 2016). Factors such as poverty, stigma, and lack of access to mental health resources in rural communities increases individuals' risk for mental health issues that remain undiagnosed, underdiagnosed, and or under-treated (Kelleher & Gardner, 2017). In the *2019 Critical Crossroads*, identified factors such as high turnover rates for therapists, lack of services in HRSA-designated shortage areas, limited health insurance coverage, and limited availability of hours were cited as contributing to high use of rural and community mental health services (U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau, 2019). The literature, however, indicated that mental health screening in TCFs may improve early detection of mental health conditions. The identification of at-risk older adults at the project site would facilitate further inquiry and evaluation by the facility's nurse practitioner into the patients' mental health if deemed appropriate. It would also facilitate referral to mental and behavioral health professionals and community resources with the intent to possibly prevent incidents of self-harm.

Clinical Question

This quantitative quasi-experimental project addressed the following clinical question: To what degree does the implementation of Pfizer's PHQ-2 depression screening tool would impact the identification of problem symptoms related to mental

health disorders and referrals to mental health providers among adult patients in a transitional care facility in rural Idaho?

The independent variable was defined as the direct practice nursing intervention, specifically screening all patients presenting at the TCF with the PHQ-2. The dependent variable was mental health identification, which was defined by the PHQ-2 scores and the number of referrals provided. The overall aim of the project was to improve identification of mental health needs in patients and facilitate brief interventions as needed to mitigate adverse outcomes, such as suicidal ideation and self-injury, poor health, and slow rehabilitation. See Table 1 for the characteristics of the variables.

Table 1

Characteristics of Variables

Variable	Variable Type	Level of Measurement
Patient Health Questionnaire (PHQ)-2 Screening	Independent	Nominal
Rates of referrals	Dependent	Nominal
PHQ-2 scores	Dependent	Interval
Age of patients	Dependent	Ratio

The process included collecting and sharing data from electronic health records (EHRs). These data were evaluated and analyzed to support the sustainability of a mental health screening protocol in the TCF aimed to address mental health in rural communities. The data from the screening protocol were gathered from chart reviews pre- and post- implementation. Descriptive statistics were used to analyze the demographics of age and gender, the number of PHQ-2 screenings completed during the

period of implementation, number of positive PHQ-2 screens, and rates of referrals to mental health services.

Project Methodology

A quantitative method was used to collect data for this project. The quantitative methodology is appropriate when data for the outcome are used to identify an amount, how many, how much, how often, or an average (White & Zaccagnini, 2017). The quantitative method aided in identifying how many TCF patients were administered the PHQ-2 screening tool by the nurse practitioner or staff nurse, and how often the nurse referred patients for further evaluation based on results of PHQ-2 tool.

The qualitative method would not have been beneficial for this project due to the contextual nature of the data, which was used to understand the factors that influence the success or failure of the intervention (White & Zaccagnini, 2017). The mixed method methodology was not selected for this project as it employs both quantitative and qualitative methodologies. Mixed methodologies require expertise and time to conduct and analyze data from differing sources (White & Zaccagnini, 2017; Woodcock et al., 2021). Neither methodology was feasible due to the time constraints nor focus of this project.

The quantitative method was the best method for the DPI project because it is easier to evaluate quantitative data and this methodology could produce clearer, more objective results through numerical data that answered the questions of how many and how often. The numerical data was coded for systematic analysis and interpretation using statistics to help find relationships and meaning in the variables to measure the effectiveness of implementing the PHQ-2 tool intervention.

Data were gathered from the PointClickCare™ EHR prior to implementation of the project. These data were compared using descriptive statistics to provide a general summary of the population being addressed using measurement tools of frequency distribution, percentages, and central tendency measures to infer statistical significance (Kaliyadan & Kulkarni, 2019). Outcomes from the DPI project were presented in terms of relative risks or mean differences, with calculated confidence intervals (CI) to explain the intervention's impact and to identify patterns between measurable variables of how often the PHQ-2 screening tool was used and the amount of mental health illnesses that were suspected or identified. Numerical, ordinal, and nominal data from the PHQ-2 questionnaire, as well as data from pre-existing records, took the form of statistics and were compared using variables that are linked to depression, anxiety, and or suicide (Kaliyadan & Kulkarni, 2019; Rutberg & Bouikidis, 2018). For these reasons, a quantitative method was used in this project.

Project Design

There are three types of quantitative designs (Rutberg & Bouikidis, 2018). The first is the experimental design. The DPI project could have used the experimental design if time allowed and if there had been a control group and an experimental group, which is required in this design for randomization. The second type is the quasi-experimental design, which does not require randomization, is non-experimental, has an intervention with outcome measure pre- and post-intervention, and evaluates the effectiveness of the intervention (Rutberg & Bouikidis, 2018). The third type is the non-experimental design in which the manipulation of the variables is not present, and observation of the

phenomena and identification of existing relationships occur to determine a causal link between variables (Rutberg & Bouikidis, 2018).

The quasi-experimental design was used to establish a cause-effect relationship among the variables without manipulating the independent variable or randomly assigning groups during the four-week implementation of the PHQ-2 screening in the TCF. The process included collecting and sharing big data prior to implementation from the EHRs to determine if it was necessary and sustainable to implement a screening protocol that addresses mental health in rural communities (Machluf et al., 2017). The data were used to aid care facility administrators, health care providers, and the TCF nursing staff in understanding the prevalence of older adults experiencing symptoms of mental disorders and the factors that may prevent access to mental health evaluation and care. An in-service on the prevalence of older adult mental health, understanding the purpose and function of the Patient Health Questionnaire-2 (PHQ-2) tool, and review of developmental stage appropriate communication techniques was provided prior to implementing the mental health screening protocol in the TCF. The PHQ-2 screening tool was selected due to the high sensitivity (83%) and specificity (92%) for detecting depression and mood disorders (Jha et al., 2019).

It was determined that the DPI project would achieve meaningful and sustainable patient outcomes by implementing the PHQ-2 screening tool in the TCF, and pre- and post-implementation data were collected to support this determination. The DPI project aimed to add to the processes in addressing the local problem within the community of limited mental health care. The DPI project was a quality improvement project implemented as quasi-experimental design and not research as it was specific to one

facility and one unit within that facility with a focus on improving the quality of care by decreasing the variations in mental health screening care in the facility. Quality improvement projects are systematic, data-guided activities designed to bring about immediate, positive changes by analyzing data to improve systems related to processes and outcomes within a specific setting (Gregory, 2015).

Population and Sample Selection

The general population at the project site consists of patients as young as 40 years and older than 75 years of age. The patients are from a rural community whose population is less than 35,000 residents. The DPI project focused on TCF patients older than 40 years of age who received a PHQ-2 screen during admission to the TCF. Patients who were not included were those TCF patients previously diagnosed with a mental disorder or neuro-cognitive disability, and or judged to be unable to understand or answer the questions.

A sample size of the general population for the project was calculated using Qualtrics sample size calculator. The average number of patients per month residing in the TCF was 60 with a confidence level of 95%, and a Margin of Error (ME) of $\pm 5\%$. This resulted in a sample size of 53 potential participants receiving the PHQ-2 screening in the TCF over a four-week period.

The sampling method best suited for the DPI project was convenience sampling. Although convenience sampling can often be biased and lacks generalizability, this method best fit the DPI project because the population was easily accessible in the TCF (Jager et al., 2017). The target population were all patients older than 40 years who presented to the TCF. The advantage of convenience sampling is that it is inexpensive,

efficient, allows for ease of proximity and access to the target population, and is simple to implement (Laerd Statistics, 2018).

The technique used to recruit participants for the project was based on the sample size analysis. The technique was to include all TCF patients in screening, except for those who met the exclusion criteria, which was in alignment with the standard of care for all patients in the facility. While DPI projects related to adults do not require special considerations, older adult may be viewed as vulnerable for those persons who are unable to understand the risk and benefits of participating in a project if diagnosed with neuro-cognitive disabilities (Bozzaro et al., 2018). Although this project investigator excluded this vulnerable population, it is important that they be included in future project to prevent bias and to understand the unique needs and perspective of this population regarding mental health screening (Crane & Broome, 2017).

All patient confidential data related to the project were stored at the project site on the facility's secure cloud-based system, PointClickCare™. De-identified paper PHQ-2 tools were secured in locked file cabinet and destroyed once data was input into Intellectus. Destruction of the tools were completed by shredding procedure.

Instrumentation and Sources of Data

There was one instrument and one source of data in this project. The PHQ-2 was used to collect data on patients' depression and mental health. The PointClickCare™ EHRs at the project site were used to obtain demographic data.

Patient Health Questionnaire Two-Item (PHQ-2)

Mental health disorders are a global burden that, if left untreated or unmanaged, may lead to physical chronic illness, disability, or suicide affecting life expectancy (Doan

et al., 2020; Gill et al., 2017; NIMH, 2019b). Symptoms of depression and anhedonia have been frequently reported by adults at a rate of 4.5% (CDC, 2018a). Often, those living with depression do not seek psychological care, leaving them at-risk for suicide, the second leading cause of death (Arrieta et al., 2017; Bridges et al., 2019; NIMH, 2019b). The Patient Health Questionnaire -2 (PHQ-2) may be used for initial screening or as a first step approach for depression to aid in the early identification of individuals at-risk for self-harm or suicide (Arrieta et al., 2017; Bridges et al., 2019; Jha et al., 2019).

Kroenke and colleagues created this brief two-item screening tool that consists of two questions that ask, “over the last 2 weeks, how often have you been bothered by the following problems?” with responses of either (a) little interest or pleasure in doing things, or (b) feeling down, depressed, or hopeless (Kroenke et al., 2003). To score responses, a Likert scale is used from 0 (not at all) to 3 (nearly every day), with the PHQ-2 score obtained by adding the numbers for each question to obtain a total score (Kroenke et al., 2003). The score ranges from 0 to 6, with higher scores of 3 or greater considered positive results and likely indicating a depressive disorder (Arrieta et al., 2017; Bridges et al., 2019; Jha et al., 2019; Kroenke et al., 2003).

Arrieta et al. (2017) used receiver operating characteristics (ROC) curve analysis to find the optimal cut-off for depression screening with a statistical significance determined at a p -value < 0.05 . Pearson correlation coefficient was used to determine predictive validity (Narkhede, 2018). The literature has suggested that patients who screen positive with the first step approach via the PHQ-2 screen for depression should be followed-up with using the Patient Health Questionnaire nine-item screening tool to

determine whether they meet the criteria for a depressive disorder (Arrieta et al., 2017; Burge et al., 2019; Newton et al., 2017; Siu & USPSTF, 2016).

PointClickCare™ Electronic Health Record (EHR)

PointClickCare™ was used to collect demographic information about the patients. PointClickCare™ is a cloud-based healthcare software system that whose function is the electronic storage of resident's health information. Embedded in PointClickCare™ was data from the Minimum Data Set (MDS) 3.0 of which age, gender, and number of medical diagnoses were collected. The MDS 3.0 is a standardized, primary screening and health assessment tool used for all residents residing in long-term care facilities (HealthIT.gov, 2019). The sociodemographic data collected were used to demonstrate characteristics of project population.

Validity

The first two questions of the PHQ-2 screening tool for depression are the exact first two questions of the PHQ-9 screening tool. Arrieta et al. (2017) evaluated the validity of the PHQ-2 screener comparing the tool to the PHQ-9 and the WHO Quality of Life BREF (WHOQOL-BREF) assessment tool. The three types of validity content, construct, and criterion validity were identified by the following: the PHQ-2 and PHQ-9 screener measured aspects of depression, the score of 3 or greater is used for positive result for depression symptoms on the PHQ-2 and followed by a score of 9 or greater with the PHQ-9 (Arrieta et al., 2017). The predictive validity was assessed in two ways by comparing WHOQOL-BREF domain scores among participants with PHQ-9 scores greater than 9 or less or equal to 9 and tested for differences using Wilcoxon rank-sum test (Arrieta et al., 2017). The PHQ-2 and PHQ-9 scores were positively correlated with a

Pearson correlation coefficient of 0.75, demonstrating the strength of association between the screening tools and depression.

Validity of PointClickCare™ EHR was demonstrated through its compliance with HIPAA regulations and being certified by the Certification Commission for Health Information Technology (CCHIT) and the Office of the National Coordinator for Health Information Technology (ONC) (PointClickCare, n.d.). PointClickCare™ (n.d.) has become a leader in electronic health record software in senior care market and the long-term care industry. Due to its cloud-based platform, PointClickCare™ can provide secured de-identified demographic data and medical diagnosis to aid in data collection of the DPI project.

Reliability

For reliability, the internal consistency of the PHQ-2 was 0.71 (Scoppetta et al., 2021). According to Heale and Twycross (2015), instruments with Cronbach's alpha results of 0.7 and higher have good reliability, therefore the PHQ-2 is reliable. The PHQ-2 showed good psychometric properties for community-based screening of depression, is easy for care providers to remember the core symptoms it assesses, and is a brief depression screen; therefore, the use of the PHQ-2 as a screening tool to improve early detection of depression is recommended (Arrieta et al., 2017).

Reliability of EHR data use have demonstrated some variability in variables such as improved management of clinical documentation and positive quality outcomes for efficiency and effectiveness of care related activities (Kruse et al., 2017). Altman et al. (2018) reported that a variety of statistical tests have been utilized to assess the reliability of extracted data from electronic health records including comparing automated extracted

data to manually abstracted data. The variability in the reliability of variables tended to be impacted by whether the categories had value outside of clinical decision making, which tended to be more reliable, than the variables that reflect processes of care, variables requiring level of interpretation, assumed variables, and missing data (Altman et al., 2018). PointClickCare™ demographic data was deemed reliable as there was no missing data noted and resident demographic data such as age and gender were not affected by the intervention.

Data Collection Procedures

The first phase of the project was planning which included obtaining approval from the clinical agency leadership and buy-in from the TCF nurse practitioner and nurses. To begin the process of approval of the proposed practice improvement project at the clinical site, discussion with the Director of Nursing (DNS) and preceptor describing the proposed project occurred to gain approval and support followed by obtaining signed Site Authorization Letter from the DNS. The DNS completed the Grand Canyon University (GCU) Site Authorization form as the clinical site did not have an Institutional Review Board (IRB) committee. The clinical site did not have formal documents for data use and Health Insurance Portability and Assurance Act (HIPAA); therefore, GCU's documents for Data Use and HIPAA Authorization form were used to meet the requirements. Once all documents were completed, the IRB documents were submitted to GCU's IRB for approval of the implementation of the PHQ-2 screening tool in the TCF to facilitate early identification of mental health conditions. To ensure accuracy of the data obtained on the population, a sampling of the target population is necessary for

statistical significance and accurate data so that inferences could be made and were generalizable to similar populations and future studies (Andrade, 2020).

Chart Reviews, also known as medical record reviews, are a popular form of project design that utilize pre-recorded patient-centered information to answer clinical questions (Collen et al., 2019). One of the reasons for the popularity is the ease of access and convenience to data which also provides a reflective look at real world application in health care systems (Bauman et al., 2019). To facilitate rigor and quality in chart review studies and to mitigate mistakes, following federal regulations that require RCR be approved by the local IRB prior to conducting the quality improvement project was adhered to (Collen et al., 2019). The data in this DPI project consisted of demographic information age and gender, reason for admission, discharge or disposition medical diagnosis, and positive responses documented in the EHR from the PHQ-2 screening tool.

Since the screening process was anticipated to become part of the TCF standard of care and there would be no direct patient access, informed consent was not required (Patel et al., 2018). The data collected prior to project implementation had all non-essential protect health information (PHI) data removed and de-identified. To ensure security and confidentiality of the PHI data collected, the information was de-identified as appropriate, secured on site in a locked cabinet in the nurse practitioner office to be used solely by this project investigator. Access to the electronic health record required two-item password authentication for login. Participation in facility training as part of fulfillment of facility's data use agreement was completed and collected prior to the

instructional intervention. Any PHI data that were collected as hardcopy were shredded at the clinical site as required.

The following steps were used to implement the project at a local transitional care facility. The project began with providing instructional materials for the nurse practitioner and clinical nurses regarding how to perform depression screening utilizing the Patient Health Questionnaire (PHQ) – 2 item tools. The self-study instructional handout was provided one week prior to implementation of the project to allow for questions. The nurse practitioner was informed on the inclusion and exclusion criteria of the residents residing on the transitional care unit and the skilled nursing care unit.

Each resident residing in the transitional care facility that met criteria was administered the PHQ-2 paper screening tool by responding verbally to the questions asked by the nurse practitioner. The residents were asked to answer the following question. “Over the last 2 weeks, how often have you been bothered by any of the following problems?” using the 2 items as responses, “little interest or pleasure in doings” and “feeling down, depressed, or hopeless.” These residents were instructed to rate each item response as 0 = “not at all,” 1 = “several days,” 2 = “more than half the days,” and 3 = “nearly every day.” The nurse practitioner documented the responses on paper version PHQ-2 sheet and tallied the total score. Residents with a positive PHQ-2 score were identified by the nurse practitioner as needing a referral for follow-up or identified as having prior diagnosis and/or treatment for mental health disorder. The PointClickCare™ summary report was used for descriptive data only, gender, age and number of medical diagnoses.

Data Analysis Procedures

Descriptive statistics, such as sociodemographic data of age and gender, the number of PHQ-2 screenings completed during the period of implementation, rates of positive PHQ-2 screens, and rates of referrals to mental health providers were analyzed. The Intellectus Statistics™ software (Intellectus Statistics, 2021) were utilized to analyze the data and determine if implementing the PHQ-2 impacted mental health identification. The Intellectus statistical analyses included tables and graphs to demonstrate demographics of the residents and residents with positive depression screens using frequency counts in addition to the mean and standard deviation.

Outcomes from the DPI project were presented in terms of relative risks or mean differences with calculated confidence intervals (CI) to explain the intervention's impact. Outcomes were also analyzed to identify patterns between measurable variables of the frequency of positive PHQ-2 screening tool and the amount of mental health referrals were initiated. The Chi-Square Test of Independence was conducted to examine the cause-and-effect relationship between PHQ-2 score and early identification of mental health conditions in rural older adult patient, and whether positive PHQ-2 scores were independent of whether residents received referrals for mental health follow-up.

Potential Bias and Mitigation

To facilitate validity, reliability, and to minimize bias in the data collected, individuals (nurse practitioner and staff nurses) involved in data collection were blinded to the question being addressed. The data collectors were instructed on which variables were to be collected and how to score the PHQ-2 screening tool (Bauman et al., 2019). Collen et al. (2019) encouraged pilot test data sampling to determine inter-rater and intra-

rater reliability for high agreement and accuracy of data collection between collectors to help with identifying errors early. A data sampling pilot of $n=40$ PHQ-2 forms was conducted after 2 weeks of data collection; no errors were noted in the scoring of the screening tool.

As stated previously, convenience sampling was used to determine the population because of accessibility of the patients in the TCF and lack of randomization, which was a potential for selection bias within the project. Risk for selection bias was present since sampling only occurred in the TCF and the exclusion criteria of patients admitted with moderate to severe dementia and other neuro-cognitive disorders prevented those residents from participating in project. This may have decreased the sample size for the project (Roush, 2020). Recall bias was a risk due reliance on residents answering the PHQ-2 questions based on past experiences and/or feelings. Recall of different events or feelings are more likely to be remembered than others (Roush, 2020). Risk for confirmation bias is always present during data interpretation when the desire of the principal investigator is to find patterns in the data that confirm the idea of PHQ-2 as a first step approach is effective in early identification of mental health conditions. This can be controlled by the PI by recognizing the risk of bias subconsciously and consciously, and report data as presented (Roush, 2020).

Ethical Considerations

Direct practice improvement projects related to the general adult population do not require special considerations for safety of the participants (Block & Gordon, 2019). Nevertheless, older adults with neuro-cognitive disabilities impacting their comprehension may be vulnerable (Block & Gordon, 2019; Statistics Solutions:

Advancement Through Clarity, 2020). Therefore, they were excluded from the project to ensure their safety and dignity.

According to the Belmont Report (1979), three basic ethical principles, respect for persons, beneficence, and justice, guide the implementation of research and projects in protecting those individuals who are unable to protect themselves (National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1979). These individuals are considered vulnerable when unable to independently make decisions about participation in activities and or give voluntary consent and who are at risk for coercion and exploitation, therefore requiring special legal protections (Block & Gordon, 2019; Statistics Solutions: Advancement Through Clarity, 2020). The principle of respect was important in this project regarding respect for older adult patients. Respect included dignifying their desire for autonomy by facilitating and supporting decision-making. The project had a risk of unintentional disrespect in the education and distribution of community mental health resources if the literacy level of participants was not considered.

The principle of beneficence was relevant in the project as the goal was to do no harm when administering the PHQ-2 screening tool. Vulnerability may have occurred in various ways, including lack of access to potentially beneficial mental health referrals due to medical exclusion, and challenges associated with individuals of low levels of education, health literacy and numeracy skills (Gehlert & Mozersky, 2018). To minimize chances of harm during PHQ-2 depression screening in the transitional care facility, all residents were screened as routine component of the admission assessment. Residents were also able to refuse responding to the questions.

Data extracted from the PointClickCare™ summary report were de-identified, no names, date of birth, or patient ID numbers were present. The nurse practitioner, nurses, and principal investigator used the two-authentication process to access any reports from the EHR. The paper PHQ-2 tool was stored in a secure, private area to which only the nurse practitioner had access to safeguard resident's information. The completed PHQ-2 tools were secured in a locked cabinet in the nurse practitioner's office. The PHQ-2 positive score rate was calculated according to the number of residents who completed the screening. The completed PHQ-2 screening tools will be destroyed by shredding the documents according to facility policy upon completion of the DPI project. The PHQ-2 screens will not be recorded in the facility PointClickCare™ MDS database as the facility utilizes the PHQ-9 screening tool that is embedded in the MDS system.

Limitations

Limitations of the project included the limited timeframe of four weeks, small population sample size, and limited resources for referral such as supply of local geriatric mental health specialists or mental health community resources. Consideration of how the PHQ-2 screening tool is administered, whether embedded in the EHR or administered by paper questionnaire, was a limitation affecting data collection. The paper questionnaires could not be scanned into the secure document management system as the facility were using the PHQ-9 tool embedded in the MDS 3.0 for monitoring of patient symptoms and antipsychotic medication usage.

Additionally, the quantitative methodology did not allow for an exploration of nurses' views and attitudes of implementing the PHQ-2 screen to screen older adults, which could impact the success or failure of the project intervention. Delimitations of the

project included the type of facility in which it was implemented: a rural transitional care facility. Other delimitations were the age range of the project participants, 40 years and older, and the facility's reported concerns of increase in admittance related to COVID-19. Finally, the use of the PHQ-2 was a delimitation, especially as the facility MDS Coordinator and License Social Worker already used other depression screening tools for monitoring previously diagnosed mental health patients.

Summary

This chapter provided an overview of the methodology of this quality improvement project, including discussion of design, sample selection, data collection and analysis, and the review of the instruments utilized in the project. The quantitative methodology was selected to address the clinical question, To what degree does the implementation of Pfizer's PHQ-2 depression screening tool would impact the identification of problem symptoms related to mental health disorders and referrals to mental health providers among adult patients in a transitional care facility in rural Idaho? Included in the methodology was literature indicating that the PHQ-2 screening tool as a first-step approach aids in early identification of depression and other mental health disorders in the older adult in transitional and/or long-term care.

The quasi-experimental project design sought to address the problem of "It was not known if or to what degree the implementation of Pfizer's PHQ-2 depression screening tool would impact the identification of problem symptoms related to mental health disorders and referrals to mental health providers among adult patients.

Instructional handouts were provided to the staff and obtained from credible resources such as AAP Bright Futures™ and the Minnesota Department of Health

websites. This was done to ensure accurate instruction was provided. Although there were limitations to the project, they were not deemed significant to the success of the project and did not impeded its implementation.

Chapter 4 will provide analysis of the data collected. The data will be organized in a way to answer the clinical question to determine if the implementation of mental health screening of patients in the TCF using the PHQ-2 screening tool improved mental health disorder identification. Chapter 5 will provide a discussion of the results, specifically focusing on conclusions and implications that can be drawn from the findings.

Chapter 4: Data Analysis and Results

Mental health and substance use disorders affect approximately 20% of adults greater than 65 years and have been associated with high health care utilization costs, greater functional impairment than many other chronic diseases, reduced quality of life, and premature death (Brody et al., 2018; Falk & Taylor-Schiller, 2019; Twenge et al., 2019). Undiagnosed and undertreated mental health conditions in older adults can lead to poorer health, slow rehabilitation, or early death due suicide (National Institute of Mental Health, 2018b; World Health Organization, 2017). Mental health screening in all health care settings is recommended and supported by the AAFP and USPSTF (Newton et al., 2017; Siu & USPSTF, 2016). With the ever-increasing demand for mental health care and limited providers, the clinical staff in the rural TCF noticed, during a quality measures review, noted that the facility had high depression rates. Although the facility has utilized a depression screening tool on the skilled nursing units, the facility used the tool for depression monitoring and was not consistent with screening all admissions to the transitional care unit, missing opportunities for early detection and implementation of recommended best practices such as safety planning as a preventive strategy.

The purpose of this quantitative quasi-experimental quality improvement project was to determine if the implementation of Pfizer's PHQ-2 depression screening tool would impact the identification of problem symptoms related to mental health disorders and referrals to mental health providers among adult patients in a transitional care facility in rural Idaho over four weeks. The project utilized a quantitative methodology with a quasi-experimental design to illustrate the practice change before and after the use of the PHQ-2 screening tool. The quality improvement project included educating staff on the

purpose and use of PHQ-2 screening tool. The identification of mental health condition was measured by PHQ-2 assessment score and the number of mental health referrals.

The quantitative methodology was used to address the following clinical question:

Q: To what degree does the implementation of Pfizer's PHQ-2 depression screening tool would impact the identification of problem symptoms related to mental health disorders and referrals to mental health providers among adult patients in a transitional care facility in rural Idaho?

This chapter contains a discussion of the collected and analyzed data. Results are presented to illustrate the impact mental health screening has on the early identification of mental health and referrals to behavioral health. Demographic data from the sample population as well as the analyzed data will be demonstrated by tables and graphs to further facilitate clarity of results.

Descriptive Data

The quality improvement project occurred in a TCF in rural north central Idaho. Eligibility criteria were facility nurses and nurse practitioner who will administer the screening tool and patients aged 18 years and older who were not significantly cognitively impaired and did not have a previous diagnosis of a mental health disorder. As the mental health screening is considered part of routine assessment and standards of care, informed consent of the TCF patients and clinical nursing staff are determined not required (Patel et al., 2018). The eligibility criteria and understanding of the project, including the purpose, the duration, and the indications of the project, were explained to the clinical nursing staff.

Descriptive data were used to determine the characteristics of the TCF patients' demographics consisting of gender and age. Summary statistics were calculated for each interval and ratio variable. Frequencies and percentages were calculated for each nominal variable. Cases were weighted using the PHQ_2_score variable. Additional data in the DPI project of mental health screening and rate of identification of mental health issues collected are age, number of medical diagnoses each patient had, and number of positive and negative scores documented in the EHR from the PHQ-2 screening tool. A sample size of $n=53$ patients received PHQ-2 screening over four weeks.

Table 2
Frequency Table for Nominal Variables

Variable	<i>n</i>	%
Gender		
Female	20	37.74
Male	33	62.26
Missing	0	0.00
PHQ_P_1_N_2		
1	19	35.85
2	33	62.26
Missing	1	1.89
Referral_Y_N		
n	47	88.68
y	5	9.43
Missing	1	1.89
Depression_Diagnosis_Y_1_N_0		
1	17	32.08
0	35	66.04
Missing	1	1.89

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

The observations for Age had an average of 73.28 ($SD = 9.81$, $SE_M = 1.35$, $Min = 46.00$, $Max = 91.00$, $Skewness = -0.70$, $Kurtosis = 0.45$). The observations for

PHQ_2_score had an average of 2.02 ($SD = 2.40$, $SE_M = 0.33$, $Min = 0.00$, $Max = 6.00$, $Skewness = 0.69$, $Kurtosis = -1.16$). When the skewness is greater than 2 in absolute value, the variable is asymmetrical about its mean. When the kurtosis is greater than or equal to 3, then the variable's distribution is markedly different than a normal distribution in its tendency to produce outliers (Intellectus Statistics, 2021). The summary statistics for interval and ratio can be found in Table 3.

Table 3

Summary Statistics Table for Interval and Ratio Variables

Variable	M	SD	n	SE_M	Min	Max	Skewness	Kurtosis
Age	73.28	9.81	53	1.35	46.00	91.00	-0.70	0.45
PHQ_2_score	2.02	2.40	52	0.33	0.00	6.00	0.69	-1.16

Note. '-' indicates the statistic is undefined due to constant data or an insufficient sample size.

Data Analysis Procedures

This quality improvement project utilized a quantitative methodology and quasi-experimental design. This was chosen to best illustrate the practice change before and after the implementation of the PHQ-2 screening tool. Descriptive analysis was used to describe the sample characteristics and variable results using frequencies and inferential statistics. The Chi-square Test of Independence was conducted to examine whether there was independence between the dependent variables of the PHQ-2 score (PHQ_P=1 N=2) and the number of referrals (Referral_Y= y N=n). A power analysis was utilized to justify sample size.

Results

The data analysis of this project were organized to address the project clinical

question: To what degree does implementation of the PHQ-2 screening of adults aged 18 years or older impact early identification of mental health and referral to behavioral health in a Transitional Care Facility in north central Idaho? The project occurred over a four-week period in which data was analyzed utilizing chi-square test of independence examining whether the PHQ-2 scores impacted whether referral was given. Information was separated from observational data by the principal investigator reporting empirical data such as the χ^2 statistic, degree of freedom (*df*) and the *p*-value. No non-numerical observational data will be reported, this is to minimize risks of bias or subjectivity.

A sample size of the general population for the project was calculated using Qualtrics sample size calculator. The average number of patients per month residing in the TCF was 60 with a confidence level of 95%, and a Margin of Error (ME) of +/- 5%. This resulted in a sample size of $n=53$ potential participants receiving PHQ-2 screening in the Transitional Care Facility over a 4-week period. Each admitted patient and patients who did not initially have a depression screen performed received a PHQ-2 screen during the admission assessment or follow-up assessment by the nurse practitioner and/or clinical staff nurse. The completed screen score was tallied and for each score greater than 3 out of a total of 6, was further evaluated by the nurse practitioner or primary health provider or referred to the licensed social worker for appropriate mental health assistance.

The Chi-square test of Independence was determined to be best suited to illustrate the cause-and-effect relationships of the use of the screening tool and the identification of at-risk patients for mental health conditions receiving referrals. The assumption of adequate cell size was assessed, which requires all cells to have expected values greater than zero and 80% of cells to have expected values of at least five (Intellectus Statistics,

2021). All cells had expected values greater than zero, indicating the first condition was met. A total of 50.00% of the cells had expected frequencies of at least five, indicating the second condition was violated. When the assumptions of the chi-square test are violated, Fisher's exact test can be used to produce more reliable results with small sample sizes.

The results of the Chi-square test were significant based on an alpha value of 0.05, $\chi^2(1) = 4.51$, $p = .034$, suggesting that PHQ_P=1 N=2 and Referral_Y=y N=n is related to one another. The following level combinations had observed values that were greater than their expected values: PHQ_P=1_N=2 (2): Referral_Y_N (n) and PHQ_P_1_N_2 (1): Referral_Y_N (y). The following level combinations had observed values that were less than their expected values: PHQ_P_1_N_2 (1): Referral_Y_N (n) and PHQ_P_1_N_2 (2): Referral_Y_N (y). Table 4 presents the results of the Chi-square test.

Table 4

Observed and Expected Frequencies

PHQ_P_1_N_2	Referral_Y_N		χ^2	df	p
	n	y			
1	15[17.17]	4[1.83]	4.51	1	.034
2	32[29.83]	1[3.17]			

Note. Values formatted as Observed [Expected].

Table 5

Two-Tailed Independent Samples t-Test for PHQ_2_score by Referral_Y_N

Variable	n		y		t	p	d
	M	SD	M	SD			
PHQ_2_score	1.915	2.509	3.000	0.000	-0.958	0.34	0.612

Note. N = 52. Degrees of Freedom for the *t*-statistic = 50. *d* represents Cohen's *d*.

The result of the chi-square test of independence was significant based on an alpha value of 0.05, $\chi^2(1) = 4.51$, $p = .034$. This finding suggests the association between the PHQ-2 score and the Referrals was statistically significant as the $p < 0.05$. An independent samples *t*-test was used to analyze the rates of referrals given by the nurse. Results revealed $t(50) = -0.96$, $p = .342$, suggesting no statistically significant improvement in the number of referrals.

Summary

This section provides a concise summary of what was found in the project. The QI project implemented the PHQ-2 screening tool upon admission to patients aged greater than 18 years and to those patients previously admitted but did not receive mental health screening upon admission in a Transitional Care Facility. The nurse practitioner after receiving instruction on the use of the PHQ-2 depression screening tool upon review of the Bright Futures™ PHQ-2 direction sheet, screened and scored all patients in the transitional care unit and skilled nursing unit. The average PHQ-2 score was 2.02 out of a total score of 6 within the sample size $n = 53$. Referrals to mental health care were considered based upon the score of the PHQ-2 screening. The number of residents who had positive PHQ-2 scores, scores greater than 2 out of 6, and received a referral for further mental health evaluation was not

statistically significant. Approximately 21% or 4 of the 19 residents with PHQ-2 scores greater than 3 were identified as receiving a referral. The early identification of mental health conditions in the older adult in TCFs will aid in improved health and steady improvement in rehabilitation activities. The quantitative quasi-experimental project utilized chi-square test of independence to demonstrate statistical and clinical significance of the practice change of PHQ-2 screening tool as the first-step approach to identification. Chapter 5 will conclude this project by summarizing the data and results based upon statistical analysis from the implementation of Kroenke's PHQ-2 screening tool in a transitional care facility during admission assessment conducted by nurse practitioner and or staff nurse. PHQ-2 scores greater than 2 out of total 6 points guided the nurse practitioner to either conduct a comprehensive mental health assessment or refer the patient for further mental health evaluation by mental health specialist or primary care provider. Specific conclusions, limitations, and recommendations will be discussed to assist in future planning.

Chapter 5: Summary, Conclusions, and Recommendations

Mental health disorders in the United States are a growing public health concern as mental health and substance use disorders are reported to affect up to 20% of adults older than 65 years (Doan et al., 2020; Falk & Taylor-Schiller, 2019; NIMH, 2019b). The risk for depression increases with age and contributes to physical and cognitive deterioration; unfortunately, this is often viewed as normal part of aging, leading to lack of mental health screening for these individuals (Padayachey et al., 2017). Rural communities have limited mental health resources, which has impacted the adult community. According to the CDC, 20% of adults with reported mental health conditions in the United States are older adults (Gill et al., 2017). Undiagnosed and undertreated mental health conditions in the older adult can lead to poorer health, slow rehabilitation, or early death due to suicide. Mental health screening in all health care settings is recommended and supported by the AAFP and the USPSTF (Newton et al., 2017; Siu & USPSTF, 2016). Administration of a valid mental health screening tool during admission assessment in the transitional care facility leads to early identification of mental health conditions and referral to mental health care.

At the project site, residents with a mental health diagnosis were monitored for depression on admission, quarterly, and upon discharge. Those residents who did not have a mental health diagnosis were not consistently screened for depression. The goal of the DPI project was to advance scientific knowledge in a TCF to foster the implementation of evidence-based practices in the mental health well-being of the older adult. The purpose of this quantitative quasi-experimental quality improvement project was to determine if the implementation of Pfizer's PHQ-2 depression screening tool

would impact the identification of problem symptoms related to mental health disorders and referrals to mental health providers among adult patients in a transitional care facility in rural Idaho over four weeks. Although long-stay residents are monitored for depression quarterly and upon discharge, this project intervention provided mental health screening of all residents upon admission to the short-stay unit, and to long-stay residents who may not have been screened initially when admitted. This intervention presented an improvement in the mental health screening process conducted by the nurse practitioner and or clinical staff nurses as evidenced by an increase in the number of PHQ-2 screens completed and the number of referrals provided.

Summary of the Project

Mental health disorders are growing at an alarming rate in the United States, which bears a considerable impact on public health (Gill, et al., 2017). Depression in older adults can be problematic; often older adults are less willing to report feelings of sadness or depression and often, symptoms of depression are often viewed as a normal part of the aging process (Crick et al., 2020). Undiagnosed mental health disorders in the older adult can be linked to poor physical and cognitive well-being, failure to thrive, and risk for self-harm (Crick et al., 2020; Falk & Taylor-Schiller, 2019; Padayachey et al., 2017).

The DPI project aimed to address the clinical question: To what degree does the implementation of Pfizer's PHQ-2 depression screening tool would impact the identification of problem symptoms related to mental health disorders and referrals to mental health providers among adult patients in a transitional care facility in rural Idaho? Patients admitted to the facility received the PHQ-2 screening as part of the routine

admission assessment. Based upon the screening results, further mental health evaluation, possible referral, and or treatment was provided as appropriate. Early identification and interventions aides in mitigating adverse outcomes associated with mental health disorders such as depression by improved health, timely healing and rehabilitation, and increased participation in health promoting activities.

The findings of the DPI project supported the need to screen adults for mental health disorders, particularly depression as it was not a normal part of the aging process. The project nurse practitioner participated in education that described the purpose and use of the PHQ-2 brief screening tool to improve the rate of admission mental health screening of patients and referrals to mental health providers. The clinical staff understood the project would allow for the identification of those at risk for depression and other mental health conditions that may affect the patient's recovery and quality of life in the transitional care facility.

Summary of Findings and Conclusion

The findings from this DNP project demonstrated factors associated with efforts to improve mental health care in older adults admitted to a TCF. Identification of depression and other mental health disorders in older adults may reduce the adverse effects of mental health disorder on physical and cognitive well-being as well as the utilization of health care services provided. Access to mental health providers and treatment may be facilitated through improved coordination of care initiated by referrals. Therefore, interventions or evidence-based practices that target the identification of depression and other mental health disorders in transitional care facilities may have the potential to improve health outcomes and quality of life of the older adult.

This project supported the following: a need for mental health screening in older adult patients admitted to TCFs; TCF nursing staff and provider education on the benefits of mental health screening and referrals for mental health follow up as appropriate; and patient education about depression and its impact on health if untreated and the benefits of treatment in achieve better health and quality of life. The nursing staff utilized Peplau's TIR to improve therapeutic communication skills during admission assessment and use of the PHQ-2 screening tool. The nursing staff recognized the importance of establishing a therapeutic, trusting patient-nurse relationship when discussing mental health concerns and the older adult reluctance to disclose feelings for fear of stigmatization or lack of understanding of depression. Understanding the factors associated with risk for mental health disorder in the older adult increased the nurse's and patient's awareness of the impact undiagnosed mental health conditions on functioning and well-being. The nurses understood that a PHQ-2 screen with a score > 3 was considered a positive screen, which prompted them to refer to the facility nurse practitioner for further evaluation and possible follow-up by telepsychiatry. The recommendations made by the WHO, AAFP, and the USPSTF supported routine mental health screening of older adults for depression in TCF practices (American Academy of Family Physicians, 2017; Newton et al., 2017; Siu & USPSTF, 2016). In addition, the facilities should have supportive systems in place to adequately treat and provide follow-up once a mental health diagnosis has been made.

Several potential barriers were considered in introducing the PHQ-2 screening tool in the TCF. These included patient concerns of stigmatization with a mental health conditions, nursing staff workload with an added mental health assessment, and limited

community resources and mental health coverage to treat and follow-up on positive screens (Burge et al., 2019). Use of the BCW framework addressed the nursing staff's concern of workload and comfort with performing mental health screenings during admission, resulting in consistency of the number of screens performed. The nurse's concern of workload was addressed through education of the purpose of and how to use the PHQ-2 tool. Once the nurses understood that the tool was an ultra-brief screener with only two questions, and that the on-site nurse practitioner was available for immediate referral and/or follow-up to any identified concerns, the nurses were more likely to complete the screening tool.

In conclusion, there was evidence that supported the health benefits of depression screening of older adult populations in various clinical settings. The benefits of improved health outcomes and quality of life are positively affected when mental health conditions are identified and addressed using supportive systems, such as care management teams which includes behavioral health providers trained in the care of the older adult (Crespy et al., 2016). The results of the chi-square test demonstrated both a statistical significance with an alpha value of 0.05, $\chi^2(1) = 4.51, p = .034$, and a clinical significance of utilization of PHQ-2 depression screening tool as a first step approach effective in identifying older adults who need further mental health evaluation, need for referral, and possible treatment for depression.

Implications

The increase in mental health conditions requires a system-wide reform that includes a focus on identification and prevention, and increased integration of mental health care in the services of the older adult (Hoffman et al., 2019). Since 2013, it has

been noted that approximately 10% of patients who receive a mental health diagnosis require services for the problem, but only 36% of those patients receive mental health services (Chun et al., 2016; Chun et al., 2017). Among older adults, this could be even more problematic as the risk of mental health conditions increases in those with chronic illnesses, are hospitalized, and those requiring institutionalized rehabilitation or skilled nursing (Burge et al., 2019). Samples et al. (2019) contributed the low rates of identified depression among older adults because of uncertainty of diagnosis when somatic complaints are involved, often resulting in the belief that these complaints are normal for the older adult.

The DPI project aimed to improve upon the screening for depression in the older adult admitted to TCF for rehabilitation, thus improving identification of mental health conditions. The literature demonstrated that the use of brief mental health screening tools, such as the PHQ-2 along with interventions, improved health outcomes (Zakaria, et al., 2019). The project's implementation of the PHQ-2 tool as a first step approach in mental health screening demonstrated an increase in rates of referrals, and interventions for those with positive PHQ-2 screens followed by further mental health evaluation.

Theoretical Implications

Using Peplau's TIR and Michie et al.'s BCW helped to guide the project in answering the clinical question of how does the implementation of the PHQ-2 impact identification of mental health conditions and rates of referrals to behavioral health. Nurses utilizing concepts of the therapeutic interpersonal relations, such as empathy, the ability to listen, creating a safe and comfortable environment and teamwork, are in a position to facilitate implementation of the PHQ-2 mental health screening tool during

admission and as needed (Moreno-Poyato et al., 2018). The BCW framework was used to address behaviors that created barriers to implementing the PHQ-2 tool during the admission process.

Practical Implications

Practical implications for the using the PHQ-2 screening tool as a first-step approach to mental health screening in the TCF facilitated rapid screening without increasing the nursing workload. The concerns of using a comprehensive mental health screening tool that may be time-consuming has resulted in inconsistencies of which patient upon admission is screened. The belief that depression is a normal part of aging has also played a role in whether older adults are screened. The findings from this project support previous evidence that older adults should be screened for depression and other behavioral health conditions when poor health and functioning is a concern.

Future Implications

Due to lack of mental health specialists in the region, the TCF relies on telepsychiatry for all mental health care, which at times, results in a delay in follow-up care and re-evaluation of treatment and medication regimen. The findings support the recommendations for screening with systems in place to provide more comprehensive evaluations and appropriate therapies that have been shown to improve health outcomes.

Future planning may include transitioning mental health admission screening to a step-process using the PHQ-2 as the first step. This may improve the consistency in admission screening being completed and possibly aid in addressing the high Depression quality measure.

Recommendations

Recommendations include increased mental health training for clinical nursing staff and the on-site nurse practitioner. The on-site nurse practitioner could provide more comprehensive mental health evaluations and collaborate with geropsychiatrists via telehealth on treatment plans of care. The TCF could incorporate mental health well-being programs as part of the routine rehabilitation services in addition to the admission PHQ-2 screening.

Recommendations for Future Projects

There was limited evidence-based research on the application of brief mental health screening during transitional care utilization. There was a paucity of information on the importance of mental health of older adults and depression screening in long-term care facilities, but limited differentiation between long-term care, skilled nursing care, and transitional care (short stay). Further studies should be conducted on the impact of brief depression screening of older adults admitted to transitional care units (short stay) and on the length of stay at the facilities.

Recommendations for Practice

It is recommended that the following be considered for practice: the first recommendation is that the PHQ-2 screening be included as the first step approach to mental health screening of adults in the TCF as a standard of care for the admission process. The use of a two-step screening process may reduce the perception of conducting the screens as time consuming and improve consistency in screening during admission assessment. The second recommendation is to provide annual staff education in mental health well-being of the older adult to improve staff understanding of the

benefits of positive mental health on physical and cognitive well-being. The third recommendation is to address risk factors for depression in the older adult through community initiatives such as mental health educational community programs; and fourth recommendation to develop collaborative program with community stakeholders, health care agencies, and health care providers to address mental health care in rural communities.

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Appendix A

Grand Canyon University Institutional Review Board Outcome Letter



GRAND CANYON UNIVERSITY™

3300 West Camelback Road | Phoenix, Arizona 85017 | 602.639.7500 | Toll Free 800.800.9776 | www.gcu.edu

DATE: March 23, 2021

TO: Stephanie Macon-Moore

FROM: COLLEGE OF NURSING AND HEALTH CARE PROFESSIONALS

STUDY TITLE: Improving Depression Screening in Rural Transitional Care Facility

ACTION: DETERMINATION OF QUALITY IMPROVEMENT/PROGRAM EVALUATION STATUS

DATE: March 23, 2021

REVIEW CATEGORY: QUALITY IMPROVEMENT/PROGRAM EVALUATION

In collaboration with the Institutional Review Board, The College of Nursing and Health Care Professions at Grand Canyon University has determined that this submission does not meet the definition of human subject research. The submission qualifies as Quality Improvement and/or Program Evaluation; therefore, further IRB review is not required. In future publications and/or presentations, please refer to this submission as Quality Improvement and/or Program Evaluation, not research. If the results of the project will not be published, presented, or disseminated outside of the institution, ensure that all those associated with the project are aware that the project is ongoing.

We will put a copy of this correspondence in your student file in our office. If you have any questions, please contact The DNP Program Lead Faculty, Dr. Katherine Fetter in the College of Nursing and Health Care Professions, Katherine.Fetter@gcu.edu.

Please include your project title and reference number in all correspondence with this office.

Appendix B

Patient Health Questionnaire-2 (PHQ-2)

Patient Health Questionnaire-2 (PHQ-2)

Instructions:

Please respond to each question.

Over the last 2 weeks, how often have you been bothered by any of the following problems?

Give answers as 0 to 3, using this scale:

0=Not at all; 1=Several days; 2=More than half the days; 3=Nearly every day

1. Little interest or pleasure in doing things

 0

 1

 2

 3

2. Feeling down, depressed, or hopeless

 0

 1

 2

 3

Instructions

Clinic personnel will follow standard scoring to calculate score based on responses.

Total score:

Age: _____

Gender: Male / Female

Number of Medical DX _____

Appendix C

Permission to Use Patient Health Questionnaire-2 (PHQ-2)


Welcome to the
Patient Health Questionnaire (PHQ) Screeners

Screener Overview

Recognizing signs of mental health disorders is not always easy. The Patient Health Questionnaire (PHQ) is a diagnostic tool for mental health disorders used by health care professionals that is quick and easy for patients to complete. In the mid-1990s, Robert L. Spitzer, MD, Janet B.W. Williams, DSW, and Kurt Kroenke, MD, and colleagues at Columbia University developed the **Primary Care Evaluation of Mental Disorders (PRIME-MD)**, a diagnostic tool containing modules on 12 different mental health disorders. They worked in collaboration with researchers at the Regenstrief Institute at Indiana University and with the support of an educational grant from Pfizer Inc. **During the development of PRIME-MD, Drs. Spitzer, Williams and Kroenke, created the PHQ and GAD-7 screeners.**

The PHQ, a self-administered version of the PRIME-MD, contains the mood (PHQ-9), anxiety, alcohol, eating, and somatoform modules as covered in the original PRIME-MD. The GAD-7 was subsequently developed as a brief scale for anxiety. The PHQ-9, a tool specific to depression, simply scores each of the 9 DSM-IV criteria based on the mood module from the original PRIME-MD. The GAD-7 scores 7 common anxiety symptoms. Various versions of the PHQ scales are discussed in the Instruction Manual.

All PHQ, GAD-7 screeners and translations are downloadable from this website and no permission is required to reproduce, translate, display or distribute them.

Select a Screener

PHQ and GAD-7 Screeners

[Click here to access the Instruction Manual](#)

[Bibliography by author](#)



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(Pfizer Inc., n.d.)