Improving Antidepressant Adherence Rates in an Outpatient Behavioral Setting: A Quality Improvement Project

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Abstract

Patients with depression experience severe mood disorder that affects their ability to sleep, work, eat, and go about their lives, thereby causing persistent sadness and affecting the quality of life and psychosocial functioning.

Purpose: The overall purpose of this evidence-based DNP quality improvement (QI) project is to implement an evidenced guideline that outline the process for providers and nurses to follow, to improve antidepressant adherence rates in adult patients. This project attempts to discern if the protocols could improve antidepressant adherence in adult patients with depression.

Methods: EBP guideline and toolkit that outlines the process for providers to follow when prescribing antidepressants to enhance adherence to medications. The EBP protocol was made available and accessible to Physicians, Nurse Practitioners, Physician Assistants, and Nursing staff that outlines the process for providers to follow when prescribing antidepressants to enhance adherence to medications and allows for ethical and evidence-based care.

Results: An increase in provider's knowledge and post- antidepressant adherence protocol implementation increased the adherence rate. The result showed a 20% increase in antidepressant adherence within four weeks of implementation. The quality improvement results are discussed, and indications for future programs are explored.

Keywords: Quality improvement, Depression, Antidepressants, Medication Adherence, Antidepressant toolkit, Antidepressant guidelines, Antidepressant adherence, Antidepressant nonadherence, Interventions for medication adherence, antidepressant treatment in outpatients.

Improving Antidepressant Adherence Rates in an Outpatient Behavioral Setting: A Quality Improvement Project

Depression is a mood disorder that causes persistent sadness, impairments, and affects the quality of human life and psychosocial functioning (Malhi & Mann, 2018) the second leading cause of incapacity in all ages around the world (Pedersen, 2016). According to the Substance Abuse and Mental Health Services Administration (2017), the National Institute of Mental health reported that the most prevalent mental health disorder in the United States of America is depression and estimated that over 16 million people in the USA had been clinically diagnosed with depression. Nonadherence to antidepressants leads to a high low quality of life, poor health outcomes, and increased costs (Costa et al. (2016). The World Health Organization (2020) described depression as a prevalent illness that has affected over 264 million people globally, causing unfavorable physical and mental dysfunction (WHO, 2020).

Patients with depression often experience severe mood disorder that causes persistent sadness and affects life quality and psychosocial function. The national recommendations for managing depression symptoms in adult populations are effective management and treatment with therapeutic support, pharmacotherapy, and psychotherapy (Van Assche et al., 2017).

According to a report by Serrano et al., (2014), over 30% to 68% of patients are nonadherent to the recommended medication regimen, which tends to increase emergency visits and causes depression relapse. The American Psychiatric Association (2015) defined the criteria for depression as persistent depressed mood, anhedonia, feelings of worthlessness or excessive guilt, sleep and appetite changes, guilt or self-criticism, and recurrent thoughts of death or suicidal ideation.

Medication adherence is the extent to which a patient takes at least 80% of the

medication regimen recommended by the provider (Mert et al., 2015). Recognizing medical practitioner and patients adherence issues are crucial in goal setting, essential for improved and excellent outcomes. According to a study by Mert et al., 2015), adult patients with depression who are knowledgeable about their diagnosis and trust their medical provider are significantly more likely to adhere to the prescribed antidepressant medication. Patients with depression may have identified factors responsible for medication nonadherence, such as patient perception and unacceptance of diagnosis, stigmatization, beliefs, lack of knowledge and understanding of the diagnosis, social determinants of health, low literacy levels, psychotic disorder, depression, stigma, perceived side effects, negligence, lack of resources and other mental illnesses (Mert et al., 2015).

Despite the recommendation for treatment of depression as pharmacotherapy and psychotherapy, many patients are not adhering to the treatment regimen essential to establish management of the symptoms of depression (Gerlach et al., 2017). Nonadherence is the failure to adhere to a medical provider's treatment recommendation because of patients' beliefs and attitudes toward medications (Zolnoori et al., 2018) and a significant obstacle to achieving therapeutic management of depression, resulting in significant burdens on the individuals and the health care system. According to Gerlach et al., 2017, nonadherence to antidepressant medication early in treatment causes increased risks of treatment relapse, vulnerability to suicide, and increased costs to the patient and health care system.

Problem Identification

The practice site is a private behavioral and addiction clinic centered in the far western part of Texas, which serves an ethnically diverse group. This quality improvement (QI) project is the lack of evidence-based guidelines to improve antidepressant adherence in patients with

depression. The World Health Organization has characterized depression as the most prevalent mental disorder and the leading disability worldwide (WHO, 2015). Management of depression requires pharmacotherapy to manage better the symptoms associated with this mood disorder and decrease the significant symptoms that affect morbidity and mortality.

Based on the current evidence at the project site, this project will also focus on educating mental health providers, including nurse practitioners, physician assistants, and nursing staff regarding utilizing an evidence-based guideline for antidepressant adherence. The education will provide education on antidepressant protocol, evaluate the provider's knowledge on changes to clinical practice and determine if it would be sufficient for improving antidepressant adherence in adult patients.

This quality improvement project will address antidepressant nonadherence in a behavioral outpatient clinic by providing an evidence-based guideline for mental health providers, nurse practitioners, professional counselors, and nurses to improve antidepressant adherence rates in the adult patient population. The staff will educate patients on antidepressant medication adherence and identify reasons for nonadherence with the medication regimen. Patients adhere to the medication regimen when they take 80% of the medications (Mert et al., 2015). Per Cosa et al., nonadherence to the treatment of chronic diseases ranges from 30% to 50% in developed countries. This QI project will serve to guide practice based on the current evidence at the project site.

Purpose Statement

The purpose of this education is to improve the providers knowledge in improving antidepressant adherence in adult patients with depression. The teaching will also provide education on improving antidepressant adherence rates among adult patients in an outpatient

behavioral setting through the implementation of evidence-based practice guidelines. The goal is to develop and implement EBP guidelines and toolkit that outline the processes for providers to follow when prescribing antidepressants to adult patients. It will also evaluate if the learner's knowledge led to changes in practice behaviors (increase in antidepressant adherence in depressive patients) after course completion. The last part will be measured using retrospective chart audits.

This QI project will foster best practices that will promote patient-centered mental health management in patients with depression and highlight the impact of assessing antidepressant adherence rates. The overall goal is the effectiveness of educating Psychiatric health providers, Nurse practitioners, and Nurses on improving antidepressant adherence rates in adult populations over four weeks post-intervention compared to four weeks before quality improvement.

PICOT Project Question

Will implementing an evidence-based guideline on antidepressant adherence improve the adherence rate in adult patients of 18 -75 years within four weeks of the project implementation phase?

Problem/Population/Patient: Nurse Practitioners, Physician Assistants, and Nursing staff at the Outpatient mental health clinic.

Intervention: Implement Evidenced Based toolkit that outlines the process for providers (Nurse Practitioners, Physician Assistants, and physicians to follow when prescribing antidepressants to enhance adherence to medication (questions to ask, resources, referrals), as well as assessing behaviors, culture, attitude, or issues that affect antidepressant medication adherence in Adult Patients with depression.

Comparison or issue of interest: This practice improvement project will focus on the current

practice.

Outcome: Reduced nonadherence and an increase in the number of adults who are adherent to antidepressant medication.

Time: Four weeks.

Search Methods

The literature review presents a foundation for recommended guidelines for antidepressant adherence, guided by the question, will implementing evidence-based guidelines on antidepressant adherence improve adult patients' adherence rate in an outpatient behavioral setting? The inclusion criteria included English language, adult populations, outpatient care or community care, research within five years, peer-reviewed/scholarly peer-reviewed, patients with depression, major depressive disorder, incidence, prevalence, screening guidelines surrounding antidepressant adherence in patients with MDD. The exclusion criteria included research older than five years, editorials/opinions, children, adolescents, psychotic disorder, specific cultures or ethnicities, and articles in foreign languages. The keywords used include pharmacological treatment guidelines of antidepressant adherence, depression, antidepressants, antidepressant guidelines, antidepressant adherence, medication adherence interventions, and antidepressant treatment in outpatients. When accessing the Touro University Library database, the Allied Health Literature (CINAHL) Plus with full text, ERIC (Educational Library), PubMed, Cochrane library, and MEDLINE simultaneous search was utilized.

Review of Study Methods

The study methods include a retrospective cohort study of antidepressant adherence, a systematic review of literature, a prospective study of antidepressant adherence, controlled trials, a meta-analysis of randomized controlled trials, and a qualitative study on appropriate

information to promote medication adherence. The study methods utilized are relevant to the project because they are reliable, valid, and improves patient safety and satisfaction.

Review Synthesis

Implementation of evidence-based guidelines to improve antidepressant adherence rates in an outpatient behavioral setting.

The gold standard for treating major depressive disorder is pharmacological therapy using antidepressant drugs (Herzog et al., 2017). Research has also shown that depression may be a result of genetic and environmental factors, which may result in an adverse impact on a patient's cognition, social functioning, work performance, quality of life, and relationship with the people close to them (Ebert et al., 2017). Health providers must know the manifestations of depression in populations and appropriate methods for improving antidepressant adherence in patients with depression (Herzog et al., 2017).

Per DSM-V (2015), one of the following symptoms of depression such as loss of interest in the person's usual activities, episodes of insomnia or hypersomnia, noted changes in appetite, weight, and psychomotor agitation or retardation, fatigue, irritability, feelings of worthlessness, lack of coordination, low concentration, and suicidal thoughts or action must be present in other to diagnose major depression. The guideline by the National Institute for Health and Care Excellence (NICE, 2016) recommends a timeline treatment evaluation of antidepressant adherence, including a time frame of (3–8 weeks) of patient's adherence, therapeutic drug monitoring, and reevaluation of the diagnosis. According to NICE (2016), executing treatment change strategies of dose increases, augmentation strategies, combination strategies, and medication switch strategies to ensure relapse prevention and promote adherence to continuous antidepressant treatment.

The literature shows that depression can affect irrespective of social status, ethnicity, gender, or age, and recommended treatment guidelines for providers to treat major depressive disorders (Herzog et al., 2017). The NICE guideline for depression treatment recommends dose adaptation, switching to an alternative antidepressant, combination, or augmentation as treatment strategies for ensuring effectiveness and adherence to antidepressants by patients with depression. According to Vuorilehto et al. (2016), adherence to antidepressants results from adequate follow-up and enhanced education by health providers. Patient adherence is crucial for any benefits to materialize, and nonadherence to antidepressants was more common in patients who discontinued their medications prematurely without consulting their doctor (Vuorilehto et al., 2016).

Per Cipriani et al., (2018), it is essential to understand the significance of medication adherence in the successful treatment of depression and produce an excellent patient outcome. Akincigil & Mathews (2017) reported depression as one of the leading causes of disabilities in the US and reiterated the importance of adherence guidelines in facilitating positive patient outcomes. Depression causes persistent sadness and affects the quality of human life and psychosocial functioning. Managing depression requires different treatments due to the differences in its presentation and the high rates of relapse and recurrence in patients (Serna et al., 2015).

Serna et al. (2015) analyzed a retrospective study comprising of 3,684 subjects, who were monitored between 2003 to 2011, and the result indicated that only one in four patients adhered to the recommended medication regimen treatment, and adherence to an antidepressant medication regimen is often interrupted prematurely, leading to increases in patient relapse and health care costs. Akincigil & Mathews (2017) studied 33,653 physician-patient interactions on

the health outcomes of depression and highlighted the consequences of untreated depression as one of the leading causes of disabilities in the US. Antidepressant adherence is a crucial component responsible for managing depression, which helps with handling the symptoms and provides patients the ability to maintain quality of life and decreased morbidity and mortality associated with untreated depression (Serna et al., 2015). Rossom et al. (2018) talked about the importance of antidepressant medication adherence and the keys to successful depression treatment, and the impact of non-compliance on patient outcomes.

According to Rossom et al., (2018), 60% of nonadherence to antidepressants was higher in minority groups, and they are less likely to refill their antidepressants than non-Hispanic whites, excluding Native Americans/Alaskan Natives. It was also reported that 60% of patients discontinue antidepressants use within three months. The report by Rossom (2018) explained the influence of race/ethnicity as a strong predictor of adherence to antidepressant adherence rates. Depression in adult patients cannot be cured but managed with therapy and antidepressants to cope with this diagnosis's symptoms, reduce the frequency of exacerbation, and improve patients' overall quality of life (Rossom et al., 2018). Appropriate therapeutic support and pharmacological interventions are essential to establish the management of depression. Untreated depression can result in a myriad of mental health conditions and is characterized by worsening symptoms associated with decreased well-being and life satisfaction into adulthood (Rossom et al., 2018).

Impact of the problem

Antidepressant nonadherence is one of the significant challenges for health care professionals in treating patients with depression, leading to a decrease in the quality of life, poor health outcomes, and increased costs (Ho et al., 2015). In the systematic review article by Ho et

al., (2015), the relation of antidepressant nonadherence to worsening of patient's clinical and economic outcomes was analyzed and the association between medication nonadherence and clinical and economic outcomes in patients. Henein et al., (2016) conducted a prospective study on the impact of adhering to antidepressant medication regimen on suicidal ideation in adult patients by examining 344 patients with a clinical diagnosis of major depression and no self-reported suicidal ideation at baseline; it revealed that nonadherence to antidepressants treatment was associated with a higher probability of suicidal ideation.

Depression is the third leading cause of disability globally, causing adverse health outcomes such as obesity, stroke, heart disease, co-morbid condition, and self-harm in 4-8% of patients with depression if it goes untreated (Akincigil & Mathews, 2017). Depression requires different treatments due to the differences in its presentation in patients. Recognizing practitioner's and patients' adherence issues is crucial in goal setting, essential for improved patient outcomes. Nurses as leaders are integral to implementing antidepressant adherence and serve as patient advocates in ensuring information and range of interventions necessary for adherence are available to the patient. Adherence to antidepressant has been associated with knowledge and education by clinicians on antidepressant adherence.

Addressing the Problem with Current Evidence

According to Srimongko et al., (2018), factors that contribute to either adherence or nonadherence to antidepressants included experiences of depression, stigma experienced, previous use of antidepressants, side effects, the effectiveness of antidepressants, support network, and relationship with their health care providers. Srimongko et al. (2018) also highlighted some of the identified factors influencing nonadherence in patients on antidepressants, including stigma, fear of the medication's adverse reaction, the ineffectiveness of

antidepressants, and disbelief about diagnosis and severity of depression. Per Mert et al., (2015), the rates of hospitalization and emergency department visits were significantly lower in antidepressant adherent patients compared to nonadherent patients.

Nonadherence to antidepressants has negatively impacted health care and a significant challenge to patient outcomes (Hamrin et al. 2017).) Hamrin et al., (2017) indicate the factors responsible for nonadherence to an antidepressant medication includes experienced adverse side effects, lack of education on medication benefit, unawareness of the diagnosis, lack of information on the purpose of the medication, forgetfulness, fear of medication abuse or addiction, costs, stigma, lack of support from families and health care provider. The importance of knowledge and education by clinicians and staff on adherence theory is crucial to improving adherence and fostering positive outcomes for the patient (Hamrin et al., 2017). Assessing, monitoring, and supporting patients on antidepressants help promote patient engagement and trust between providers and patients (Hamrin et al., 2017).

Theme Development

Provider Education

Education is a significant factor associated with antidepressant adherence. The World Health Organization defines education as a determinant of treatment success for medication adherence, while poor adherence attenuates optimum clinical benefits and reduces the overall effectiveness of the health system. Literacy on depression provides cognitive and social skills that determine individuals' motivation and ability to access, understand, and use the information to promote good health. According to the study by Mert et al. (2015), factors responsible for medication nonadherence that resulted in a patient's psychiatric admission were attributed to low literacy levels on mental illnesses and stigma. Educating staff on appropriate therapeutic

communication as an intervention to improve adherence leads to better patient adherence, thereby promoting better health outcomes. Building a therapeutic relationship with clients helps manage their uncertainty about their illness and medication effects (Mert et al., 2015).

According to Herzog et al. (2017), antidepressant adherence is achievable when psychiatric providers initiate and continue to guide patients with depression through all treatment phases and coordinate collaborative patient care with other clinicians.

Patient Education by Providers

It is essential to developing a patient-centered approach to combating antidepressant nonadherence in patients with depression. Studies by Keyloun et al., (2017), and Ho et al., (2015) on antidepressant adherence and persistence across antidepressant therapeutic classes buttressed the importance of antidepressant medication treatment to positive health outcomes, decreased healthcare costs, and mortality; as well as emphasized the impact of nurses and health providers in improving adherence in patients with depression through patient education, behavioral interventions and structured feedback on a patient's progress.

According to Costa et al. (2016), evidence has shown that more knowledgeable people about mental illness are more likely to adhere to the prescribed medication. Patient-provider relationships can influence medication adherence, hence providers and medical staff's role in ensuring patient's adherence to medications. Per Costa et al. (2016), nonadherence to chronic disease treatment ranges from 30% to 50% in developed countries and higher in developing countries. Educating staff on appropriate therapeutic communication as an intervention to improve adherence would lead to better patient adherence, thereby promoting better health outcomes. As maintained by Costa et al., (2016), health care providers can communicate, assess, and evaluate patients' beliefs, knowledge issues, or reluctance to take medications. To optimize

antidepressant medicines, health care professionals should ensure the use of positive influencing factors for adherence and address the negative influencing factors for antidepressant nonadherence to enhance positive patient outcomes for patients on antidepressants (Costa et al., 2016). Health care professionals must put into considerations both positive and negative influencing factors for antidepressant adherence at the different phases of adherence (Costa et al., 2016).

The study by Martinez et al. (2018) revealed that the best depression interventions are pharmacologically and psychotherapeutically based. Stigmatization of individuals on antidepressants is real and can be associated with a lack of knowledge about depression and antidepressants. Per Martinez et al., (2018), managing depression is achievable by providing appropriate information by providers to patients to help reduce myths, issues, or concerns of patients towards mental illness. While all the studies mentioned above highlighted the importance of antidepressant adherence in patients with depression, they all presented diverse methods of ensuring patient adherence. It is essential to identify reasons for non-compliance with the medication regimen. Patients are considered to adhere to the medication regimen when they take 80% of the medications. It is essential to build a therapeutic relationship with patients to foster effective clinical interventions in assisting depressed clients in managing their uncertainty about their illness. This should be done in a non-judgmental way, which conveys empathy and support. The study is relevant to the project topic because it concluded on the importance of educating patients on the essence of adherence to medication regimen, adjusting the management plan according to the diagnosis, patient's resistance to medications, belief, and attitude in medication adherence.

Project Aims

This project aims to improve antidepressant adherence in patients with depression, using evidence-based guidelines to ensure positive patient outcomes.

Project Objectives

1. Develop and implement evidenced-based toolkit and guidelines for providers prescribing antidepressants to enhance antidepressant medication adherence.
2. Present the developed evidenced-based antidepressant guidelines to clinicians and evaluate their understanding of the guidelines and assess improved knowledge on the antidepressant protocol.
3. Educate NPs, Pas, Physicians, and nurses on evidence-based toolkit and guidelines and pre-and post-knowledge tests to evaluate education effectiveness.
4. Evaluate their understanding of the guidelines.
5. Improve early intervention rates for patients at risk for nonadherence to antidepressant medications and define the clinic’s policy and roles related to care of patients with depression.
6. Show a 5% increase in antidepressant medication adherence within four weeks of implementation.

Theoretical Framework

Theories, models, and conceptual frameworks provide a foundation for researchers to follow and generate ideas and design research studies that contribute to evidence-based practice in health care (Hamrin et al., 2017). The critical component of improving patient antidepressant adherence in this outpatient setting is implementing practice changes with providers on utilizing best practice guidelines to assess nonadherence to major depression treatment with medication (Hamrin et al., 2017). Polit and Beck (2017) stated, "in designing research, researchers need to have a conceptualization of people's behaviors or characteristics, and how these affect or are

affected by interpersonal, environmental, or biologic forces" (p. 117). Theories, models, and frameworks provide a basis for conceptual frameworks that allow researchers to narrow down a focus for their research and offer ideas to build hypotheses (Hamrin et al., 2017). There are several strategies for completing research; it is essential to understand the study's goal to use the proper model for evaluation (Green, 2014).

Nursing is also rooted in theories and research that you cannot just view as black and white, theories and conceptual models help to stimulate research and the extension of knowledge (Hamrin et al., 2017). Nurse leader's significant impact on change can be implemented by planning, collaborating, and utilizing leadership skills in innovative ways to change and manage the change (Ribeiro et al., 2018). Ensuring the right theory can help provide a foundation for review and analysis of literature (Ribeiro et al., 2018). The theoretical framework chosen would help implement a change in the assessment for nonadherence to antidepressant medication by medical/psychiatric providers of the outpatient clinic.

Historical Development of the Theory

Planned Change "is the application of knowledge and skills by a leader to bring about a change." (Marquis & Huston, 2015, p.163). Kurt Lewin's change theory explained the process of change as forming a view that a change is needed, then moving toward the change, and finally, freezing that new behavior as the standard. According to the theory, practice change has three major concepts: driving forces, restraining forces, and equilibrium (Nursing Theory, 2016).

Application to DNP Project

Kurt Lewin's change model/strategy for change implementation applies to the nursing profession because it can be utilized to implement a change to improve practice. Research has shown the impact of utilizing evidenced-based guideline in outpatient behavioral health care

settings leads to improvements in antidepressant adherence in patients with depression, and also adequate improvement in the quality of life of patients with depression (Davies and Read, 2019). Lewin's change theory applies to the current practice of improving adherence to antidepressant medication in an outpatient setting. Kurt Lewin's change theory can be used to implement a guideline for providers to utilize in providing patient-centered care. Patient-centered care requires a shift in how a provider practices and how health systems are designed, managed, and reimbursed (Miller, 2016).

Utilizing the Lewin change theory for this DNP project will improve the knowledge of the outpatient clinic providers. Stage one (unfreezing) reviews the motivation to change; stage two (unfreezing and moving to a new state) affecting change, and stage three is when the change is permanent. In keeping with the tenets of patient-centeredness, this shift is driven by traditional hierarchies in which providers or clinicians are the sole authority. Under patient-centered care, care focuses more on the patient's problem than on the diagnosis (Miller, 2016).

Major Tenet of the Kurt Lewin Change Theory.

This theory will provide essential structure to investigate and address the health behaviors, psychological beliefs, benefits, barriers, and feelings that may be contributing to a patient's unwillingness to take antidepressant medications (Hamrin et al., 2017). For a successful implementation of change in an organization, there has to be a strategic process. Choosing the right change strategy will make implementing the changeless challenging and promote a good transition. Kurt Lewin's three-step change model stages identified three stages in which change must happen before it becomes part of the system; *unfreezing-change-refreeze mode.* The strategy involves identifying the organization's driving and restraining force in a straightforward and no-nonsense approach. According to Lewin's theory, the change will

be useful if the people involved embrace it and help put it into practice (Mitchell, 2013). The unfreezing stage entails letting go of the previous way of doing things that are not working correctly. In contrast, the moving stage entails the provision of supporting information for change in the organization, and the last stage, known as the refreezing stage (when equilibrium is established), is the stage that ensures creating and implementing an evaluation system for change (Mitchell,2013). These stages will help analyze the process of change and help identify forces that can move the change forward or create a barrier to weaken the organization's change.

Unfreezing

The unfreezing entails letting go of an outdated plan that has been unfavorable by either increasing the driving forces that direct behavior away from the existing situation of things, as well as curtailing forces that disrupt current equilibrium (Peptirin, 2016). In this unfreezing stage, the professional medical teams are updated on concerns of antidepressant nonadherence in patients and related practice guidelines in other to initiate change.

Change

The second stage of Lewin's change involves educating and implementing the change for behavioral or thought movement towards a process that produces positivity and balance. This change stage entails analysis by stakeholders and medical teams to improve clinical practice by implementing a guideline for promoting antidepressant adherence. The educational sessions regarding the practice change will improve the current practice already in place.

Refreezing

The last stage, called refreezing, is launching a transformation and initiation of a new pattern incorporated into an organization's daily operation. The third stage entails the clinical providers' readiness to freeze (accept and integrate) the new practice change (Oguejiofo, 2018).

Refreezing is the ratification of policy changes seen with policy changes to favor implementing the guideline for patients with depression (Petiprin, 2016).

Project Design

The overall purpose of this evidence-based DNP quality improvement (QI) project is to create and implement best practice guidelines that outline the process for providers and nurses to follow, to improve antidepressant adherence rates in adult patients. The DNP quality improvement (QI) project's primary goal is to maintain the implementation of the best practice guideline in other to enhance adherence in patients on antidepressants.

Setting

The setting is an outpatient behavioral clinic located in El Paso Texas. This clinic provides medication management, psychosocial and rehabilitative programs, low energy and neurofeedback systems, and individual and family counseling to patients aged 18-75 years. The clinic serves approximately 3,000 patients and sees more than 190 patients daily, with approximately 80% Hispanics, 10% Caucasians, 5% African Americans, and 5% Middle Eastern and Asians. The chief executive officer (CEO), chief medical director (CMD), and chief operating officer (COO) have approved the project and staff are aware. The clinic currently uses carelogic EHR.

Population of Interest

This project is a quality improvement project centered on psychiatric health providers who will implement the antidepressant adherence guideline and toolkit. There are currently six prescribing behavioral/mental health providers at this facility, who will be educated on antidepressant guidelines as a protocol for patients on antidepressants.

The inclusion criteria are psychiatrists, physician assistants, and nurse practitioners working at the behavioral outpatient clinic participating in the QI project, adult patients of the clinic from ages 18-75 years, and adult patients receiving first-time antidepressant therapy. The exclusion criteria are the non-prescribing employees of the clinic to include, therapists, and qualified Mental Health Professional-Community Services (QMHP-CS), medical assistants, intake staff, human resources, patient services, administrators, and billing, coding staffs of the clinic, and patients of the clinic less than 18 years old.

Stakeholders

The stakeholders for this project consist of the CEO, management of the behavioral clinic, COO, human resource manager, psychosocial rehabilitative specialists, caseworkers, office manager, and adult patients of the clinic from ages 18-75 years. The stakeholders will be notified about the project and asked to share their feedback and suggestions throughout the process.

The project lead has received the approval of the project from the CEO and chairman of the behavioral clinic, and COO. For communication with stakeholders during the project planning and implementation phase, each stakeholder will receive an official email, and a text message will be sent via the GroupMe provider's app. Information about the project would be provided and will allow stakeholders to ask questions and state their concerns and questions.

Interventions

The timeline for this quality improvement project will be over four weeks. The medical providers will be notified about the project via the GroupMe app, and given that this is a quality improvement project, the education session will be provided to all five medical providers (NPs, Pas, and Physicians) within the organization. Currently, the number of medical providers

employed at this practice is five.

An evidenced-based protocol for providers when prescribing antidepressants to enhance antidepressant medication adherence was developed. A Pretest will be given to the providers prior to a PowerPoint presentation about the new toolkit and guidelines followed by a post-test.

Week 1: The project lead will meet with the providers, give a pretest to the medical providers, and provide education, followed by a post-test.

Week 2: Weekly retrospective chart reviews and implementation of the evidenced-based toolkit that outlines the process for providers (Nurse Practitioners, Physician Assistants, and Physicians) to follow in enhancing adherence to antidepressant adherence in adult patients at the practice site will continue. Meeting with the providers/stakeholders about updates on the project. The project lead will meet with the providers as needed every week to assess adherence to the protocol, check on the progress, and outcomes of the implementation and evaluation.

Week 3: Implementation of the evidenced-based toolkit that outlines the process for providers (Nurse Practitioners, Physician Assistants, and physicians) to follow in enhancing adherence to antidepressant adherence in adult patients at the practice site will continue. Random chart reviews after the implementation of the protocol

Week 4: Have the nurse supervisor call the patients to determine if they are still taking their medications. Final data collection and analysis of data will begin.

The data collection and analysis will be completed using the electronic health record (Carelogic). The practice site has granted the project lead permission and the required proper security measures and passwords. This QI project's chart review entails a retrospective EMR random chart review of 30 charts of new patients prescribed antidepressants. Another 30 random charts will be reviewed after the implementation of the guidelines and toolkit to determine

antidepressant medication adherence and provider adherence to the protocol.

All charts will be identified using a number to ensure that privacy and confidentiality are duly observed. Each chart will be designated a number with data recorded on a Manual Data Collection Spreadsheet (MCDS) and password protected. HIPAA, privacy, protection, and confidentiality will be maintained. Data collection on protocol adherence and will occur weekly through a chart audit.

Tools/Instrumentation

The tools that will be utilized for this project include the Antidepressant Adherence protocol for providers (Appendix D), the "CCNC Adult Depression Toolkit for Primary Care" by the Community Care of North Carolina (CCNC) workgroup comprised of Network Psychiatrists, Network Medical Directors, Pharmacists, Behavioral Health Coordinators, and representatives from area academic centers (Appendix E), provider's pre-test and post-test (Appendix F), Pre-test and Post-test score card (Appendix G), PowerPoint (PPT) presentation for providers (Appendix H), Content Validity Index (CVI) (Appendix I), Chart audit tool/Manual Data Collection Spreadsheet (Appendix J), CCNC approval notification (Appendix K). The IBM SPSS software will help create and organize data collected and statistically analyze the project site's data.

Toolkit

Evidenced-based findings suggest that early optimized treatment, using measurement-based care and customizing treatment to the individual patient, may afford the best possible outcomes for each patient. The CCNC Toolkit provides practical, evidence-based tools to help treat depression in adults, including implementation recommendations and an overall algorithm to help with the initial assessment to determine the severity and the corresponding recommended

treatment approach, screening tools, critical decision points, medication recommendations, and many other useful guides. The permission for use of this toolkit was obtained and permission granted by the Vice President of CCNC (Appendix K).

The CCNC toolkit was utilized to generate a protocol to be given to the medical providers to foster best practices that promote patient-centered mental health management in patients with depression. Thus, the implementation of the toolkit and protocol approaches require the efforts of facility administrators and clinical leaders, nurses, physical and occupational therapists, counselors, case managers, information technology and quality assurance teams, nurses, medical assistants, and administrative staff.

Protocol

The protocol was developed based on the strategies defined by the "CCNC Adult Depression Toolkit for Primary Care" by the project lead in collaboration with the project mentor and medical providers at the practice site. The protocol will be reviewed by the medical director at the site, and the designated project team members. A summary of the protocol has been approved by the medical director and will be given to the providers as a reference guide to utilize with patients on antidepressants.

The protocol will help improve the provider's knowledge, thereby ensuring positive patient outcomes for patients. The analysis will attempt to determine if there is a significant change in the rates of adherence in patients on antidepressants as compared to pre-implementation.

PowerPoint Presentation

A PowerPoint presentation will be used to educate the providers (See Appendix H). The presentation will provide providers with information on depression, treatment for depression, the

importance of medication adherence, facts about depression, and treatment guidelines and protocol essentials for antidepressant adherence toolkit.

Pre and Post test

A pre and post-test will be administered to the providers participating in this QI project to measure their knowledge both prior and after the review of the PowerPoint presentation. The pre and post-test will consist of ten questions to gauge the overall knowledge, and skill before and after the PowerPoint presentation. A Content Validity Index (CVI) for the pre and post-test questions was completed. The mean total of all the CVI means is 3.76 indicating that all of the questions were moderately/highly relevant (see Appendix I).

T-paired Test

The paired -t test is used to assess mean differences between pre and post periods with respect to a dependent variable. A paired samples t-test will be used to measure and compare the results of the pre and post-test. The paired-t test was performed to assess the knowledge scores pre and post phase. According to Pallant, 2016, Paired sample test are used when the same set of people are tested more than once.

Binomial Test

When an outcome is dichotomous, the inference test must be the proportion test. The binomial test will be performed to assess if the post-test proportion of participant adherence is statistically different from the pre-test proportion of provider adherence. A binomial test uses sample data to determine if the population proportion of one level in a binary (or dichotomous) variable equals a specific claimed value. When an outcome is dichotomous, the inference test must be the proportion test. The minimum sample size required for a t test is 34. This project only has 5 providers.

Binomial Test Assumptions:

1. Items are dichotomous and nominal.
2. The sample size is significantly less than the population size.
3. The sample is a fair representation of the population.
4. Sample items are independent.

Manual Data Collection Sheet (MDCS)

A Manual Data Collection Sheet (MDCS) will be completed and maintained by the project lead to ensure there is confidentiality maintained throughout the project (see Appendix H). Data collection for this QI project will include a manual review of the provider's notes and patient charts to document whether the provider adhered to the new evidence-based guidelines. It will also include the retrospective review of charts, to assess adherence in patients before the new protocol implementation. It will also include patient adherence rates to prescribed antidepressant medication after implementation of the protocol.

Data Collection

Data will be collected to determine the provider's knowledge, protocol adherence, and increased antidepressant adherence in patients in the pre- and post-implementation period. The first step will be collecting the pre and post-tests after the PP presentation. The pre-test scores will measure baseline knowledge before the educational intervention, while the post-test scores will measure the effectiveness of teaching and educational materials. The project lead will meet with the providers as needed every week to assess adherence to the protocol and answer any questions that arise.

Thirty retrospective random charts will be reviewed to determine the percentage of individuals who adhered to prescribed antidepressants before protocol implementation. Thirty

random charts will be reviewed after the implementation of the new protocol to determine adherence rates to prescribe antidepressant medication. Each chart will be assigned a random number (001-060).

Plan for Analysis/Evaluation

Data was collected onto an Excel spreadsheet, and analyzed utilizing the 27th IBM SPSS software. A paired samples t-test will be used to measure and compare the results of the pre and post-test. According to Pallant, 2016 paired sample tests are used when the same set of people are tested more than once. A binomial will be utilized to analyze the results of the pre- and post-protocol adherence by providers because there was no interval outcome. Data will be collected to determine how often the providers adhered to the new protocol. Thirty retrospective random chart reviews will determine the percentage of individuals who adhered to prescribed antidepressants before protocol implementation. After implementing the protocol, another thirty random chart reviews will determine the percentage of individuals that adhered to prescribed antidepressants and a comparative analysis will be done.

The analysis will attempt to determine if there was an increase in the percentage of adherence in patients on antidepressants compared to pre-implementation. Evaluating the project implementation will be useful in increasing the knowledge, perceptions, and awareness of the mental health providers, thereby improving patients' outcomes on antidepressants.

Ethics/ Human Subjects

The QI project is centered on implementing an antidepressant adherence protocol for providers to follow to promote antidepressant medication adherence in adults. The QI project includes the medical providers at the outpatient clinic setting and excludes the direct involvement of patients. According to Tucker et al., (2016) generating de-identified datasets

helps offer increased protection for patient privacy through masking, mitigation of patient privacy, or generalization of direct and indirect identifiers of subjects. The risks associated with the QI project for the nurse practitioner, and physician assistants, and physicians to participate in this QI project are negligible. The confidentiality, privacy information of the participants, and protection of human dignity will be maintained. Each chart reviewed will be assigned a random number (001-060). The data will be compiled into the Manual Data Collection Sheet (MDCS), secured in a HIPPA compliant cabinet, and made available to the project lead. Per Touro University Nevada IRB policy the QI project will submit a project team determination form, although it is not anticipated that the project will require a full IRB review.

Analysis of Results

Data collection for this DNP project was collected over a four-week timeframe using EHR audits to evaluate patient's adherence to antidepressants and improve provider's knowledge in the pre-and post-implementation period using the IBM SPSS Statistics Data Editor Software program.

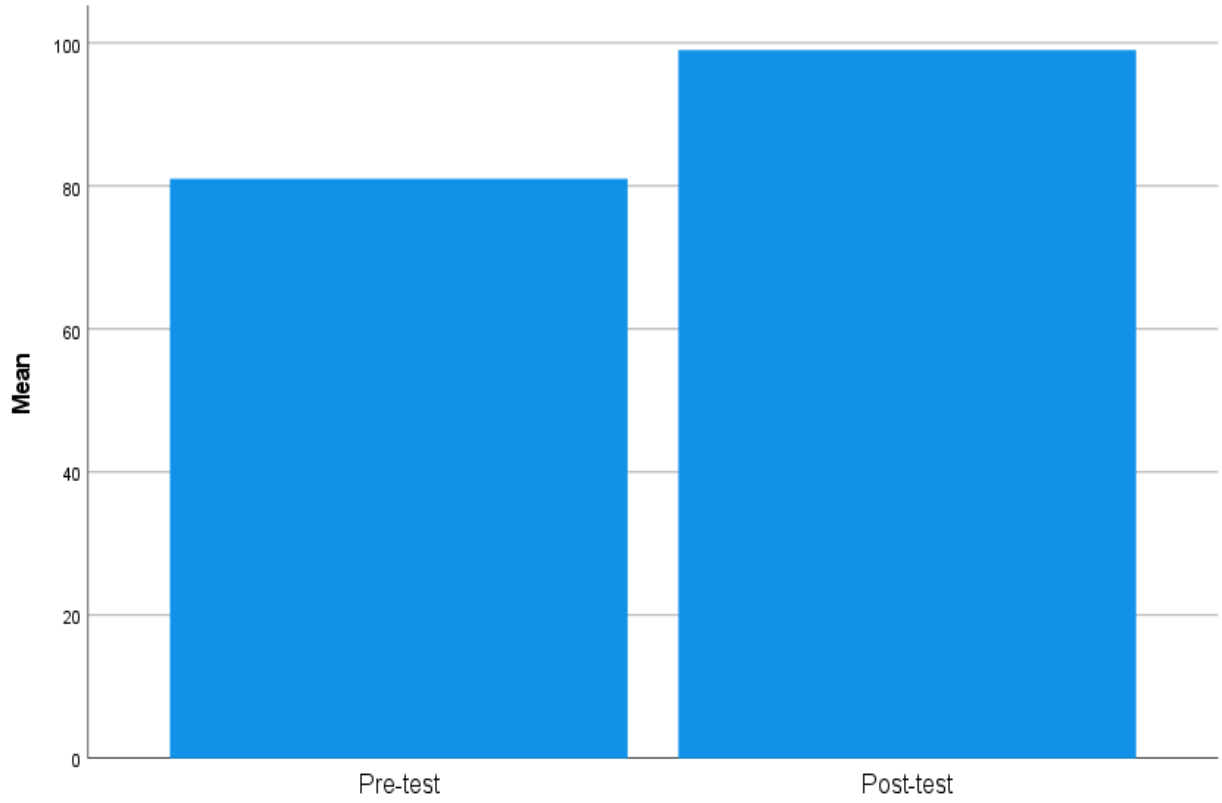
Pre and Post Test

The pre-test was administered to the mental health providers on March 18, 2021, before the educational training sessions to measure provider knowledge before training and followed by a post-test after the educational training to evaluate the improvement in provider awareness and knowledge. Pre-test scores ranged from 60-90% and post-test scores ranged from 95-100%. Post-test- scores improved in comparison to the pre-intervention scores 60% to over 95%. All five providers completed a ten-question pretest on the importance of antidepressant adherence in adult patients with depression before the education training session and the identical ten-question post-test after the educational session.

As shown in Table 1, pre and post-test scores were estimated and compared using a paired t-test. All the five provider's overall pretest score was 81%, and post-test was 99% after the educational session. The average score increase of 18 % in awareness score was highly significant (t=-18, df=5, p-value=0.00). The result of the pre-test and post-test were compared, and the increase in score between the pre and post-test showed a knowledge increase evidenced by a mean score of 81% versus a score of 99% on the post-test (see Chart 1).

Chart 1

Provider Pre-Post Antidepressant Adherence Knowledge Test



The paired t-test is used to assess mean differences between pre and post-test for a dependent variable. The paired t-test was performed to assess the knowledge scores pre and post-test. There is a statistical significance in the mean difference of -18 (se=1.000) in favor of the post-test (t=-18, df=5, p-value=0.00).

Table 1.

Pre and Post Pre-Post Antidepressant Adherence Knowledge Test Paired Samples Statistics

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	pre	81.00	6	2.000	.816
	post	99.00	6	2.000	.816

Table 2.

Pre and Post Pre-Post Antidepressant Adherence Knowledge Test Paired Samples Correlations

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	pre & post	6	.250	.633

Table 3.

Pre and Post Pre-Post Antidepressant Adherence Knowledge Test Paired Samples Test

Paired Samples Test

		t	df	Sig. (2-tailed)	
Pair 1	pre - post	-18.000	5	.000	

Table 4.

Pre and Post Pre-Post Antidepressant Adherence Knowledge Test Paired Differences

Paired Samples Test

		Paired Differences				
					95% Confidence Interval of the Difference	
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper
Pair 1	pre - post	-18.000	2.449	1.000	-20.571	-15.429

Table 5.

Pre and Post Pre-Post Antidepressant Adherence Knowledge Test Paired Samples Effect Sizes

Paired Samples Effect Sizes

					95% Confidence Interval	
			Standardizer[a]	Point Estimate	Lower	Upper
Pair 1	pre - post	Cohen's d	2.449	-7.348	-11.835	-2.909
		Hedges' correction	2.655	-6.781	-10.920	-2.684

a. The denominator used in estimating the effect sizes.

Cohen's d uses the sample standard deviation of the mean difference.

Hedges' correction uses the sample standard deviation of the mean difference, plus a correction factor.

Chart Audit

The project lead conducted a pre- and post-implementation chart audit to determine if the protocol was effective in improving patient's adherence to antidepressants. The project lead determined whether providers improved knowledge helped improve patient's antidepressant adherent rates differed by comparing the pre-implementation adherence rate to the post-implementation adherence rate. To conduct the analysis, the project lead entered data from pre- and post-implementation chart audit score sheets and data from pre-and post-educational result sheets into SPSS, with subsequent binomial analysis. The t-paired test was performed to assess if the post-test proportion of participants was different from the pre-test proportion of participant knowledge score, while the binomial test was used to assess if the protocol adherence pre-implementation is statistically significant post-implementation.

Thirty retrospective charts were reviewed to determine the percentage of individuals who

adhered to prescribed antidepressants before the educational training and protocol implementation. Thirty random charts were reviewed after the implementation of the educational training and antidepressant adherence protocol to determine the percent of adherence rates to prescribed antidepressant medication. Each chart was assigned a random number (001-060). No patient identifiers were used to maintain confidentiality.

The chart audit pre- and post-implementation of the teaching and antidepressant protocol showed a significant improvement in new patients on antidepressants. There was a significant difference between patient pre-post adherence to antidepressants after the project implementation (p=0.017). Monitoring over a longer period would be required to assess whether the protocol resulted in a continued statistically significant increase in antidepressant adherent rates.

Table 6

Binomial test comparing Provider's adherence Pre and Post Implementation of Antidepressant Protocol

	Post-Implementation	Pre-Implementation	P-Value
Yes	80%	60%	0.017
No	20%		

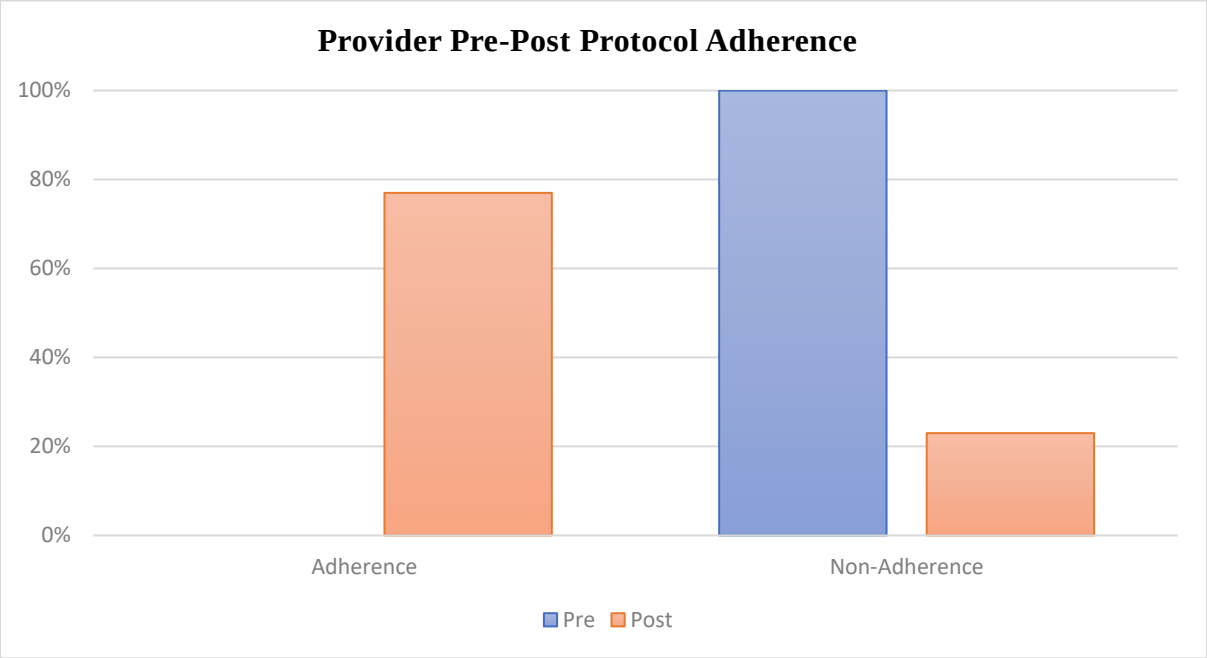
Adherence Rates to Protocol

There were sixty chart audits performed for this QI Project and three of the five mental health providers reported consistent use of the antidepressant adherence protocol (Figure ii). The left section below illustrates provider pre and post protocol adherence and the right section illustrates provider pre and post protocol non-adherence. Descriptively, post-test (adherence section), all providers increased their adherence to protocol with an overall rate of 77% from 0%. Pre-phase none of the providers adhered to the protocol, that is why there isn't a bar for pre-

phase adherence. This graph illustrates overall provider pre and post protocol adherence and non-adherence.

Chart 2

Provider Pre-Post Adherence to Antidepressant Protocol



Discussion

The purpose of the DNP project was to implement a quality improvement project to improve antidepressant adherence in adult patients with depression and enhance the knowledge of the mental health providers of an outpatient behavioral setting. According to Sivertsen et al., 2015 depression is the third leading cause of disability worldwide, causing a profound effect on health and quality of life. The DNP project question sought to determine if the implementation of an evidence-based guideline on antidepressant adherence improves adherence rates in adult patients of 18 -75 years within a four-week implementation phase.

The primary objective of this DNP project is to establish the efficacy of educating providers with knowledge on an evidence-based toolkit and guidelines to follow in enhancing

and improving adherence to antidepressant medications, show a 5% increase in antidepressant medication adherence in patients within four weeks of implementation, and define the clinic's policy and roles related to the care of patients with depression. Depression affects an individual's ability to perform daily living activities and impacts the patient's daily activities if not treated, resulting in a complication that reflects the inability to interact or function positively with others (Barnacle et al., 2016).

The data analyzed providers' knowledge on antidepressants and depression before and after the educational session and the rate of patient antidepressant adherence pre-implementation and post-implementation of the antidepressant protocol. A chart audit tool was used to collect data for new patients on antidepressants meeting the inclusion criteria and chart audits pre-and post-implementation of the protocol to determine if the antidepressant adherence protocol was utilized. The baseline for data was obtained before the education and implementation of the protocol, and data were recorded and compiled in the Excel spreadsheet and analyzed using SPSS.

Pre-implementation audit of the 30 patient's medication adherence rate before the teaching was at 60%, and post-implementation audits of medication adherence rates for 30 patients were at 80%. Per the patient chart audits, 30 chart audits occurred with 18 patients' adherence to prescribed antidepressants before implementing the antidepressant adherence protocol. Post- antidepressant adherence protocol implementation increased the adherence rate to 25 patients, representing a 20% increase.

This quality improvement project proposed to answer the following clinical questions: Will implementing an evidence-based guideline on antidepressant adherence improve the adherence rate in adult patients of 18 -75 years within four weeks of the project Implementation phase? Thus, the providers used the protocol, which increased the number of completed

assessments by showing a 20% increase in antidepressant medication adherence within four weeks of implementation, meeting the objective of Improving early intervention rates for patients at risk for nonadherence to antidepressant medications, thereby defining the clinic's policy and roles related to care of patients with depression. The project outcomes showed that the evidence-based antidepressant adherence protocol successfully improved provider's knowledge about depression and increased antidepressant adherence in patients with depression.

Significance

This quality improvement project was developed to improve antidepressant adherence by educating providers on depression, the importance of patient's adherence to prescribed antidepressants, and implementing an evidence-based guideline as a protocol to use for patients on antidepressant medication to increase adherence rates in outpatient behavioral healthcare settings. The developed protocol was adhered to by the mental health providers and utilized for depressive patients on antidepressants. Depression is a prevalent comorbid health condition of chronic diseases such as obesity, cardiovascular disease, and diabetes. Minimizing the prevalence of nonadherence is imperative; therefore, the outcomes obtained with this DNP project were substantial for all mental health providers and patients on antidepressants at this outpatient clinic.

Nonadherence to an antidepressant treatment regimen can lead to complications that can worsen as symptoms persist without adequate medication treatment. If antidepressant treatment is not practical, the patient could become isolated and feel even more alone and affect activities of daily living, such as self-care and social interaction (National Institute for Mental Health, 2013). Depressive disorder is the second most common psychiatric disorder and a public health priority for adults (Chin et al.,2016). One of the key identified barriers for the treatment of MDD

is lack of adherence to an antidepressant regimen. Depression frequently goes untreated because adult patients may be less willing to talk about their feelings with strangers, friends, family members, and healthcare providers (National Institutes of Health Senior Health, 2011).

The critical component of improving the early recognition and treatment of depression is implementing practice changes with providers regarding the treatment of depression with support and antidepressant medication. Untreated depressive disorders can negatively influence the course of many somatic diseases, which puts the patient at risk of polypharmacy, frequent hospitalizations, and suicidal ideations and attempts (Chin et al., 2016). The result for this project and protocol is very applicable at the project site and indicated a successful effect of the DNP project for this facility, fulfilling the objectives. This project intervention can assist providers in reducing nonadherence to antidepressants and improve patient's adherence to prescribed antidepressants.

Limitations

There were several limitations encountered during this project implementation, especially the difficulties resulting from the ongoing global pandemic. Due to social distancing and associated complexities of the COVID-19 pandemic restrictions, the clinical site changed services to an online/virtual platform, making it challenging to have educational training in person. Another limitation of the DNP project is the short timeline for implementing the project intervention. The project implementation took place over four weeks. Chart audits on antidepressant adherence was collected for four weeks after the educational training of the providers was implemented.

The number of participants at the practice site for this DNP project was limited. There were ten prescribing medical providers at the facility. However, only five prescribing medical

providers were working at the practice site at the time of the project implementation, which provided a minimal sample size, smaller than the anticipated number of providers for this project.

Analysis

The small sample size of the project was a limitation, and data analysis of the project included a paired-samples t-test. Due to the small samples for this project, binomial and t-paired tests were utilized for data analysis for this project. The small sample size of five medical providers may limit the utility of the conclusions.

Dissemination

This DNP project result was submitted to the Chief Medical Director and CEO at the practice site. The antidepressant adherence protocol and outcomes were reviewed with the medical provider participants and stakeholders at the project site. It has been accepted by the chief medical director at the site as a permanent antidepressant protocol for depressive patients on medication treatment. An official presentation of this DNP project results and conclusions will be presented to the Touro University faculty and students on June 22, 2021, via the "Zoom" online app.

This QI project will be uploaded to the DNP repository of Touro University's Doctor of Nursing Practice Repository database and for publication in a peer-reviewed nursing journal. The project lead plans to disseminate the findings of this project to the Texas chapter of Black Nurses Rock Professional Organization and the DNPs of color (DOP) professional conference on July 22, 2021. Through electronic submission of this project to the DNP repository, the results of this quality improvement project will be open to being accessed by the public for years to come, thereby serving as a model for other quality improvement projects.

An abstract can be submitted for presentation at the 2021 AANP Fall Conference in Hollywood, Florida, dated September 23, 2021 – September 26, 2021. This event is focused on quality improvements and best practices. The project will also be disseminated through an abstract submission for publication and presentation to a mental health professional and nursing audience at theGlobal Alliance and the International Society of Psychiatric-Mental Health Nurses (ISPN) dated March 15-20, 2022 at Redondo Beach, CA, to support advanced-practice psychiatric-mental health nurses in promoting mental health care, literacy, and policy worldwide.

Sustainability

Sustainability consists of organization stakeholders such as the Chief Medical Officer and Chief Operations Officer, who can provide the support needed to sustain the goals of this quality improvement project. Project sustainability will be accomplished through the integration of the protocol for all prescribers at the project site An in-service training will be provided to educate newly hired medical providers and nursing staff on the antidepressant adherence protocol. The medical director has given the go-ahead to allow this intervention to serve as a healthcare model for the clinic.

Conclusion

The rising trend in patient nonadherence to antidepressants indicates a need to improve patient's adherence to prescribed antidepressants. The significant challenge for effective management of Major depressive disorder is nonadherence to antidepressant medications, and the reasons vary between patient factors and inadequate patient education and assessment of adherence on the part of providers.

Major depression is a prevalent disorder amongst the adult and geriatric populations. According to Brown & Sinsky, (2018), patients adhere to the medication regimen when they take

80% of the medication. The chart audits post-education intervention revealed increased provider knowledge, improved care, and antidepressant adherence rates. The project demonstrates the direct relationship between knowledge and performance. Improving provider's knowledge on the impact of antidepressant adherence and utilizing the adherence protocol helped enhance favorable outcomes for the patients.

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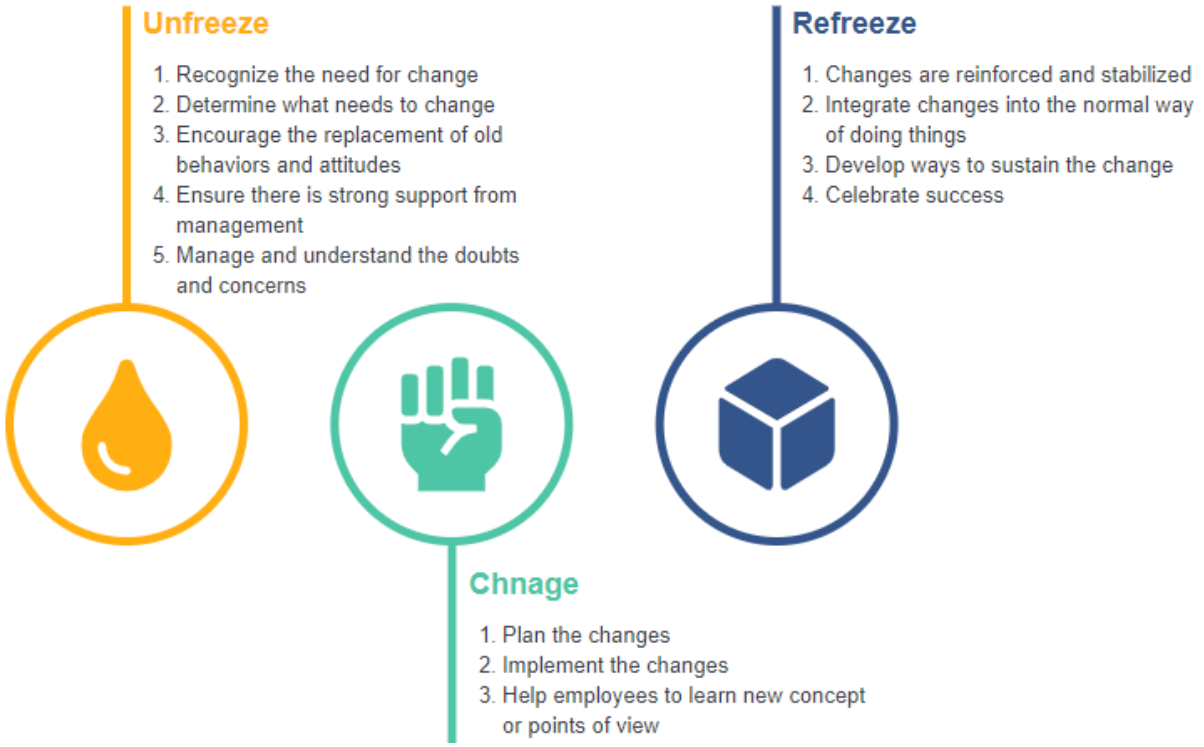
Appendices

A	Theoretical Framework: Kurt Lewin's change model
B	Letter to Stakeholders
C	Project Site Agreement
D	Antidepressant Adherence Protocol
E	CCNC Depression Toolkit Recommendations
F	Pre-test and Post-Test
G	Pre and Post Test Score Sheet
H	PowerPoint (PPT) presentation
I	Content Validity Index Table
J	Chart audit tool (Data Collection Sheet)
K	CCNC Toolkit permission document

Appendix A

Theoretical Framework: Kurt Lewin's change model



Appendix B

Letter to Stakeholders

Letter to Stakeholders

Dear Stakeholder:

I want to introduce you to a protocol guideline to promote antidepressant adherence rate in adult patients. I hope that you will support this exciting new endeavor. I am embarking on an important new initiative focused on improving antidepressant adherence in patients and promoting positive outcomes for depressive adults on antidepressants. Major depressive disorder (MDD) is a chronic recurring illness that is one of the leading causes of disability worldwide due to its high prevalence and associated impairment. Left untreated, major depressive disorder may result in progressive alterations in brain morphometric and circuit function. Early optimized treatment provides the best opportunity for full functional recovery; thus, the implementation of this protocol may require the efforts of facility administrators, clinical leaders, nurses, counselors, case managers, information technology and quality assurance teams, nurses, medical assistants, and administrative staff.

In this project, I will be developing an evidence-based guideline and protocol for medical providers integrated into the already-existing treatment modality. Nonadherence to antidepressants has negatively impacted health care and a significant challenge to patient outcomes. Hamri et al. (2017) indicate the factors responsible for nonadherence to an antidepressant medication includes adverse side effects, lack of education on medication benefit, unawareness of the diagnosis, lack of information on the purpose of the medication, forgetfulness, fear of medication abuse or addiction, costs, stigma, lack of support from families and health care provider. Findings suggest that pharmacotherapy may halt and possibly reverse those effects. Together with evidence that a delay in treatment is associated with poorer clinical outcomes, these findings underscore the urgency of rapidly treating depression to full recovery.

The tools utilized for this QI project will foster best practices that will promote and improve antidepressant adherence rates in depressed adult populations. Using these tools, we will assess staff awareness and knowledge of depression, treatment, nonadherence prevention, analyze patient care processes to identify where there are risks to patient noncompliance. Your support in helping staff make this shift is essential to the success of this effort. Thank you.

Sincerely,

Taiwo Abioye, APRN-CNP, PMHNP-BC

Appendix D

Antidepressant Adherence Protocol

Use this worksheet to think about how to formulate patient-centered, non-judgmental, conversation with your non-adherent patient.

Opening the adherence discussion: You suspect that your patient is non-adherent. In what ways can you assess whether or not the person is adherent? How can you open up a discussion about medication adherence? What will you say?	
Assessing relevant barriers to medication adherence: What potential barriers to adherence is this specific patient likely to have? How will you assess those barriers and what tools can you use? What questions will you ask?	
Promoting medication adherence and achieving patient buy-in: Are there any important counseling points you'd like to highlight that might encourage the patient to take their medications?	
Formulating the medication adherence plan: What potential strategies can be employed to support the patient's adherence? How will you introduce these strategies to the patient? What will you say?	
Wrapping up the session: How will you know that the patient understands the adherence plan? What types of questions or phrases will you use to close the session?	

Antidepressant Adherence Protocol

1. Assess antidepressant adherence barriers.

2. Education on importance of antidepressant adherence

3. Implement health strategies that reduce nonadherence.
4. Promote safe and effective medication-taking behaviors.
5. Assess for Fear of side effects and educate.
6. Assess inadequate knowledge on Antidepressants.
7. Support implementation of non-adherence prevention strategies.
8. Foster a safe, healthy, and effective medication use process.

Assess antidepressant medication adherence barriers.

Patient medication adherence barriers should be explored, and a care plan should be used to address patient barriers.

- implement strategies that reduce medication nonadherence.

-Promote safe and effective medication behaviors.

-Develop and implement strategies that reduce medication nonadherence

-Foster safe and healthy medication use processes

-Prescribe simple medication regimens

Education on importance of antidepressant adherence.

-Define medication adherence and its importance for patient health.

-Explain mechanism of action for antidepressant, importance of adherence and its importance --for patient health

Implement health strategies that reduce nonadherence.

-Choose the most appropriate option for the patient.

-Develop a process for routinely asking about medication adherence.

-Create a shame- and blame-free environment to discuss medications with the patient.

Promote safe and effective medication-taking behaviors.

Carelogic through DRFIRST EHR has a Patient Adherence Scorecard which provides providers with adherence rates for all current medications for the past two years.

-Prior to prescribing new medications, providers will check the patient's drug formulary to assure coverage of prescribed medication.

-Patients prescribed a new medication will receive a follow-up phone call from (nurse, medical assistance, etc.) within 48 hours of the patient visit. The goal of the follow-up phone call is to identify and rectify any patient barriers to medication adherence.

Assess for Fear of side effects.

Ask questions to try to find the cause(s) for fear of side effects and identify the influence of external factors such as media and other persons.

Focus on the elimination of the fear, using the following possibilities: -

-Explain that the medication can cause side effects and provide the patient information about the risk for side effects and the desired effects.

- Discuss the best way for medication intake to prevent side effects.

-Agree about the intake of the medication and encourage the patient to report existing side effects.

Assess inadequate knowledge on Antidepressants.

Discuss the prescribed use of the Antidepressant.

-Discuss current prescription medication and assimilate the new medication into the patient's medication plan.

-Enquire patient's nurture and culture on Antidepressants.

-Explain the importance of regular medication intake for the efficacy of the medication - and the possible side effects and interaction with other medication.

TABLE 3
ADHERENCE TO REFILLS AND MEDICATION SCALE

1. How often do you miss scheduled appointments?
2. How often do you forget to take your medicine?
3. How often do you decide not to take your medicine?
4. How often do you forget to get prescriptions filled?
5. How often do you run out of medicine?
6. How often do you skip a dose of your medicine before you go to the doctor?
7. How often do you miss taking your medicine when you feel better?
8. How often do you miss taking your medicine when you feel sick?
9. How often do you take someone else's medicine?
10. How often do you miss taking your medicine when you are careless?
11. How often do you change the dose of your medicines to suit your needs (like when you take a more or less pill than you're supposed to)?
12. How often do you forget to take your medicine when you are supposed to take it more than once a day?
13. How often do you put off refilling your medicines because they cost too much money?
14. How often do you plan ahead and refill your medicines before they run out?

Appendix E
CCNC Depression Toolkit Recommendations

CCNC Adult Depression Toolkit for Primary Care

Community Care
OF NORTH CAROLINA

CCNC Depression Work Group Implementation Recommendations

To meet the requirements for evidence based depression treatment in the primary care setting certain levels of "support" need be in place at a practice. Screening with a PHQ-9 for depression is not by itself sufficient to be considered evidence based care. However, in appreciation of the scarcity of resources at most practices the depression work group had as a goal to come up with the **minimum** requirements that a practice would need to have in place to meet that standard. These are:

- A practice based "champion" who would be responsible for organizing an "implementation team" that would include buy in from physicians, nursing, and administration.
- A community based psychiatrist who would be an identified provider and who would serve primarily as a resource to the practice assuring enhanced community psychiatric access (referrals would be seen quickly by this provider). This would likely NOT include phone consultation since there is no billing mechanism. It is possible the network psychiatrist could fill that role but this would need to be worked out by each network.
- Someone in the practice who could make follow-up phone calls and then track when patients are due for follow-ups as they go through the depression algorithm.
- A commitment to monitor how the program is working (primarily fidelity measures rather than patient outcomes at first; see Audit Tool for suggestions). The initial suggested fidelity measure would be the presence of a PHQ-9 having been completed at baseline for anyone who has had an anti-depressant initiated (1st anti-depressant or change to a new anti-depressant).

We would suggest that each practice choose which specific patients to target for screening based on what would best fit their needs, and give the best chance for implementation success. Some possible choices are patients with diabetes, cardiovascular disease, patients already receiving anti-depressants, chronic pain patients, or high users of resources.

Critical Decision Points (CDPs) for Acute Phase Treatment of Major Depression

CDP	PHQ-9 Baseline Severity Parameters	Treatment Modification	Treatment Options Designed for medication treatment only. Psychotherapy for mild to moderate depression is also considered evidenced based.
WEEK 0 ***CDP #1***	Severity ≥ 10		Initiate antidepressant medication at lower end of the dose range.
WEEK 1 **Phone Call**	If severity >20 or clinical concern		Evaluate patient status, initial response to therapy, medication tolerance; if PHQ-9 question #9 (suicide) was +, conduct Suicide Screening and assessment; May be from trained physician, therapist, nurse, or care manager (If indicated return appointment scheduled prior to week 4.)
WEEK 2 **Phone Call**	Recommended for all patients (Do PHQ-9)		Evaluate patient status, initial response to therapy, medication tolerance. Increase antidepressant dose to medium dose range, as tolerated. May be from trained physician, therapist, nurse, or care manager (If indicated return appointment scheduled prior to week 4.)
WEEK 4 ***CDP #2***	PHQ-9 ≤ 5	None	
	PHQ-9, >5 and <10	Modify based on functionality & pt. preference	Continue antidepressant in medium dose range, as tolerated. Communicate with psychotherapist about progress (if applicable). Consider switch to a different antidepressant if tolerability is an issue
	PHQ-9 ≥10	Modify treatment	Schedule a return appointment for week 6. Consider switching to a different antidepressant. If no improvement at week 6, recommend switching antidepressant
WEEK 6 **Phone Call**	Recommended for all patients (Do PHQ-9)		Evaluate patient status, response to therapy, medication tolerance. If PHQ-9 question #9 (suicide) was +, conduct Suicide Screening and assessment. May be from trained physician, therapist, nurse, or care manager (If indicated return appointment scheduled prior to week 8.)

WEEK 8	PHQ-9 ≤ 5	None	Enter Continuation Phase
	PHQ-9, >5 and <10	Modify based on functionality & pt. preference	Increase antidepressant dose to higher dose range as tolerated. Communicate with psychotherapist about progress (if applicable). Consider switching to a different antidepressant.

CDP #3	PHQ-9 ≥10	Modify treatment	Increase antidepressant dose to higher range if there has been a partial response. Consider switching antidepressant.

WEEK 10 **Phone Call**	For patients who remain in the acute phase (Do PHQ-9)		Evaluate patient status, response to therapy, medication tolerance. If PHQ-9 question #9 (suicide) was +, conduct Suicide Screening and assessment. May be from trained physician, therapist, nurse, or care manager (If indicated return appointment scheduled prior to week 12.)
WEEK 12 **(q 4 wks)** ***CDP #4***	PHQ-9≤ 5	None	Enter Continuation Phase
	PHQ-9, >5 and <10	Modify based on functionality & pt. preference	Increase antidepressant to higher dose range as tolerated. Communicate w/psychotherapist about progress (if applicable). Consider psychiatric consultation.
	PHQ-9 ≥10	Modify Treatment	Increase antidepressant dose to highest dose. Switch antidepressant (if only had 1 antidepressant trial) *Consider psychiatric consultation

*Patients who do not achieve remission after 2 adequate 6-8 week trials of antidepressants (shorter if unable to tolerate higher doses) should have a psychiatric consultation for diagnostic & management suggestions. Goal is 100% Symptom Reduction by week 12.

Appendix F

Pre-test

1. Which of these behaviors is a symptom of depression?

a. Cynicism

b. Unexplained aggression

c. **Loss of interest in all things**

d. Rapid mood swings

e. Difficulty concentrating or remembering things.

2. The Goal of the Care Process in the treatment, continuation, and maintenance of Depression includes: (Select all that apply).

a. Preventing relapse/recurrence.

b. Continue pharmacologic and/or counseling treatment.

c. Remission of symptoms

d. **A and B only**

e. All of the above

3. According to the CCNC Critical Decision Points (CDPs) toolkit, if PHQ-9 scoring indicates recurrence/worsening of symptoms what should be done?

a. **Assess medication adherence and ensure that patient is scheduled for further visits.**

b. Ensure patient has many mediation refills.

c. Mental status assessment

d. Complete medical and psychiatric history

e. Discontinue all medications.

4. What are the required CCNC recommendation for an evidence-based depression treatment?

a. Immediate referral to a neurologist for complete assessment

b. **Recommends certain levels of "support" need be in place at a practice for patients with depression.**

c. Screening with a PHQ-9 for depression is the most sufficient model for diagnosing depression.

d. **Screening with a PHQ-9 is not by itself sufficient to be considered evidence-based care.**

e. **Identify display of risk factors and warning signs for nonadherence.**

5. A male Adult patient is at the clinic for a follow-up appointment related to treatment for depression. He began taking Escitalopram 20mg 2 weeks ago. He tells you, "I don't feel this medication is working, my symptoms of depression has not disappeared." What would be the provider's best response?

a. **"You may have to take this drug for a few more days before you feel its effects."**

b. "Your symptoms should have disappeared; I will discontinue the medications."

c. "You may have to taper off the dose and start a new medication."

d. "You may have to increase to 30mg Po QD."

e. "You need a lower dose of the antidepressant."

6. A provider is caring for a patient with depression. Which symptom should be closely monitored for in the patient?

a. Irritability

b. **Extreme sadness**

c. Anhedonia

d. Restlessness

e. Rapid mood swings

7. What is the treatment outcome for a person taking an antidepressant medication?

a. Improve sexual SE

b. Reduce symptoms of depression.

c. Decrease the likelihood of relapse of depression.

d. **b and c**

e. a, b and c

8. According to the CCNC Critical Decision Points (CDPs) toolkit, all adult at initiation phase of antidepressant medication should start at lower end of the dose range?

Circle one: **True** False

9. A patient is receiving an SSRI. The provider would inform the client that the full benefits of the drug may not occur for which time?

a. 12 weeks

b. **4 weeks**

c. 8 weeks

d. 2 weeks

e. 7 weeks

10. What are the steps recommended by the CCNC Critical Decision Points (CDPs) toolkit During the third stage of initiation of treatment plan for new patients on antidepressant (Select all that apply).

a. **Provide educational and Verbal Instruction on the diagnosis and treatment**

b. **Establish Treatment Care Plan with patient engagement.**

c. Provide patient education related to symptoms of relapse.

d. **Schedule time for clinical phone follow up contact.**

e. All of the above

Appendix F (continued)

Post-test

1. Which of these behaviors is a symptom of depression?

a. Cynicism

b. Unexplained aggression

c. **Loss of interest in all things**

d. Rapid mood swings

e. Difficulty concentrating or remembering things.

2. The Goal of the Care Process in the treatment, continuation, and maintenance of Depression includes: (Select all that apply).

a. Preventing relapse/recurrence.

b. Continue pharmacologic and/or counseling treatment.

c. Remission of symptoms

d. **A and B only**

e. All of the above

3. According to the CCNC Critical Decision Points (CDPs) toolkit, if PHQ-9 scoring indicates recurrence/worsening of symptoms what should be done?

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b. Ensure patient has many mediation refills.

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Circle one: **True** False

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a. **Provide educational and Verbal Instruction on the diagnosis and treatment**

b. **Establish Treatment Care Plan with patient engagement.**

c. Provide patient education related to symptoms of relapse.

d. **Schedule time for clinical phone follow up contact.**

e. All of the above

Appendix G

Pre and Post Test Score Sheet

PRE AND POST TEST SCORE SHEET

Participant #	PRE TEST SCORE	POST TEST SCORE	Remediation needed Yes/No

Appendix H

PowerPoint (PPT) presentation

Learning Objectives

Upon successful completion of this course, you will be able to:

- Discuss the etiology, psychopathology, diagnostic tests, signs and symptoms and management of major depressive disorder in the adult.
- Implement evidenced-based toolkit and guidelines for providers prescribing antidepressants to enhance antidepressant medication adherence.
- Use evidence-based practice to plan care for the client with major depressive disorder
- Evaluate their understanding of the guidelines.
- Show a 5% increase in antidepressant medication adherence within four weeks of implementation.
- Improve knowledge on early intervention rates for patients at risk for nonadherence to antidepressant

What is Major depression?

"COMMON COLD" OF MENTAL ILLNESS

19 million Americans have some type of depressive disorder

12% women & 7% men

PostPartum (PP) period most common time for women

1 in 5 Americans will have depression in their lifetime.

Depression can lead to debilitating suffering, high morbidity, and mortality rate when undiagnosed and left untreated.

Etiology

Physiological

Psychological

Genetics

Neuroamine Triad

Developmental

Etiology

Genetics: Genes may create a higher or lower likelihood of depression developing after exposure to stressful events.

Low levels of neurotransmitters: Norepinephrine, Dopamine, and Serotonin.

Developmental: Early object loss, and Learned helplessness

Psychological: Stressful life happenings, Death and loss of a loved one or a significant relationship, Loss of self esteem, traumatic event (chronic medical diagnosis, loss of job/retirement).

Physiological: Viral infections, Drugs, Childbirth, Nutritional deficiencies, Endocrine disorders, Chronic illnesses, Poor diet, Overwork, and Lack of physical activity.

Causative Factors for Depression

Depression can be due to multiple factors. Therefore, the diagnosis of depression is based on clinical findings from the history and physical examination.

Laboratory testing also will also assist to determine whether the cause of depression is due to a medical condition. To rule one of the most common cause, the thyrotropin (TSH) level test is crucial.

Scientists believe that if there is a chemical imbalance in the neurotransmitters norepinephrine, serotonin, and dopamine, and than clinical states of depression result. They have also found evidence of a genetic predisposition to major depression.

Low self esteem, lack of self-efficacy

In addition, trauma, loss of a loved one, a difficult relationship, or any stressful situation may trigger a depressive episode.

The thyrotropin (TSH) level test thyroid dysfunction that could stimulate symptoms of depression. The test identifies endocrine disorders which can contribute to depression and can even interfere with the effects of some antidepressant's treatment.

RISK FACTORS

Family history of depression

Previous incidence of depression

Prior suicide attempt(s)

Female gender (women 2 times greater)

Age of onset: < 40 & > 65 years

Postpartum period

Medical comorbidity

Lack of social support

Stressful life events/ Early childhood trauma

Personal history of sexual abuse

Current substance abuse

Early adulthood head injury

DSM 5 Criteria

Risk Factors for Depression

- Female
- Native American
- Middle-aged
- Widowed, separated, divorced
- Low income
- Other psychiatric disorders
  - Substance Abuse
  - Panic Disorder
  - Generalized Anxiety Disorder
- Personality Disorders
- Stressful life events and vulnerability to stress
- General Medical Condition
  - Diabetes
  - Stroke
  - Cancer
  - Chronic Pain
- First-degree relative with depression
- History of Depression

Warning Signs for Depression

- Multiple Unexplained Somatic Symptoms
- High Healthcare Utilizer
- Chief Complaint of Sleep Disturbance, Fatigue, Appetite or Weight Change

DSM-5 Criteria for Major Depressive Episode

A. Five (or more) of the following symptoms have been present during the same 2 week period and represent a change from previous functioning: at least one of the symptoms is either (1) or (2):
   1. Depressed mood most of the day, nearly every day
   2. Markedly diminished interest or pleasure in all, or almost all, activities most of the day, nearly every day
   3. Significant weight loss when not dieting or weight gain (e.g., a change of more than 5% of body weight in a month), or decrease or increase in appetite nearly every day
   4. Insomnia or hypersomnia nearly every day
   5. Psychomotor agitation or retardation nearly every day
   6. Fatigue or loss of energy nearly every day
   7. Feelings of worthlessness or excessive or inappropriate guilt (which may be delusional) nearly every day
   8. Diminished ability to think or concentrate, or indecisiveness, nearly every day
   9. Recurrent thoughts of death (not just fear of dying), recurrent suicidal ideation without a specific plan, or a suicide attempt or a specific plan for committing suicide

B. The symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.

C. The symptoms are not due to the direct physiological effects of a substance (e.g., a drug of abuse or a medication) or a general medical condition (e.g., hypothyroidism).

D. The occurrence of the major depressive episode is not better explained by schizoaffective disorder, schizophrenia, schizophreniform disorder, delusional disorder, or other specified and unspecified schizophrenia spectrum and other psychotic disorders.

E. There has never been a manic episode or a hypomanic episode.

Adapted from the Diagnostic and Statistical Manual of Mental Disorders, 5th ed.

Principles of Therapy

- Rule out drug-induced or other medical causes of depression
- Determine if the patient received an adequate dose for an adequate duration if no response
- Counsel patients on side effects and that they can occur immediately while resolution of symptoms may take up to 4 weeks.
- Evaluate potential DDI
- Always assess compliance
- Non-pharmacologic therapy: psychotherapy, counseling (provide additive effect to pharmacologic therapy), ECT and combination therapy (for severe illness)

Mechanism of Antidepressant Therapy

Antidepressant compounds work in two phases

- **Acute phase**
  - To increase neurotransmitters
- **Chronic phase**
  - Down regulation of the receptor in the first 2-3 weeks
  - Therapy takes 6-8 weeks to start seeing some decrease in signs and symptoms.
  - Most susceptible to suicide especially in young adult
  - Due to the proposed two-phase mechanism of action, the patients do not see improvement for 2-3 weeks following the start of therapy.

Treatment

The gold standard for treating major depressive disorder is pharmacological therapy using antidepressant drugs.

Current evidence has shown that a combination of psychotherapy and pharmacotherapy alone is effective in improving functioning and the quality of life of patients with depressive disorder.

Research has also shown that depression may be a result of genetic and environmental factors, which may result in an adverse impact on a patient's cognition, social functioning, work performance, quality of life, and relationship with the people close to them.

Health providers must know the manifestations of depression in populations and appropriate methods for improving antidepressant adherence in patients with depression.

Classes Of Antidepressants

Selective Serotonin Reuptake Inhibitors (SSRIs)

Serotonin Norepinephrine Reuptake Inhibitors (SNRIs)

Atypical Antidepressants

Tricyclics (TCAs)

Monoamine Oxidase Inhibitors (MAOIs)

Antidepressants

Selective Serotonin Reuptake Inhibitors (SSRI): It is the first line medication that is safer than the tricyclics & MAOIs. It works by inhibiting the reuptake of serotonin at the presynaptic membrane => more serotonin available in the synapse.

Serotonin Norepinephrine Reuptake Inhibitors (SNRI): It is a dual action reuptake inhibitor that inhibits serotonin in low doses, norepinephrine at moderate doses, and dopamine at high doses.

Atypical Antidepressants: **inhibit dopamine uptake making it more available. It** is used in patients who have inadequate responses or intolerable side effects with SSRIs.

Tricyclics (TCAs): It works by blocking the reuptake of norepinephrine, dopamine and / or serotonin. It is the third line agents related to side effects

Monoamine Oxidase Inhibitors (MAOIs): MAOIs were the first class of antidepressants to be developed. It works by inhibiting the MAOI enzyme that destroys norepinephrine and serotonin.

Antidepressant Adherence

- Managing depression requires different treatments due to the differences in its presentation and the high rates of relapse and recurrence in patients.
- Antidepressant adherence is a crucial component responsible for managing depression, which helps with handling the symptoms and provides patients the ability to maintain quality of life and decreased morbidity and mortality associated with untreated depression (Serna et al., 2015).
- Adherence to antidepressants results from adequate follow-up and enhanced education by health providers.

Importance of Patient Education

Evidence has shown that more knowledgeable people about mental illness are more likely to adhere to the prescribed medication. Patient-provider relationships can influence medication adherence, hence providers and medical staff's role in ensuring patient's adherence to medications.

Antidepressant adherence is achievable when psychiatric providers initiate and continue to guide patients with depression through all treatment phases and coordinate collaborative patient care with other clinicians.

Individuals living with mental illness and their families must be cautious during the early stages of medication treatment because normal energy levels and the ability to act often return before mood improves. During this stage, judgements are easier to make, but because depression is still severe, the risk of suicide is imminent.

For about two-thirds of those individuals who have a major depressive episode they will recover completely. The other one-third may recover only partially or not at all. People who do not recover completely may have a higher chance of experiencing one or more additional episodes.

Nonadherence to Antidepressants

* Antidepressant nonadherence is one of the significant challenges for health care professionals in treating patients with depression, leading to a decrease in the quality of life, poor health outcomes, and increased costs.

* According to Rossom et al., (2018), 60% of nonadherence to antidepressants was higher in minority groups, and they are less likely to refill their antidepressants.

* According to report by Rossom (2018), 60% of patients discontinue antidepressants use within three months.

* Depression in adult patients cannot be cured but managed with therapy and antidepressants to cope with this diagnosis's symptoms, reduce the frequency of exacerbation, and improve patient’s overall quality of life.

* Appropriate therapeutic support and pharmacological interventions are essential to establish the management of depression.

* Untreated depression can result in a myriad of mental health conditions and is characterized by worsening symptoms associated with decreased well-being and life satisfaction into adulthood

Impact of Antidepressant nonadherence

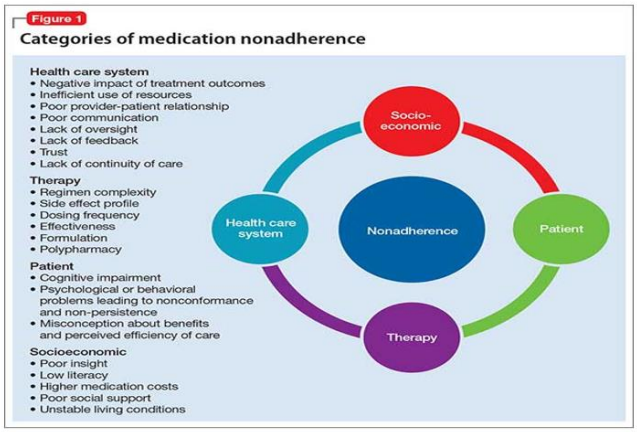

TABLE 1. RISKS ASSOCIATED WITH ANTIDEPRESSANT NONADHERENCE

Avoidable disability
Increased comorbidity-related mortality
Increased personal and societal financial burden
Medication discontinuation
Poor quality of life
Relapse
Suicide attempts or suicide
Treatment dropout

Adapted from references 3-9.

Protocol Summary

Evaluate risk of Nonadherence

Evaluate risk of harm to self & others

Evaluate use of drugs & alcohol

Give 4-6 weeks before concluding that an antidepressant is ineffective

If drug therapy is ineffective, consider:

- Misdiagnosis
- Noncompliance
- Inadequate dose

Protocol Summary

Provide education on treatment plan(s), antidepressant medications, side effects, adverse effects (serotonin syndrome/hypertensive crisis).

Continue therapy at therapeutic doses 4-9 months after patient become a symptomatic

- Educate patients on medication's mechanism of action for therapeutic effects of medications
- Encourage compliance w/medications
- Educate patients not discontinue meds abruptly
- Notify provider of any thoughts of suicide
- Patients will respond better to a structure if they were tried on it in the past and the treatment was successful.
- If the patient does not respond to one structure, try a different structure with a different mechanism of action.

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	PHQ-9, >5 and <10	Modify based on functionality & pt. preference	Continue antidepressant in medium dose range, as tolerated. Communicate with psychotherapist about progress (if applicable). Consider switch to a different antidepressant if tolerability is an issue
	PHQ-9 ≥10	Modify treatment	Schedule a return appointment for week 6. Consider switching to a different antidepressant. If no improvement at week 6, recommend switching antidepressant
WEEK 6 **Phone Call**	Recommended for all patients (Do PHQ-9)		Evaluate patient status, response to therapy, medication tolerance. If PHQ-9 question #9 (suicide) was +, conduct Suicide Screening and assessment. May be from trained physician, therapist, nurse, or care manager (If indicated return appointment scheduled prior to week 8.)

Protocol for Managing New Patients With MDD

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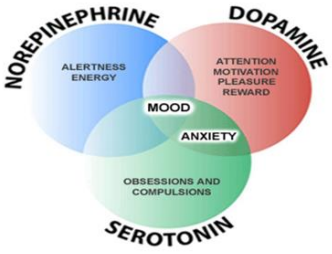

	PHQ-9 ≤ 5	None	Enter Continuation Phase
WEEK 8 ***CDP #3***	PHQ-9, >5 and <10	Modify based on functionality & pt. preference	Increase antidepressant dose to higher dose range as tolerated. Communicate with psychotherapist about progress (if applicable). Consider switching to a different antidepressant.
	PHQ-9 ≥10	Modify treatment	Increase antidepressant dose to higher range if there has been a partial response. Consider switching antidepressant.
WEEK 10 **Phone Call**	For patients who remain in the acute phase (Do PHQ-9)		Evaluate patient status, response to therapy, medication tolerance. If PHQ-9 question #9 (suicide) was +, conduct Suicide Screening and assessment. May be from trained physician, therapist, nurse, or care manager (If indicated return appointment scheduled prior to week 12.)
	PHQ-9≤ 5	None	Enter Continuation Phase
WEEK 12 **(q 4 wks)**	PHQ-9, >5 and <10	Modify based on functionality & pt. preference	Increase antidepressant to higher dose range as tolerated. Communicate w/psychotherapist about progress (if applicable). Consider psychiatric consultation.
CDP #4	PHQ-9 ≥10	Modify Treatment	Increase antidepressant dose to highest dose. Switch antidepressant (if only had 1 antidepressant trial) *Consider psychiatric consultation

*Patients who do not achieve remission after 2 adequate 6-8 week trials of antidepressants (shorter if unable to tolerate higher doses) should have a psychiatric consultation for diagnostic & management suggestions. Goal is 100% Symptom Reduction by week 12.

References

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Appendix I

Content Validity Index Table

Item	Expert 1	Expert 2	Expert 3	Mean
1	4	4	4	4.0
2	4	1	4	3.0
3	4	4	4	4.0
4	4	4	4	4.0
5	4	4	4	4.0
6	3	3	3	3.0
7	4	4	4	4.0
8	3	4	4	3.67
9	4	4	4	4.0
10	4	4	4	4.0

The procedure consists of having experts rate items on a four-point scale of relevance. Then, for each item, the item (CVI) (I-CVI) is computed as the number of experts giving a rating of 3 or 4, divided by the number of experts-the proportion in agreement about relevance.

The content validity index is calculated using the following formula:

CVR = [(E-(N/2)) / (N/2)] with E representing the number of judges who rated the item as Moderately Relevant or Highly Relevant and N is the total number of judges.

The mean total of all of the means was 3.76 indicating that all of the questions were moderately/highly relevant.

The calculation is as follows:

CVR = [(3-(3/2)) / (3/2)]

CVR = [(3-1.5) /1.5]

CVR = 1.5/1.5

Appendix J: Chart audit tool

Antidepressant Adherence Data (Data Collection Sheet)										
Provider ID	**Provider Adherence to protocol**		**Patient Id**	**Adherence to Antidepressants Yes or No**		**Follow up done Method of contact (Email, Phone, Office/Tele visit, or other)**				
	Yes	**No**		**Yes**	**No**	**Email**	**Phone**	**Office Visit**	**Tele Visit**	**Other**

Appendix K

CCNC Permission authorization

Paul Mahoney <pmahoney@communitycarenc.org> Dec 17, 2020, 2:10 PM (3 days ago)
to Valina, Danielle, Eric, me

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Paul Mahoney
Senior Vice President, Communications
Community Care of North Carolina, Inc.

From: Taiwo Abioye <tabioye@student.touro.edu>
Sent: Thursday, December 17, 2020 4:08 AM
To: CCNC Support <CCNCSupport@communitycarenc.org>
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Adult Depression Toolkit for Primary Care permission

12/15/2020
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