Increased Utilization of PHQ-9 as a Measurement Based Care to Improve Depression Treatment in the Adult Population Among Mental Health Care Providers

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In partial fulfillment of the requirements for the Doctor of Nursing Practice

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June 18, 2024

Acknowledgements

I want to thank Touro University Nevada and its DNP faculties for being the manifestation of true excellence. I salute Dr. Samantha Peckham for her steady presence and the visions she often laid out for me and for the success of this project. My gratitude goes to my project mentor Dr. Victoria Omuson who kept me deep-rooted and provided the necessary tools and skills for success.

To my Odogwu, my King and my lord, Dr. Anayo T. Ukwuani, thank you for understanding my absence, silence, tears and joys. Thank you for carrying I and our children the days I had no strength. To my gifts, my beautiful daughters who were patiently waiting for mommy and daddy to come to bed to read the same story a thousand times of little David defeating giant Goliath, I love you. The truth is, those moments soon became more for me than for them, reminding me that the mountain that is this journey will end in my victory.

To the First and the Last, the Beginning and the End, I am who I am, to my Chi, Chinanurumogu, to the God that sees me, I lay prostrate in thanksgiving to you Yahweh. Dalu.

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Abstract

Measurement-based care (MBC) has been shown to expose blind spots to clinicians treating adults diagnosed with depression. The Department of Veterans Affairs Department of Defense (VA/DoD) recommends increasing the utilization of PHQ-9 as an MBC to improve depression treatment/management in the adult population among mental health care providers. The purpose of this doctoral project is to increase the systematic administration of the PHQ-9 rating tool at regular intervals throughout treatment and use its scores to drive clinical decisions when treating depression, to increase systems quality, and to improve patient outcomes. The plan-do-study-act (PDSA) cycle was used to design educational modules for the providers on the use of the PHQ-9 tool when treating depression. The quality improvement doctoral project included a pre-test, post-test, provider education, and a Likert scale questionnaire to test providers' knowledge and confidence levels before and after the implementation of the educational intervention. A chart audit tool was utilized to measure the outcome of providers' compliance and patient PHQ-9 scores pre- and post-intervention. The project involved 4 psychiatric providers, the results revealed a 100% provider compliance and an average PHQ-9 score decrease from 20 pre-intervention, to 19 post-intervention. The aggregate data yielded objective quality improvement measures for the DNP project site. By bringing awareness to blind spots with accurate, objective information using the PHQ-9 tool, clinicians may avoid clinical inertia, change the course of treatment to avoid patient deteriorating, and discharge patients to another level of care when they show reliable recovery.

Keywords: PHQ-9, Measurement Based Care, Depression.

Increased Utilization of PHQ-9 as a Measurement-Based Care to Improve Depression Treatment in the Adult Population among Mental Health Care Providers

Major Depressive Disorder (MDD) is a common mental disorder. It entails substantial impairments of mood, pleasure, or interest in activities of daily living for a minimum of two consecutive weeks, thereby limiting the quality of life (VA/DoD, 2022). Depression can impact relationships with self, friends, family, and community (VA/DoD, 2022). Individuals most at risk for MDD are victims of abuse, stressful events, and severe losses (VA/DoD, 2022). According to the World Health Organization (WHO), men are less impacted by depression than women. Continuing, out of the 3.8 % that experience depression in the human population, 5% are adults, 4% are men 6% are women, and 5.7% are adults greater than 60 years of age (WHO, 2023).

According to Global Health Data Exchange (GHDx), as of 2019, there are 280 million depression sufferers worldwide (GHDx, 2019). MDD is 50% more prevalent in women than in men (GHDx, 2019). Globally, more than 10% of pregnant and postpartum women experience depression (Woody et al., 2017). In 2023, WHO informs the staggering statistics, which state that suicide annually claims the lives of over 700,000 people and, in individuals ages 15 to 29 years of age, is the fourth leading cause of death. While there are practical treatment guidelines for mental disorders, significant barriers to effective therapy include deficiency of knowledge in healthcare providers and mental disorder-associated social stigma (WHO, 2023).

In 2022, the Department of Veterans Affairs Department of Defense (VA/DoD) published VA/DoD Clinical Practice Guideline for The Management of Major Depressive Disorder. The VA/DoD guideline recommended screening as the primary measure in the treatment of MDD, therefore the recommendation is for mental health providers to increase screening using PHQ-9 as a MBC to track subjective and objective effectiveness of MDD therapy in the adult population (VA/DoD, 2022). Early assessment, diagnosis, planning, implementation of therapy, and outcome evaluation may enhance positive health outcomes, thereby improving the quality of life for clients who suffer from MDD (VA/DoD, 2022). The guideline recommended, especially concerning the

severity of symptoms for depression screening, is the utilization of the Patient Health Questionnaire-9 (PHQ-9) (VA/DoD, 2022).

Outcomes measurement is not routine practice in psychiatry yet, rating scales can be administered by clinicians or self-completed by clients (Hong et al., 2021). Using PHQ-9 for outcome measurement routinely in evaluating patients for functioning and quality of life may help practitioners modify the sequence of therapy in a timely and appropriate method to better meet the needs of the client (Trivedi et al., 2006). The use of validated rating scales such as PHQ-9 has shown improvement in outcomes and quality of care in psychiatry (Scott & Lewis, 2015).

The validity and reliability of the PHQ-9 are dependent on the quality of evidence retrieved from three critical elements of measurement-based care (MBC): Collect, Share, and Act (VA/DoD, 2022). Collect points to using reliable, authenticated, and clinically fitting measures. Share speaks of results being disclosed with the clients, providers, and interdisciplinary team involved in the client's care (VA/DoD, 2022). Lastly, the Act ensures the client and provider implement the results to make clinically appropriate modifications in therapy (VA/DoD, 2022). Expressions of MDD can significantly impair physiological and social health, contributing terribly to co-morbid ailments such as heart disease and obesity (WHO, 2023). The implication of increasing the utilization of PHQ-9 as an MBC to improve depression therapy in clients among providers cannot be overstated.

Project Question

When compared with the usual care at the clinic, will educational intervention using PHQ-9 as a measurement-based care (MBC) in the treatment of adult patients diagnosed with major depressive disorder (MDD), improve the efficacy of a current depression treatment regimen along with mental healthcare provider compliance with PHQ-9 MBC intervention?

Search Methods

The objective is to provide unbiased information supported by scientific/medical evidence that may enhance positive outcomes in clinical practice. The core evaluation of a text published

in literature is based on certain core questions. The need and purpose of the studies were evaluated, noting if the hypothesis and literature objective were clearly defined. Search engines with appropriate filters and national guidelines used to guide therapy were utilized and search techniques for refining the search of desired literature. Search engines such as PsycINFO, PubMed, Google Scholar, and CINAHL provide up-to-date engines for studying guidelines. The search yielded 744 articles, 700 were excluded due to abstract review, and article title. Using the inclusion criteria, forty-four articles were reviewed for eligibility, and thirty articles with different levels of evidence (LOE) supported the project topic.

Appraised literature was evaluated for validity and generalizability to specific inclusion and exclusion criteria. The criteria covered relevance to the research topic question, outcomes, peer review, and publication date. Included are search terms such as PHQ-9, managing depression in adults, MDD guidelines, MBC, and Mental Health Providers. The inclusion criteria were restricted to publications after 2013 to provide more relevant and evidence-based practice literature without publication bias affecting research. More recent articles may emphasize results that represent a larger availability of evidence.

It is important that inclusion results do not indicate a withholding of negative study results. In designing a high-quality research protocol, the inclusion criteria have key features of the target population being investigated to answer the PICO question. Further exclusion criteria included pediatrics, articles that did not implement a process for PHQ-9 and/or treatment of MDD, the literature review research was constrained to publications after 2013, and articles in English only language. Works of literature were excluded because though they met the inclusion criteria, they had additional descriptions that could interfere with both the project and outcome success. Preliminary results for the PICO question revealed zero outcomes, hence the search terms were reworded to contain search terms in themes for the project such as national guidelines for management of depression, measurement-based care for MDD, and depression treatment using PHQ-9.

Review of Study Methods

Three themes developed for the search terms include PHQ-9 impact on MDD outcomes, MBC impact on Provider outcomes, and MBC PHQ-9 rating scale used for quality improvement at the clinic level. Search terms to identify relevant projects included search terms such as PHQ-9, MDD, management of depression in adults, MDD guidelines, and depression guidelines. In the methods, the search noted if there was support for the hypothesis by effective methodology. Robust methodology depends on addressing several appraisal items such as ethics, randomization, sample size, reliability, generalizability, and limitations. The conclusions were assessed to determine whether they were supported by the existent data, the emerging themes proved relevant to this DNP project.

The literature review evaluated each article from the themes of the search terms and assessment of LOE using the American Association of Critical Care Nurses (AACCN) system (Peterson et al., 2014). The design types were randomized controlled trials (RCT), mixed methods comparative studies, experimental studies, non-experimental studies, multicentered cross-sectional studies, retrospective studies, observational studies, integrative review, systematic review of peer-reviewed research studies, retrospective cohort studies, meta-analysis, and interventional trials. The literature review included the rationale for using PHQ-9 as an MBC in the treatment of MDD. The study methods are pertinent to this DNP project as they are reliable, provide valid evidence, produce similar results of increased client safety and satisfaction in treatment outcome, and is relevant to this DNP project.

Review Synthesis

Depression predisposes its victims to a plethora of adverse health effects, such as the development of co-morbidities, suicidal ideation, and premature death. This indication results from a secondary analysis of the National Ambulatory Medical Care Survey conducted in 2012 and 2013 based on physician-patient interactions (Akincigil & Mathews, 2017). One of the leading causes of disabilities in the United States of America (USA) is MDD, therefore the

repercussion suggests a steady need to improve PHQ-9 usage not only during admission, but also throughout the treatment of MDD.

When implemented with adequate systems, PHQ-9 ensures accurate and effective treatment, and appropriate follow-up (Maurer, 2018). The PHQ-9 is an MBC validated tool with a specificity ranging from 91% to 94% (Maurer, 2018). Cronbach's α shows PHQ-9 internal reliability to be 0.89 (Molebatsi et al., 2020). The United States Preventive Task Force (USPSTF) recommends universal screening for managing depression. Despite this recommendation, low screening rates of screening are seen in community-based practices for MDD due to a lack of adequate infrastructure that ensures diagnostic follow-up (Mulvaney-Day et al., 2018). The National Quality Forum (NQF) endorsed PHQ-9 as one of the screening tools for MDD in documenting follow-up as they believe that improving behavioral health outcomes is a national priority (Schaeffer & Jolles, 2019).

As a framework to guide the treatment of MDD, measurement-based care (MBC) has transdiagnostic and transtheoretical relevance across behavioral health clinical settings, and bases clinical care on client data gathered throughout treatment (Scott & Lewis, 2015). MBC is a component of randomized clinical trials and refers to routine assessment and utilization of assessments in decision-making (Aboraya et al., 2018). The routine assessment process refers to measuring symptom severity with rating scales, hence this DNP project's elaboration on PHQ-9 as the MBC of choice in the treatment of MDD.

Impact of MBC PHQ-9

Measurement-based care (MBC) weighs clinical care on client data gathered throughout treatment and is considered a critical component of numerous EVB practices (Scott & Lewis, 2015). Implementing MBC in clinical practice sheds insight into the treatment advancements, continuing treatment aims, reducing symptom decline, and improving client-outcomes (Scott & Lewis, 2015). With an expansive scope across practice settings, MBC encompasses a transdiagnostic and transtheoretical relevance primarily when implemented as a framework to

guide treatment (Scott & Lewis, 2015).

Granted, the primary focus of MBC is on symptoms of depression, MBC PHQ-9 may be utilized to measure significant information on symptoms, functioning and fulfillment with life, inclination to change, and the treatment process such as therapy session feedback and provider-client working cooperation (Scott & Lewis, 2015).

Important Guidelines

To facilitate straightforward interpretations and use of treatment guidelines, variations in symptom severity should be categorized into categories such as response, nonresponse, remission, and recurrence (Fortney et al., 2017). Treatment guidelines for MDD, such as medication-prescribing algorithms, necessitate data about symptom severity or alterations in symptom severity at given intervals (for example, four-and six weeks post-treatment initiation) (VA/DoD, 2022). Because symptom improvements in MDD can be quantified, MBC supports the use of algorithms in the treatment decision points (Fortney et al., 2017). When evaluating a client for treatment-to-target treatment guidelines, MBC enables providers to identify which patients have achieved remission, and which patients are experiencing residual symptoms and prompts providers to deliberate strengthening the treatment plan until the patient's symptoms have fully remitted (VA/DoD, 2022).

As part of the treatment plan, the clinician provides a rationale for MBC and regularly repeats the PHQ-9. At each compendium time, the provider discusses with the client their treatment progress over time, as an informative tool when reviewing with the client (VA/DoD, 2022). The provider in collaboration with the client, engages in shared decision-making to identify outcomes and goals, discuss possible treatment interventions such as medication modification, and assess the next steps in care, which may necessitate developing a maintenance plan if PHQ-9 scores indicate clinically significant recovery (VA/DoD, 2022).

Barrier

The potential harms of MBC PHQ-9, such as, the burden of data collection and

insufficient informatics support in clinic systems, are balanced by the benefits of MBC counting improved depression symptoms and remission (Fortney et al., 2017). PHQ-9 for clinical practice requires implementing an organization system for self-monitoring and structure-based care (VA/DoD, 2022). Although PHQ-9 can be implemented as a continuous measure of severity in the practice of MBC, clinicians may not want to include PHQ-9 at a minimum in every clinical encounter. Providers will adjust to adequate monitoring of patients using MBC PHQ-9, specifically at least monthly to track progress after initiation of therapy or a change in treatment (VA/DoD, 2022).

Conclusion

When the provider is interviewing individual clients, the provider can deviate from the format wording of the PHQ-9. Paraphrasing the questions and selectively wording each question may offer upgraded severity of depression symptoms which is effective in clients with positive diagnoses of depression while mitigating appropriate treatment recommendations the client may have previously resisted (Ford et al., 2020). An advantage of measurement-based care is seen when a client's rating scale data are aggregated, this can be used for quality improvement at the clinical level, and professional development at the provider level to enlighten payers of the value of behavioral health services provided at the healthcare system level (Fortney et al., 2017).

Through secure online patient portals, PHQ-9 questionnaires can be completed electronically (Coley et al., 2020). Accreditation programs such as HEDIS include measures for completing follow-up combined with quality performance measures (Coley et al., 2020). MBC PHQ-9, when used as an outcome measure, may determine individual client's case identification, and indicates monitoring the efficacy of new treatment and care systems.

Project Aims

The aim of this DNP project is the implementation of PHQ-9, an MBC screening tool for depression. The MBC PHQ-9 protocol is a QI project to improve the management of depression to impact treatment outcomes positively. Further intentions of this DNP project include

increasing knowledge of the provider aspect of PHQ-9, increasing treatment efficacy, and improving depression symptoms in patients by appropriately implementing PHQ-9 in the treatment of depression. The QI project will increase PHQ-9 compliance to at least 95% through education, improving patient outcome satisfaction. The host facility will meet the objectives within the five-week timeframe allocated for the DNP project.

Project Objectives

1. Improve staff compliance for MBC tools rates to 95% within the five-week implementation interval by administering MBC educational programs.
2. Administer a pre-test, then measure the multidisciplinary team's knowledge of the MBC PHQ-9 after administering MBC education program within a 5-week implementation frame. Train staff with a post-test knowledge score of 90% or higher per staff member.
3. Improve PHQ-9 scores in the treatment of depression to a clinically significant change by a one point decrease in total PHQ-9 score after four weeks of starting treatment.

Implementation Framework

The plan, do, study, act (PDSA) cycles and the models for improvement are appropriate for this quality improvement (QI) DNP project initiative. The model has its roots in Japan in the 1920's (NHS, 2022). PDSA began as the Plan, Do, Check, Act (PDCA) cycle formulated by Walter Shewart (NHS, 2022). It shaped the foundational approach to leadership and organizational quality development (NHS, 2022). PDSA model, when applied to the DNP QI project, allows for learning within the allocated time interval whether the MBC PHQ-9 intervention delivers desired outcomes, and is sustainable in clinical practice.

Based on the scientific method, the PDSA cycle enables organizations to experiment with changes on a structured minor scale before implementation on a sizable scale (NHS, 2022). The PDSA cycle allows for a safe and less disruptive process for staff and patients (NHS, 2022). To implement the PDSA method, a four-stage cyclic learning approach is recommended to customize changes leading to improvement. Though the methodology of the PDSA tool was

initially for industrial utilization, it is commonly applied in healthcare quality improvement because its concepts decrease error and variation in outcomes (Christoff, 2018). When the American Academy of Pediatrics Chapter Quality Networks sponsored a QI initiative, significant improvement in healthcare outcomes resulted from various iterative PDSA cycles (Christoff, 2018). This enables stakeholders to estimate whether the proposed change will succeed and learn from failed ideas.

Major Tenets of the PDSA Cycle

Plan

The planning stage is the first step in the PDSA iterative cycle. In this stage, predictions of expected outcomes are precisely defined, and tasks are assigned to appropriate team participants (Christoff, 2018). In this stage, the QI project plan is who, what, when, and where is decided (Christoff, 2018).

Do

The developed plan is implemented in the “do” stage (Christoff, 2018). Data and results are obtained for review during the study tenet of the PDSA cycle (Millard, 2022). All implemented activities are objectively recorded that identify success, unexpected outcomes, variations in data noted, and limitations (Christoff, 2018). This tenet is reiterated as necessary until the interventions produce the intended outcomes (Christoff, 2018).

Study

After implementation of the interventions for the predetermined time, in the "study" tenet, the collected data undergoes objective analysis (Millard, 2022). This phase is imperative to pave the way for frequent necessary adjustments, hence the need to have appropriate sample size for data analysis (Millard, 2022). There is a comparison of results to predicted outcomes and those of prior performances that occur is this phase to discuss learnings (Christoff, 2018).

Act or Adjust

The last tenet of the PDSA cycle is the “act” stage. In the “act” stage, the plan is either

abandoned, adapted, or adopted based on evaluating the analyzed data in the prior stage (Christoff, 2018). In the PDSA cycle, the learning from one tenet guides the following tenets.

Application of Major Framework Tenets to the Project

Plan

Modifications aimed at successful improvement are categorized in the "plan" stage of the PDSA cycle. In this stage, members of the staff (front desk staff, medical assistants, nurses, and providers) will be educated on the current depression management guidelines for MBC, PHQ-9 in the treatment of depression, and the importance of the treatment guidelines. The team sets concise and measurable targets that are focused on problems of concern, as well as on clients and stakeholders, most especially providers. The team will reach a consensus on the PICOT question of this DNP project and develop measurable outcomes within the five-week timeline allocated for the project.

Do

The process developed during the planning tenet is tested on more minor scales (NHS, 2022). Implementation of depression management protocol using PHQ-9 at the project site will be commenced. The implementation will begin with all participating providers on their working clinic days. The implementation will start all at once. The implementation will include informative workshop sessions, the commencement of the depression treatment protocol utilizing PHQ-9, and data collection. The PDSAs will be recorded over the five weeks to capture the learning outcomes and establish the improvement over time.

Study

After implementation of the interventions over five weeks, in the "study" tenet, the collected data undergoes objective analysis. Due to small-scale implementations, appropriate adjustments can easily be made to ensure sufficient statistical analysis per sample size (NHS, 2022). During the study tenet, the team observes partially met objectives to make appropriate adjustments (Millard, 2022). This stage includes the compilation and analysis of data using

applicable statistical testing, and the dissemination of results.

Act or Adjust

The "act" tenet denotes modifications for the subsequent cycle based on what the team learned. It will determine if using MBC PHQ-9 in the treatment management of MDD will be adopted and integrated into routine practice of the DNP project site. In the case that the intervention is successful, the project site will be provided with a pre-test, post-test, the educational PowerPoint, and attestation to implement in the new provider orientation procedure. After the final intervention is implemented, the team determines whether it yielded effective outcomes. If the results of the intervention show ineffective outcomes, an adjustment to the educational programs incorporating ineffective interventions to strengthen the knowledge being provided.

Project Setting

The quality improvement DNP project site is an independent, for-profit, psychiatric mental health corporate-owned practice that covers Southern California hospitals. The site opened in 2012 and has since continued to provide care to customers in acute in-patient psychiatric hospital settings. Presently, there are four licensed psychiatrists and four licensed doctoral-prepared psychiatric mental health nurse practitioners (DNP). The health and medical records software (HER/EMR) utilized by the site is Allscripts. The independent practice operates interactive digital audio and video communication to provide tele-psychiatry services which includes preventive, diagnostic, and therapeutic care accessible to a patient population of over 3000 clients.

The clients spread across the developmental lifespan, from adolescents to geriatric patients, with the youngest client being 17 years old and the oldest client being 78 years old. There is no specific predominant ethnic or racial group the practice caters to in the greater Los Angeles County (LA County). With the largest population of any county in the United States of America, approximately 10 million residents account for nearly 27 percent of the population in

California (County of Los Angeles, n.d). 242, 668 of the LA County residents are veterans, 50.4% are female, persons 65 years and over make up 15.2% of the population, while persons under 18 years make up 20.4%, and 33.5% of the population in LA County are foreign born persons (U.S. Census Bureau, n.d.). Residents who graduated from high school make up 80% of the population, and a bachelor's degree or higher are held by 34% of LA count population (U.S. Census Bureau, n.d.).

Population of Interest

Direct population

The target population comprises of licensed doctoral-prepared psychiatric mental health nurse practitioners (DNP). These are the employees who administer depression treatments and are the primary mental health providers for clients with a primary diagnosis of depression. There are three DNPs who have a minimum of five years of experience diagnosing and treating depression in adults and have been working at the project site for a minimum of five years. Employees who do not administer depression treatments and are not primary providers for patients diagnosed with depression will be excluded from the scholarly project. Excluded from participating in the QI project are staff who do not provide direct patient care at the project site or via telepsychiatry.

Indirect population

The indirect population of interest is adult patients presently being treated by behavioral health providers on staff at the project site. The patients will benefit from implementing the QI project as it may improve the quality of psychiatric therapy they are receiving. The eligible indirect population includes participants older than 18 years of age, with a primary diagnosis of depression. Participants are fluent in spoken and written English. All patients not fluent in written and spoken English, and under 18 years old are excluded from the DNP project. Additionally, excluded are pregnant and breastfeeding clients, patients with secondary psychiatric disorder diagnoses such as post-traumatic stress disorder (PTSD), active substance abuse or addiction, and PHQ-9 score less than 10. Convenience sampling is supported based on the availability and

accessibility of participants and limited time allotted to complete the DNP QI project (Andrade, 2020).

Stakeholders

It is rare for sustainable change to operate from the top of an organizational system. Stakeholder mapping allows both the DNP project team and the implementation team to assess and display important stakeholders visually, their support for the project, and their ability to hinder the facilitation and implementation of the project (Bernstein, 2020). The project team used the power-interest 2 x 2 matrix of Mendelow, 1991, to categorize stakeholders into four domains: high-power/high-interest, high-power/low-interest, low-power/high-interest, and low-power/low-interest. Murrary-Webster and Simon (2006) third dimension, that of stakeholder attitude, furthers stakeholders' support into context.

Providers at the project site will need to collaborate to assert the MBC for the hypothesized change to be sustainable in the long term. There are barriers when it comes to introducing new ideas to bridge the knowledge gap, and barriers may also cause apprehension with the stakeholders such as the site administrator and staff coordinator. Nonetheless workgroups consisting of clinical stakeholders who are directly managing patients diagnosed with depression will aid in filling in the knowledge gaps in depression management.

The project site administrator, who has high-interest and high-power on Mendelow's matrix, is the most important stakeholder and is imperative to onsite and telepsychiatry clinic operations. The administrator makes the last decisions on operations, including technological and financial operations, and ensures that all relevant providers partake in the standard staff annual competency, which was exchanged for this DNP project. Project site providers on staff are facilitated by the staff coordinator who also has a high-interest/high-power. He is one of the providers on staff appointed to coordinate other providers in the project site directly regarding the DNP project. The staff coordinator is tasked with disseminating necessary information to other stakeholders, including the Project Mentor (PM), who is accountable for the DNP project, and the

DNP student investigator. The staff coordinator is also responsible for compliance within the project site and directly supervises the education sessions before, during, and after project implementation. The Project Instructor (PI) is categorized as high-interest/high-power. The PM and DNP student investigators are categorized as high-interest/low-power.

Important stakeholders with low-interest/high-power in the project are the patient participants, the indirect population of interest. Local hospitals in contract with the project site are also categorized as low-interest/high-power. The DNP project is tailored to the providers, however, for the implementation to be successful, it must be carried out carefully on clients with the diagnosis of interest. As the DNP project team continues collaboration with the project site and its stakeholders, expert consultations are ongoing and continue to evolve with the proliferation of the DNP project. For each quadrant of the power/interest grid, there is a need for a unique stakeholder-management strategy. Understanding the stakeholders' attitudes towards the scholarly project enabled the primary investigator to prioritize time and energy efficiency to ensure long-term success and sustainability, and garner further support. The quality improvement doctoral project was presented to the site leaders at the preliminary meetings with the administrator and staff coordinator. The independent practice granted consent to execute the QI doctoral project at the project site and assured no affiliation agreement is required between the project site and university (Appendix A).

Interventions

The DNP project does not require an Institutional Review Board (IRB) approval as it is not using human subjects in a research setting. Six participants who are advanced practice RNs participated in the project. Participation was voluntary, with each participant fully informed of their prerogative to withdraw from the DNP project at any time. Upon an investigative gap analysis, the noted gaps in the project site's current depression treatment strategies were identified and integrated into developing the education for quality improvement. The allotted timeframe for the implementation of interventions is five weeks.

The depression management protocol includes educating the participants, administering a pre/post-test for knowledge evaluation, execution of the MBC treatment protocol, and data collection. The project team agreed on the content of the educational presentation after reviewing, and analyzing the literature, and identifying the areas that needed education. The team validated the outline of the developed educational interventions. Expert opinions were provided, along with recommendations in determining the feasibility, applicability, and relevance of the provider's education modules in addressing the practice gaps in the treatment of depression using an MBC at the clinic. Implementation will occur from the last week of February to the first week of April 2024.

Pre-Implementation

The project lead created an educational program as follows: Pre/Post-test (Appendix B1), content validity index (CVI) (Appendix B2), Confidence/Knowledge Level Provider Questionnaire (Appendix C), PowerPoint Presentation (Appendix D), Measurement-Based Care PHQ-9 (Appendix E), Chart Audit Tool (Appendix F), Educational Modules (Appendix G), DNP PDSA framework (Appendix H), and the DNP project timeline (Appendix I).

Week One

There will be two educational workshop days to educate and prepare the providers for the five weeks of implementation. All education will be completed in week one, with each session being 45 to 60 minutes in duration. The last 10 to 15 minutes of the allotted time will be for answering providers' questions. Education modules (Appendix H) will be provided to the providers participating in the project through hand-outs during the training workshops. The Likert scale, a confidence/knowledge level provider questionnaire (Appendix C) developed by the project lead and a pre/post-test will be administered on the same day as the workshops. The pre-test will be administered before educational modules, the post-tests will be administered after the educational modules. A summary of the education provided will be documented. The results of the Likert scale question will be documented. The results of the pre/post-test will be documented.

Week Two through Four

The Implementation of the QI project begins. The project lead will obtain the percentage of compliance and the PHQ-9 scores of individual patients being treated for depression that meet the inclusion criteria before the start of implementation. The project lead will be available on-site and on-call, to monitor, and provide support to providers and project team to ensure unbiased outcome. The results of the patient PHQ-9 scores pre-implementation will be entered into a codebook, and a summary of week two will be documented. The project lead will obtain the PHQ-9 scores of participants and weekly provider compliance. A chart audit will document the PHQ-9 scores and weekly compliance rates (Appendix I). The weekly results will be entered into the codebook. A summary of the results in each week will be documented.

Week Five

During the final week of implementation, the project lead will execute the final data collection. The project lead will provide the chart audit (Appendix F), and the results will be evaluated and crosschecked for accuracy in the PHQ-9 scores of participants. The results will be entered into the codebook. A descriptive analysis will be performed for the confidence/knowledge level provider questionnaire, and the pre/post-test. A statistical analysis will be performed by running a chi-square test for provider compliance, a paired t-test for the pre and post-test, and the client's PHQ-9 scores pre and post-intervention. A summary of week five will be documented. The codebook will be updated and published in Appendix H. The Statistical Package for Social Sciences (SPSS) output will be provided in Appendix I.

Education Workshops

The educational workshop is an intervention whereby handouts developed from a PowerPoint will be distributed to providers at the beginning of each workshop. From the PowerPoint and additional learning materials distributed to the providers, a pre and post-test was developed to meet the objectives of the DNP project. The educational workshop will be administered on-site for two days during the provider huddles during the first week of

implementation from the last week in February to the first week in March. The PowerPoint presentation was created for the project lead to build rapport with the providers, thereby improving provider compliance. The PowerPoint will be presented after administration of the pre-test, and the Likert scale questionnaire. The Likert scale questions have been developed and will be distributed to test the confidence level of the providers before and after educational intervention. Additionally, a list of test questions, along with their corresponding answers and rationales, has been constructed and submitted for the content validity index (CVI) (Appendix B2). The pre-educational confidence/knowledge level provider questionnaire is the same as the post-educational provider questionnaire. The pre and post-test questions submitted for CVI are identical.

Project Planning Team

The project planning team includes the project lead, project mentor, staff coordinator, clinic supervisor, and compliance officer. The compliance officer and clinic supervisor are responsible for approving the project tools. The staff coordinator gathers the questionnaires, and the weekly chart audits. The staff coordinator and clinic supervisor will approve the project execution dates. The project lead performs a gap analysis, designs, and gathers tools for implementation, executes the project activities, and analyzes the results.

Resources

The resources needed for the project will be printed on the project site, including tests, questionnaires, and handouts. There is no compensation required for the execution of the project since additional hours are not necessary for the tasks; the interventions are integrated into the treatment prescriptions. Nonetheless, the project lead will provide refreshments to encourage relaxation and a positive attitude in executing the tasks.

Timeline

The educational workshops were held on February 29, and March 2, 2024, at 0700 and 1130. The project lead has notified the participating providers of the project's starting date and

weekly DNP project activities (Appendix I). With the proliferation of the project, daily reminders will be sent to the participating providers, and data gathering, and analysis will be ongoing from February 28 through April 1, 2024. A paired t-test will be done on the pre-test and post-test results. A chi-square test will be performed on the pre-intervention and post-intervention of the PHQ-9 tool in the treatment of depression.

Tools

Depression Screening Protocol

The PHQ-9 is an evidence-based practice guideline for depression management, developed by Spitzer et al. in 1999, with an educational grant from Pfizer, Inc. No permission is required to reproduce, translate, display, or distribute the tool (APA, 2020). With the PHQ-9 tool, the project team can work together with the clinic providers to improve assessment of depression treatment response and outcomes. The project does not recommend treatment to the provider, ultimately, treatment decision is the sole responsibility of the provider.

The nine-items PHQ-9 tool, for the purpose of this project, will be used to monitor, and measure the severity depression symptoms to support therapy maintenance, or a change in treatment management (Badr et al., 2016; Kroenke et al., 2010). After scoring the patient using the PHQ-9, the provider along with the patient participation, will determine the appropriate treatment plan. The instrument will assist the provider in identifying treatment goals, determining severity of symptoms, and directing clinical interventions when appropriate (VA/DoD, 2022). When considering depression treatment, the project lead will guide the providers to use clinical interviewing skills to determine whether the depressive symptoms are causing clinically significant distress or impairment contrary to the desired outcome of therapy.

Educational Presentation

An educational PowerPoint created by the project lead, will be presented accompanied with handouts derived from the PowerPoint will be distributed during the clinic staff meeting which will be administered for 30 to 45 minutes (Appendix D). The PowerPoint will be validated

through expert consultation. The workshop will consist of PowerPoint presentation, discussion on the implementation of PHQ-9 tool, and deliberations on compliance with the PHQ-9 tool in depression management to significantly improve treatment outcome and prevent suicide and debilitating effects of depression.

Test Blueprint and Test

The project team lead designed the test blueprint, pre-test, and post-test. The test item blueprint is geared towards the pre and post-provider knowledge assessment. The goal is to ensure that the educational intervention was effective and meets the DNP project objectives. The tests will be validated through expert consultation via CVI. Both tests are identical and tests for knowledge and confidence level in administering PHQ-9 during depression treatment/management. The pre/post Likert five-point scale (Appendix C) has six questions with four objective questions. The Likert scale questionnaire developed by the project lead does not need a CVI rating. The questionnaire provides the project lead an opportunity to quantify their perception of the providers familiarity and attitude toward using PHQ-9 in treatment of depression pre and post educational intervention. Participants were encouraged to express their confidence and knowledge level when using the PHQ-9. Five minutes will be allotted to the providers to complete the test prior to presentations, another five minutes will be allotted to administer the test after the educational workshop to determine readiness and attitude of the providers.

Chart Audit Tool

By evaluating the outcomes of the indirect population of interest, chart audits are an effective tool in identifying areas of improvement and commendations (Allozini et al., 2019). The chart audit tool developed by the project lead includes the participant’s age, completion of PHQ-9 with a yes or no response, the participant's PHQ-9 score, and treatment intervention with a yes or no response (Appendix F). The tool will be validated through expert consultation. The chart audit tool will help the project team to store and organize collected data, and follow-up appointments

post-diagnosis.

Statistical Analysis

The statistical package for social sciences (SPSS) software will be utilized to run the results of the Likert scale questionnaires, and the pre/post-tests results. SPSS will also be used to show the output of the PHQ-9 scores of patients before and after implementation of QI measures. The team lead purchased the IBM SPSS Statistics version 29 software. Weekly data collection will be entered into an Excel spreadsheet, data will be transferred into SPSS software for output analysis.

Plan for Data Collection

To maintain the integrity of this DNP project, the professional data of the direct population, and the health and demographic of the indirect populations data, the Health Insurance Portability and Accountability Act (HIPAA) guidelines will be upheld. The DNP project aims and objectives will be disclosed to the participants, after that, the participants will sign consent to participate in the QI project. The data collection of this DNP project consists of administering a Likert Scale questionnaire, and pre- and post-tests before and after the educational interventions. Additionally, protocol compliance will be monitored and measured through a chart audit. The collected data will evaluate the DNP projects' clinical objectives. All tests and questionnaire results will be entered into the codebook before the papers are handed to the coordinator. The data collection will be kept confidential, providers will be assigned a number instead of name identifiers. The numbering of the providers is to track and maintain identical tests without breach of confidentiality. The coordinator, PI, and PM will cross-check the data entered into the codebook for accuracy daily.

Pre and Post-tests

The pre-tests and post-tests will be administered on paper and kept confidential in a locked drawer by the staff coordinator before and after the educational session. The questionnaire will be administered before and after the educational session to gauge the modules' impact and

determine the need for additional modules. The anticipated outcomes of the tests are for the participants to meet the clinical objectives of increased knowledge on the use of the PHQ-9 tool in the treatment of depression and improved PHQ-9 scores in the treatment of depression to a clinically significant change after four weeks of starting treatment. Pre-test results and post-test results will be evaluated to determine the alliance between quality improvement objectives and improved outcomes. Data gathered from the pre-and-post-tests will be in the custody of the staff coordinator, and in the PI's password-protected computer.

PHQ-9 Scores

The PHQ-9 scores will be evaluated to address the third QI objective: Improve PHQ-9 scores in treatment of depression to a clinically significant change after four weeks of starting treatment. The MBC reports will be downloaded onto an Excel spreadsheet by the PI for continual analysis and cross-referencing. The PHQ-9 reports from the first week of implementation will be compared to week four which is the final week of MBC intervention implementation. The PHQ-9 scores will be accessed and recorded weekly from the EHR by the PI for four consecutive weeks post-education modules. The accessed and recorded data will not include patient identifiers or patient demographic information. Data gathered from the PHQ-9 scores will be in the custody of the staff coordinator, and in the PI's password-protected computer.

Likert Scale Questionnaires

The data gathered using the Likert Scale questionnaires will quantify the participants' perception of their knowledge and confidence in utilizing the PHQ-9 tool in depression management before and after the educational intervention. The anticipated outcome of the questionnaire is for the participants to meet the clinical objective of increased knowledge and confidence in the use of the PHQ-9 tool in the treatment of depression. The Likert Scale, after analysis and categorization, will also be in the custody of the staff coordinator, and in the PI's password-protected computer.

Provider Compliancy

The anticipated outcome of the chart audit tool is for the participants to meet the clinical objective of improved provider compliance in utilizing MBC in depression management. A chart audit will help assess provider compliance and MBC PHQ-9 implementation outcomes. Providers will complete the chart audit weekly to determine the consistent adherence to the project implementation processes. Only patients with initial and follow-up encounters during the first week of implementation will be audited. The identified participating provider will separate the patient charts. HIPAA will be maintained during each audit to prevent breach of confidentiality and eliminate risk to patient and provider.

Ethics/IRB Process

Regarding compliance with ethics, direct and indirect participant identifiers will be kept confidential on the pre/post-tests, Likert Scale, and chart audits. The project site has determined that this doctoral project is a quality improvement project. Therefore, IRB approval is not required. No active recruitment is necessary due to the site's quality improvement measures and compliance processes. These processes require providers to participate in quality improvement measures to integrate up-to-date evidence-based practice into healthcare clinical practice. There are no identified risks to the participants. Although monetary compensation will not be provided to the participants, the project's benefits are increased knowledge and confidence in utilizing PHQ-9 in the treatment of depression. Touro University Nevada (TUN) and the project team have determined that this doctoral project is a quality improvement project; therefore, IRB approval is not required. Additionally, TUN required the PI to complete the mandatory CITI training as a requisite for the completion of the quality improvement doctoral project. The staff coordinator and quality improvement personnel will observe the providers' and patients' participation throughout the process.

Plan for Data Analysis

The aim for the DNP project is to design, implement, and evaluate an educational module

for behavioral health providers regarding the use of the MBC PHQ-9 tool for the treatment of depression in an outpatient clinic setting. A quantitative method was used to analyze all data and present the results. The pre/post-tests will be utilized to measure the outcome of the educational interventions. The significance of the project sample size is dependent on the number of indirect population participants initiated for the treatment of depression by the direct population participants. A confidence level of 95% (CI of 0.05) will be used. A statistician will not be used for data analysis, but the PI will use the IBM SPSS software to generate statistical data for pre/post-tests and the Likert Scale questionnaire. The data imputed into the IBM SPSS to generate statistical data for analysis will be derived from the Excel codebook. Data will be analyzed using descriptive statistics, paired t-tests, and chi-squared tests.

Paired t-tests are generated when comparing identical groups (Pallant, 2020). The graph of the paired t-test will show the trends before and after educational interventions. The paired t-test will be used to compare the PHQ-9 score before and after the educational intervention. The same subjects will be tested at two different times to determine if the means of two variables (pre-tests & post-tests) are statistically different or significant. Paired t-tests will prove the assumption that the PHQ-9 tool when used in treatment of depression, will better quantify, and improve outcomes on the indirect population of the DNP project.

Chi-squared tests are deployed when there is evidence that the sample is random, and the variables are categorical in nature, hence the chi-squared test will look at provider compliance (Pallant, 2020). The assumption is that the data is not in percentages, instead, the data is numerical with one value per sample (Pallant, 2020). The second assumption is that the direct population of the DNP project will 100% comply with the QI processes in treating patients diagnosed with depression.

Descriptive statistics will be used to report the results for the Likert Scale questionnaire. The assumption is that the confidence level of the DNP project's direct participants will improve after the educational intervention. The questionnaire is an ordinal data in numerical format,

therefore the application of descriptive statistics is appropriate (Pallant, 2020). The PI will input weekly chart audit, and other statistical tests that will display charts and graphs results for statistical testing. After completion of the QI project, a bimonthly monitoring of compliance will continue to maintain or adjust the QI measures as appropriate.

Results

The primary objective of this quality improvement project was to improve staff compliance by 95% in using the PHQ-9 tool when treating depression. A Chi-square test was used to evaluate provider compliance and compare the accuracy of the assumptions. During the statistical analysis of the chart audit used to document compliance using the Chi-square, the output SPSS output showed no measures of association when crosstabulation of Provider ID and Week 1, Week 2, Week 3, and Week 4 Compliance. It concludes that the variables that were computed are constant. Since all the providers were compliant, the PI assigned the same rating to every subject hence, the denominator becomes zero, and kappa is indeterminate (IBM Corp, 2020).

The data collected from the chart audit tool showed that the providers answered "yes/compliant" during Week 1, Week 2, Week 3, and Week 4 (Appendix I) of implementation. The PI can report 100% compliance and note that the Chi-square test is a constant. There is no statistical significance since there is a 100% participant compliance. Measures of association were not computed for the crosstabulation, the chi-square test showed that the providers were reliable, and all of the participants were compliant in following the project protocol in using the PHQ-9 as a tool in treating depression.

Table 1

Case Processing Summary of Chi-Square test

Letter	Valid		Cases Missing		Total N	Total Percent
	N	Percent	N	Percent	N	Percent
Provider ID * Week 1 Compliance	4	100.0%	0	0.0%	4	100%
Provider ID	4	100.0%	0	0.0%	4	100%

* Week 2 Compliance						
Delta Provider ID * Week 3 Compliance	4	100.0%	0	0.0%	4	100%
Provider ID * Week 4 Compliance	4	100.0%	0	0.0%	4	100%

Note. Compliance scores of the participants show the providers were 100% in compliance with the implementation of the PHQ-9 protocol in treating depression in adults during Week1, 2, 3, and 4 of project implementation.

Table 2

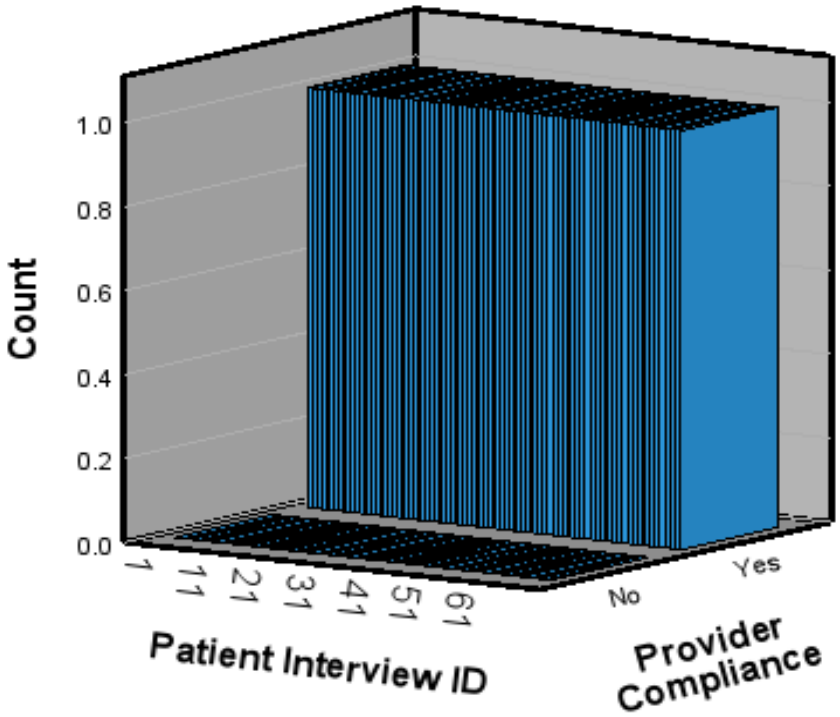
Case Processing Summary of Chi-Square test

	Valid		Cases Missing		Total	
	N	Percent	N	Percent	N	Percent
Provider Compliance x Patient Interview ID	70	98%	1	1.4%	71	100%

Note. Compliance scores of the participants show the providers were 100% in compliance with the implementation of the PHQ-9 protocol in treating depression in all 71 adult patients.

Figure 1

XGraph of Provider Compliance



The second objective of the QI project is to administer a pre-test, and then measure the provider's knowledge of the MBC PHQ-9 after administering the EVB education program in the first week of implementation. The assumption is that the post-test knowledge score will result in a 90% or higher per provider. A Paired sample t-test was used for the statistical analysis of the pre-test and post-test, and to note the resulting means and hypothesis. The pre-tests and post-tests are identical and were given to the same providers. All assumptions were met with the post-tests score showing a100% score by all providers. In the table label Paired Samples Test, the probability (p) value is less than .05; hence, the conclusion is that there is a significant difference between two scores of tests.

In the statistical output, the probability value is less than .001, which is substantially smaller than the specified alpha value of .05. A paired-sample t-test was conducted to evaluate the impact of the intervention on providers' scores in the knowledge of the MBC PHQ-9 scores at

Pre-Test and Post-Test. There was a statistically significant increase in test scores from the Pre-Test (M = 7.75, SD = .957) to the Post-Test (M = 10.00, SD = .000), t (3) = -4.70, p .018 (two-tailed). The mean increase in test scores was -2.25 with a 95% confidence interval ranging from -3.77 to -.72. The eta squared statistic (.88) indicated a large effect size. In calculating the effect size for the paired-sample t-test for the Pre-Test and Post-Test, the PI was able to calculate and interpret eta squared by hand: Cohen's d .2=small effect, .5=medium effect, and .8=large effect (Pallant, 2020). The project team concluded that there was a significant difference in the knowledge of the MBC PHQ-9 at pre-test and the post-test.

Table 3

Paired Sample Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre-test	7.75	4	.957	.479
	Post-test	10.00	4	.000	.000

Table 4

Paired Differences

		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2 tailed)
					Lower	Upper			
Pair 1	Pre-test-Post-test	-2.250	.957	0479	-3.773	-.727	-4.700	3	.018

The final objective aimed to improve PHQ-9 scores in the treatment of depression to a clinically significant change after four weeks of starting treatment and QI project implementation. To conclude the hypothesis of the PHQ-9 scores of the indirect population, the PI took note of the t value (9.492) and the degrees of freedom (df=69) and noted that the Mean difference in the two scores was 1.2, with a 95 per cent confidence interval stretching from a Lower bound of 0.94 to an Upper bound of 1.45. The project team concluded that there is a significant difference in the PHQ-9 score of the indirect project population at pre-intervention PHQ-9 Score and post-

intervention PHQ-9 Score. The mean for PHQ-9 post-intervention is lower than the mean for PHQ-9 score pre-intervention, the PHQ-9 scores appear to decrease from pre-intervention to post-intervention. The PI rejects the null hypothesis because there is a statistically significant difference between the variable pre-intervention PHQ-9 Score and the variable post-intervention PHQ-9 Score. The results showed a significant improvement in the providers' knowledge of using the PHQ-9 tool in treating depression after implementation of the education modules.

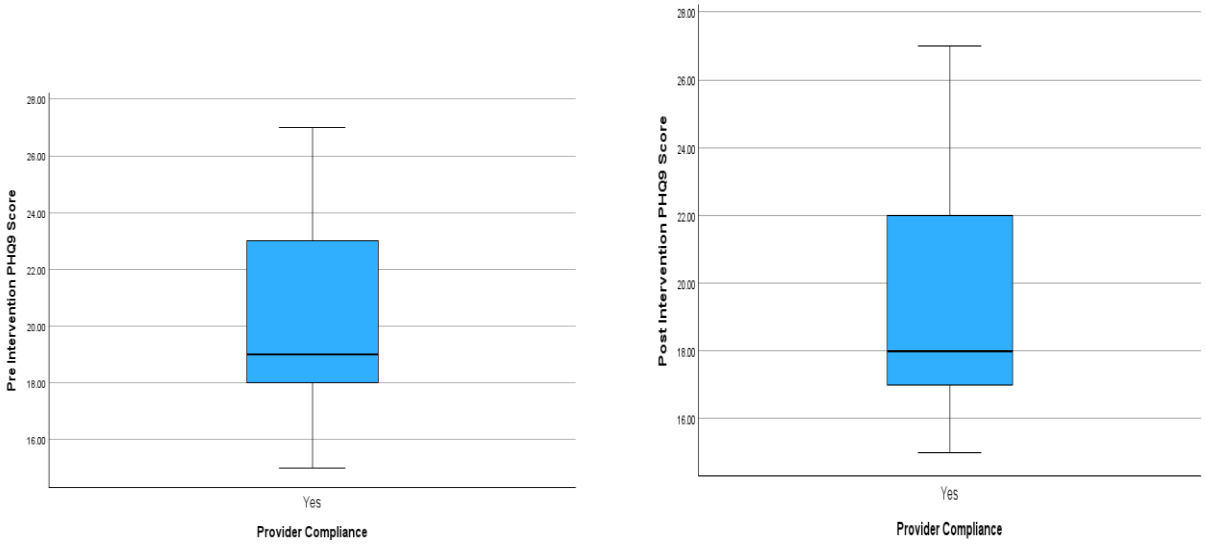
Table 5

Paired Sample Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre-intervention PHQ-9 Score	20.3000	70	3.55638	.42507
	Post-intervention PHQ-9 Score	19.1000	70	3.40141	.40655

Figure 2

Box plots of participants' PHQ-9 scores, pre-and post-intervention



Descriptive analysis was used to report the Likert scale questionnaire, which measured the confidence level of the provider's pre- and post-educational intervention. The descriptive statistics for the mean, standard deviation, and N are provided in the output box. The PI assessed that the data was comprehensive and that each group had the correct number of providers. Given the scale, the mean value is calculated correctly. In Figure 3, it is evident that the lowest mean confidence score was before the education intervention and the highest in Figure 4, the post-intervention Provider Likert Scale (after the education modules were completed) with all the providers feeling 100% confidence in their ability to use the PHQ-9 tool to quantify the effectiveness of the treatment they are prescribing patients who are being treated for depression. The percentage change in the pre/post-intervention Likert Scale questionnaire scores were computed using the formula [change in % = (new mean - old mean) ÷ old mean × 100] (Pallant, 2020). There was an increase of 6.87 in the mean scores of the participants, therefore the intervention was significantly successful in increasing the provider's confidence levels after the educational presentation.

Figure 3

Histogram for participants' Likert scores, pre-intervention.

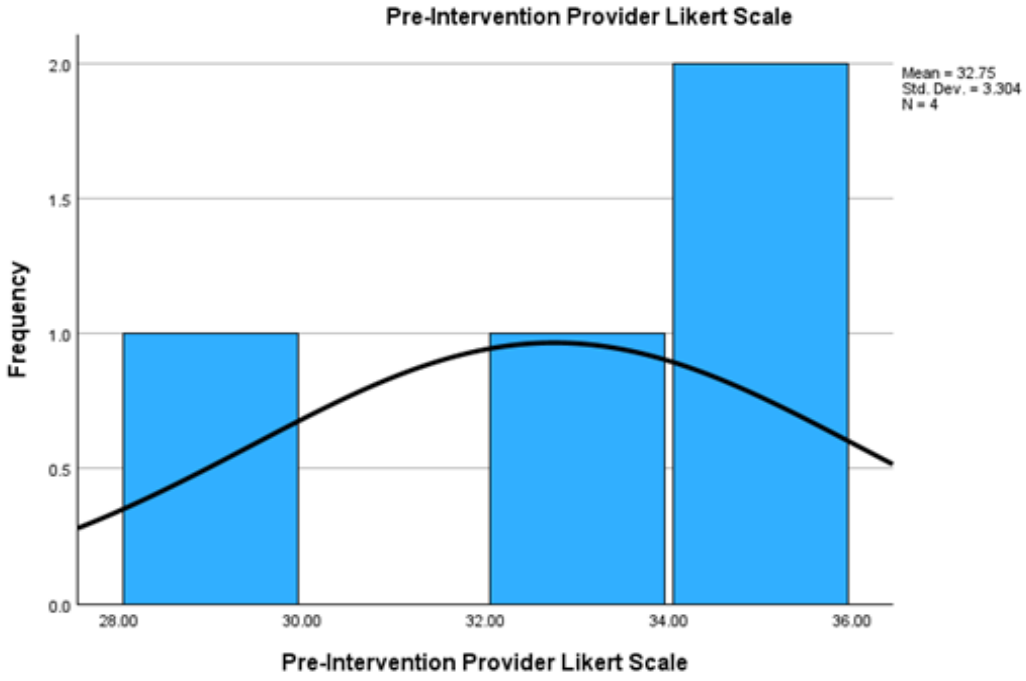
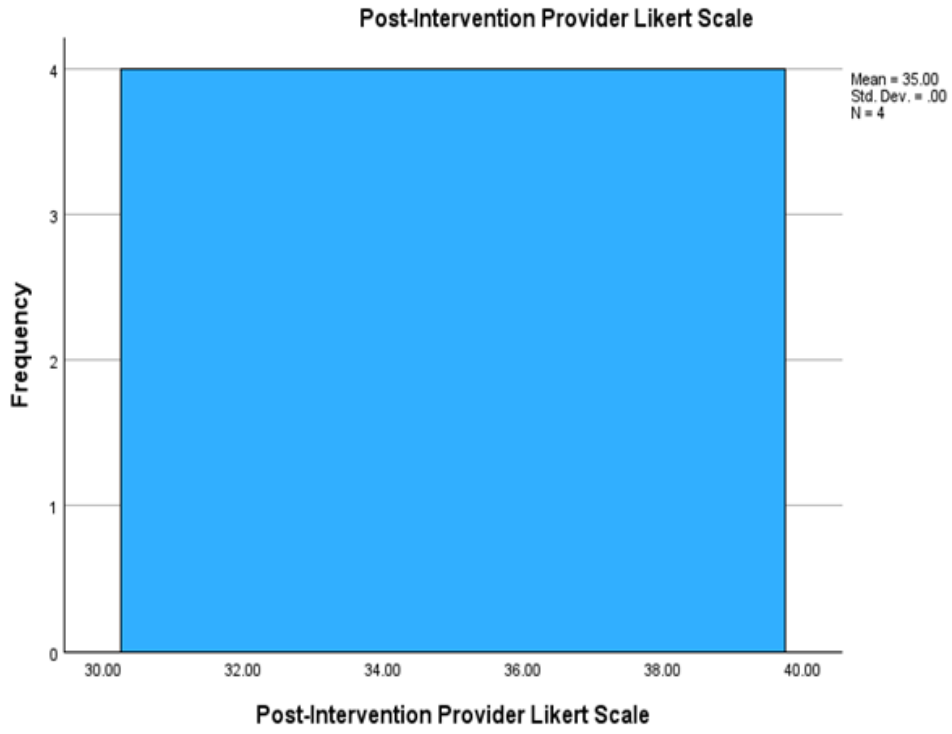


Figure 4

Histogram for participants' Likert scores, pre-intervention.



Summary

Strengths

Evidence included in the national guidelines for using PHQ-9 as an MBC in treating depression provided a wide range of educational materials to adopt and utilize in the educational implementation in Week 1. The project team showed extreme support and enthusiasm for the potential of the QI project and its continued future implementation after seeing the evidence in the data outputs. Three content experts reviewed the test blueprint for validity ensuring evidence and relevance of the test materials. Additionally, the SPSS analysis tests for this QI project were appropriate and produced substantially satisfactory results. The overall outcomes of the analysis revealed the strength of the PHQ-9 tool in determining the trend of depression treatment.

Weaknesses

When the PI met with the project team, the project number of providers participating in the DNP project was 7. This is because of time versus patient load. During the initial meeting with the providers and upper-level management of the project site, three providers presented a convincing concern that performing a PHQ-9 during treatment adequately will lengthen their encounter time with the patients and cause them to have less time to have other patient encounters. A new provider who was still oriented to the site withdrew from the project as it would have an effect on the provider's financial capacity. If the normal patient distribution is 30 to 40 per day, the patient load will reduce to 25 to 30 per day. An unforeseen development was implemented when stakeholders barred the participation of indirect new admissions participants after week 1 implementation.

Interpretation

By effective administration of the educational programs, the primary objective to have the providers use the MBC tools at a rate of 95% was exceeded. The evidence of 100% compliance met objective one aim. This can be attributed to succinct and informative educational training. No additional meetings were held during the project implementation weeks 2, 3, and 4 due to a unanimous agreement that the week 1 training was sufficient. Regarding cost savings to providers and high-interest stakeholders, project meetings were held during working hours. Hence, no overtime was required from the providers.

Objective two was to train staff with a post-test knowledge score of 90% or higher per participating provider. The objective was met by the evidence of a significant increase in the scores from pre-test to post-test noted with 100%. There was also a significant increase in the scores from the LIKERT scale questionnaire. After the educational workshops, all participating providers scored 100% on the LIKERT scale questionnaire. Minimal costs were associated with the project due to the use of recycled paper and password protected PI laptop.

The third objective was to improve the PHQ-9 scores of the indirect population to a clinically significant change after four weeks of starting treatment. This objective was met by the

evidence of clinically significant decrease noted in the PHQ-9 scores of the indirect population. More accurate treatment modalities were chosen due to the implementation of PHQ-9 to assess the therapeutic effect of the preferred treatment modality.

The COVID-19 pandemic precipitated a surge in the prevalence rate of depression from 3.44% in 2017, to 25% in 2021 (Bueno-Notivol et al., 2020). The numbers continue to rise with the proliferation of national and international unrest. The primary outcome of this quality improvement project was to improve the knowledge of the direct population, increase their confidence, and use PHQ-9 when managing depression and identifying the therapeutic or nontherapeutic outcomes of treatment in the clinical setting. The project received positive feedback due to its integration of evidence-based educational programs in alignment with the project site's systems and VA/DoD national guidelines for treating depression in adults using MBC. The statistically significant results in this evidence-based project contributed to improved excellence in practice among the providers, and quality patient outcomes and were reported by the site's upper-level high-interest stakeholders. In 2016, the United States of America (USA) spent nearly 233 billion dollars in attempting to combat increased global disability caused by depression as a contributing factor (Williams, Chung, & Muennig, 2017).

The evidence-based project will positively influence social change by reducing the incidence of inaccuracies in PHQ-9 scores and poorly treated depression among adult patients treated by the providers at the site thereby reducing the financial burden of depression on the economy of the project site and the USA (Williams, Chung, & Muennig, 2017). Knowing the patients' PHQ-9 score while treatment is ongoing will inform the provider on using evidence-based practice in medication management and psychotherapy referrals. Ultimately, using the PHQ-9 to track the reduction of depressive symptoms while treating depression will lead to improvement in the patient's life satisfaction (Williams & Nieuwsma, 2020).

The average results of the PHQ-9 pre-intervention was 20, and post-intervention was 19. The reduction of depressive symptoms when rated on the MBC implies that the patient was either

compliant with prescribed treatment or adhered to psychotherapy. Although the implementation period is complete, the continuation of depression treatment using the PHQ-9 as an MBC will create a social shift within the providers and present an evidence-based means of quantifying the outcomes of depression treatment which will promote the integrity, wellness, and health of the organization, clients, families, the community, and organizational partners.

Limitations

Bias

A appropriate sample size is essential for finding an accurate and reliable outcome of a study (Rajput et al., 2023). There was a small sample size of participants which is an under-coverage of the population diagnosed with depression in the nation. An under-coverage of the population affected by depression may lead to bias (Simmons, 2018). The increment in sample size may increase the accuracy of the hypothesis. Nonetheless, it may not affect a significant change after a specific sample size (Rajput et al., 2023). An additional day was added to administer the educational modules, and a further week of implementation was added to include more participants who met the inclusion criteria.

Design

The design of the doctoral project began with a pre-test and a Likert scale questionnaire provided to the providers. The pre-test was followed by a PowerPoint presentation and a handout of the PowerPoint printouts. A post-test and a Likert scale questionnaire ensued after the presentation. The pre-test and post-test were identical, and the Likert scale questionnaire given pre-and post the PowerPoint presentation were also identical. The project team, on the first day of educational delivery, decided against the use of a flowchart, which was part of the original project design. The providers, after deliberation, provided their expertise in the content and noted that it neither contributes to the project objectives nor serves as relevant material in treating depression. The flowchart was rejected; therefore, it was not included during the implementation phase.

Educational delivery occurred on two separate days, launching the implementation phase.

Data Collection

The EHR of the project site has limited reporting capability onsite, as patient data for some allied hospitals is not accessible unless the providers are on site. There needed to be interconnectivity of the EHR of all allied hospitals, further reducing the number of participants. The PHQ-9 scores and provider compliance were reported, verified, and collected weekly using the chart audit tool. The four weeks initially allotted for data collection were not sufficient to ensure consistency in using the PHQ-9 tool in treating patients with depression. An additional week of implementation was added to include more participants who met the inclusion criteria.

Data Analysis

In presenting a complete limitation of the quality improvement project, the project findings were based on the information gathered from the participants whose EHR were accessible at the project site. Additionally, there needed to be access to a statistician. There was a limitation in analyzing the provider compliance using the SPSS software due to the small sample size error identified. The sample size of the providers was not considered significant due to a small sample size and lack of variance between the two classes (compliant or non-compliant) (Rajput et al., 2023). Four providers were 100% compliant with the protocol.

Conclusion

The project aimed to increase the utilization of PHQ-9 as a measurement-based care to improve depression treatment in the adult population among mental health care providers. The objectives were to improve staff compliance with MBC tools, educate providers with a post-test knowledge score of 90% or higher, and improve the PHQ-9 scores in the treatment of depression to a clinically significant change. The statistical findings generated from the data analysis support the hypothesis with a substantial decrease in the participant's average PHQ-9 scores, the improved confidence in the providers' ability to utilize the MBC when treating depression, and improved provider's knowledge of the application of the PHQ-9 during real-time encounters with

patients.

The project's usefulness is the clinical acceptability of the accuracy of depression management using PHQ-9. The quality improvement program employs PHQ-9 into the clinical practice policy of the DNP project site for the timely identification of the severity of depressive symptoms when treating depression to facilitate treatment modalities and referrals to appropriate services. The project findings may not apply to all behavioral health facilities, nonetheless, it provides an opening for addressing the neglected scope of depression management in behavioral health care settings.

The utilization of the PHQ-9 rating tool serves as an effective tool for treating depression. The administrative stakeholders will implement the education program during new employee orientations and annually for provider compliance training modules to guarantee sustainability. The implications for the practice suggest that the providers who are still low in confidence of how to apply the PHQ-9 during treatment of depression will receive the education again, as well as providers who did not participate in the DNP project during the allotted implementation weeks. The providers who participated in the project are better informed and trained to identify and treat depressive signs in their patients objectively. There needs to be a timely follow-up compliant with the national guidelines for depression treatment that makes the intervention relevant.

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Appendix A

Affiliation Agreement Statement:

Touro University Nevada does not require affiliation agreements for DNP Practicum Experiences. However, the project/practicum site may require an affiliation agreement with Touro. Please delegate this form to an appropriate project/practice site representative for completion.
Please fill in the blanks below and check the appropriate box:

The TUN DNP student: Ukwuani, Chinua is authorized to complete practicum hours at the above listed project site.

_____ An affiliation agreement is required for completion of this practicum experience.

✓ An affiliation agreement is not required for completion of this practicum experience.

*If an affiliation agreement is required, please insert the name and contact information of the person who will coordinate the agreement:

Name of representative: Victoria Omuson

Contact Information and preferred contact method: 323-445-1098

Authorized Project Site Representative Signature: [signature]

Student Signature: [signature]

Appendix B

Pre and Post-Test

Pre-Test and Post-Test

Please circle the correct response.

Questions

1. Select the best brief description of the PHQ-9
   a. Self-administered 9-item instrument based on the nine DSM-V criteria listed under criterion A for Major Depressive Disorder.
   b. The instrument assists in identifying treatment goals, as well as guiding clinical intervention
   c. Provider-only administered instrument for diagnosing MDD
   d. A & B

2. How many items are there on the PHQ-9 ?
   a. 9
   b. 2
   c. 8
   d. 10

3. What is MBC?
   a. It entails the systematic administration of symptom rating scales.
   b. It uses the results of a scale to drive clinical decision-making.
   c. It is a contrast to alternatives like systematic data collection.
   d. A & B

4. Where and when can PHQ-9 be implemented?
   a. Beginning of session
   b. During session
   c. End of session
   d. All of the above

5. In what ways are the routine clinical utilization of the PHQ-9 improving patient safety?
   a. Measurement alerts clinician to lack of progress.
   b. Identifies potential intervention targets.
   c. Prompts changes in interventions if appropriate or can prompt stepdown in care after a patient's functioning has improved.
   d. All of the above

6. Select an example that may affect the provider's decision not to administer the PHQ-9 during each patient encounter.
   a. The provider has a 60 patient load for the day instead of the usual 45 daily patient load.
   b. The patient is running late to his/her appointment with the provider
   c. The provider clocked in 1 hour late to work today
   d. All of the above.

7. Select the best summary of the benefits of MBC to your organization
   a. Data can promote quality improvement based on best practice
   b. Quantitative measures of quality improvement
   c. Can facilitate treatment approach to MDD
   d. All of the above

8. Barriers to MBC from an organizational perspective include system norms, culture, and guidance on selecting standardized self-report measures.
   True or False

9. If client is hesitant to complete the PHQ-9, reiterated utility of repeated measures for clinical care while maintaining allegiance to MBC.
   True or False

10. You want to briefly troubleshoot what got in the way of PHQ-9 completion, the provider should maintain commitment and find reinforcers to increase buy-in.
    True or False.

Test Construction Activity

Chinua Ukwuani

Touro University Nevada

DNPV 763: DNP Practicum II

January 16, 2024

Appendix B continued

Test Construction

Purpose

Learning Objectives:

At the end of this presentation, the learner should be able to:

1. State why MBC helps protect/improve the organization.
2. State why and how the PHQ-9 can help protect patients when implemented in depression management/treatment.
3. State how to troubleshoot PHQ-9 as a MBC tool.

Population

Behavioral health providers at a acute care practice in Southern California.

Length of the Test

10 Questions

Difficulty and Discrimination Levels of Test Items

Low to moderate difficulty questions will be used. To achieve the course objectives, criterion-based grading is integrated to assess the learner (Oermann & Gaberson, 2019, Chapter 17).

Scoring Procedures to be Used

The tests are numbered to pair the pre-tests and the post-tests results. The pre-tests and the post-tests have identical questions and are numbered in an identical order. A statistical analysis of both the pre-test and the post-test will be generated from the tests.

Item Format

Multiple choice.

True or False.

Appendix B continued

Test Blueprint

Content	Level of Cognitive Skill				
	K	C	AP	AN	Total
Patient Safety: Depression Management/Treatment	3	1	1	1	6
Organization protection/improvement		1	1		2
Troubleshooting				2	2
Total					10

Questions

1. Select the best brief description of the PHQ-9
   a. Self-administered 9-item instrument based on the nine DSM-V criteria listed under criterion A for Major Depressive Disorder.
   b. The instrument assists in identifying treatment goals, as well as guiding clinical intervention
   c. Provider-only administered instrument for diagnosing MDD
   d. A & B

Answer: D Comprehension-Patient Safety

Rationale: The PHQ-9 is a self-administered 9-item instrument based on the nine DSM-V criteria listed under criterion A for Major Depressive Disorder. The instrument aids in guiding criteria based diagnosis of depressive symptoms, can assist in identifying treatment goals, determining severity of symptoms, as well as guiding clinical intervention (VISN 4 MIRECC, 2024).

2. To monitor severity over time for newly diagnosed patients or patients in current treatment for depression:
   a. Patients may complete questionnaires at baseline and during each scheduled appointment.
   b. Results may be included in patient files to assist provider in setting up a treatment goal, determining degree of response, as well as guiding treatment intervention.
   c. Add together column scores (column 1-8) to get a Sub-Total score
   d. A&B

Answer: D Knowledge-Patient Safety

Rationale: 1. Patients may complete questionnaires at baseline and at regular intervals (eg, every 2 weeks) at home and bring them in at their next appointment for scoring or they may complete the questionnaire during each scheduled appointment.

2. Add up 3s by column. For every 3: Several days = 1 More than half the days = 2 Nearly every day = 3

Appendix B continued

3. Add together column scores to get a TOTAL score.

4. Refer to the accompanying PHQ-9 Scoring Box to interpret the TOTAL score.

5. Results may be included in patient files to assist you in setting up a treatment goal, determining degree of response, as well as guiding treatment intervention. (VISN 4 MIRECC, 2024).

3. What is MBC?
   a. It entails the systematic administration of symptom rating scales.
   b. It uses the results of a scale to drive clinical decision-making.
   c. It is a contrast to alternatives like systematic data collection.
   d. A & B

Answer: D Knowledge- Patient Safety

Rationale: Measurement Based Care entails the systematic administration of symptom rating scales and uses the results to drive clinical decision making at the level of the individual patient. (Fortney et al., 2017). It is a contrast to alternatives like non-systematic data collection, outcome measures alone, intuition, and general client satisfaction (CVN, 2024).

4. Where and when can PHQ-9 be implemented?
   a. Beginning of session
   b. During session
   c. End of session
   d. All of the above

Answer: D Knowledge- Patient Safety

Rationale: The PHQ-9 can be administered in the waiting area prior to session. It can be administered in the beginning, during, or end session. It also can be administered at home prior to appointment (VISN 4 MIRECC, 2024).

5. In what ways are the routine clinical utilization of the PHQ-9 improving patient safety?
   a. Measurement alerts clinician to lack of progress.
   b. Identifies potential intervention targets.
   c. Prompts changes in interventions if appropriate or can prompt stepdown in care after a patient's functioning has improved.
   d. All of the above

Answer: D Analysis-Patient Safety

Rationale: Routinely using the PHQ-9 tool in clinic to measure longitudinal changes and track treatment progress are associated with superior client outcomes when compared to usual care. Additionally, assessments alert clinicians to lack of progress, guides treatment decisions, identifies potential intervention targets, and assists in differential diagnosis, lastly, assessments prompt changes in interventions if needed when things are not working or can prompt stepdown in care after a patient's functioning has improved (VISN 4 MIRECC, 2024).

6. Select an example that may affect the provider's decision not to administer the PHQ-9 during each patient encounter.

Appendix B continued

a. The provider has a 60 patient load for the day instead of the usual 45 daily patient load.
b. The patient is running late to his/her appointment with the provider
c. The provider clocked in 1 hour late to work today
d. All of the above.

Answer: D Application-Patient Safety

Rationale: Barriers to MBC from clinician perspective include admin burden; time, and human resources (Lewis et al., 2019). Additional burdens affecting providers include attitudes, lack of clarity on the clinical utility, and concern with how the data will be used (e.g., performance review) (Lewis et al., 2019)

7. Select the best summary of the benefits of MBC to your organization
   a. Data can promote quality improvement based on best practice
   b. Quantitative measures of quality improvement
   c. Can facilitate treatment approach to MDD
   d. All of the above

Answer: D Comprehension- Organization protection/improvement

Rationale: Benefits of MBC for organizations include aggregate data yielding practice-based evidence, data for accreditation or insurance bodies, and objective measures of quality improvement efforts (Lewis et al., 2019). MBC can facilitate a population health approach (Lewis et al., 2019).

8. Barriers to MBC from an organizational perspective include system norms, culture, and guidance on selecting standardized self-report measures.
   True or False

Answer: True Application- Organization protection/improvement

Rationale: Barriers of MBC for organizations include resources for training, guidance on selecting standardized self-report measures, staff turnover, leadership support, and organizational norms, culture, and climate (Lewis et al., 2019).

9. If client is hesitant to complete the PHQ-9, reiterate the importance of frequent PHQ-9 measures for clinical care while maintaining allegiance to MBC.
   True or False

Answer: True Analysis- Organization protection/improvement

Rationale: To improve patient buy-in when they are skeptical of measures, reiterate utility of repeated measures for clinical care; helps clinician be the best they can be, and helps client maximize progress (CVN, 2024). Clinicians should move along quickly without over-explanation and link use of current measure to client's major symptoms and treatment goals or even to in- session behaviors (CVN,2024). Address client's questions and concerns in empathetic manner, while maintaining commitment to measurement-based care (CVN, 2024).

10. The provider wants to briefly troubleshoot what got in the way of PHQ-9 completion, the provider should remain committed to the MBC and find reinforcers to increase patient buy-in that MBC helps to maximize treatment progress.
    True or False.

Appendix B continued

6

Answer: True Analysis- Organization protection/improvement

Rationale: Briefly troubleshoot what got in the way of completion by seeking to understand where the plan broke down so the provider can be sure to troubleshoot that going forward by having client schedule the 15m before appt to complete measure and sending reminders on client's phone. If the PHQ-9 is not completed in advance, the provider should maintain commitment and find reinforcers to increase buy-in, provider can remind client completing in advance means more session time focused on other interactions, connect measurement back to client's goals and reiterate that measurement helps us to maximize treatment progress (CVN, 2024).

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Content Validity Index Table

Item	Expert 1	Expert 2	Expert 3	Mean	CVR
1	4	4	4	4	2
2	4	4	4	4	2
3	4	4	4	4	2
4	4	4	4	4	2
5	4	4	4	4	2
6	4	4	4	4	2
7	4	4	4	4	2
8	4	4	4	4	2
9	3	4	4	3.75	2
10	3	4	4	3.75	2

Appendix C

Likert Scale Provider Questionnaire

Appendix B: Confidence/Knowledge Level Pre/Post-test Provider Questionnaire

The purpose of this questionnaire is to assess the confidence and knowledge level of mental health providers in the effective utilization of the Measurement Based Care tool PHQ-9 screening tool for Depression management. Please select the appropriate response to questions 1-10.

1. Indicate the number of years in behavioral health practice. [] 0-4, [] 5-9, [] 10 and above
2. Highest educational degree. [] PMHNP, [] DNP, []MD
3. Work status. [] Full time provider, [] Part time provider, [] On call provider

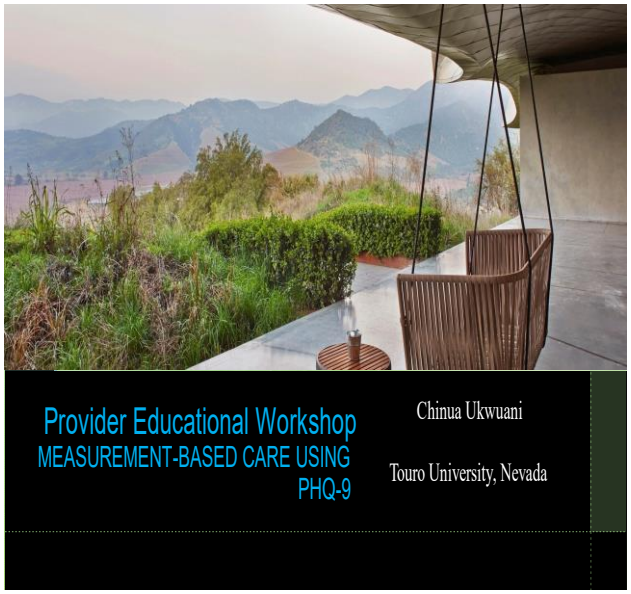
In items 4 - 10 below, respond with your appropriate level of agreement:

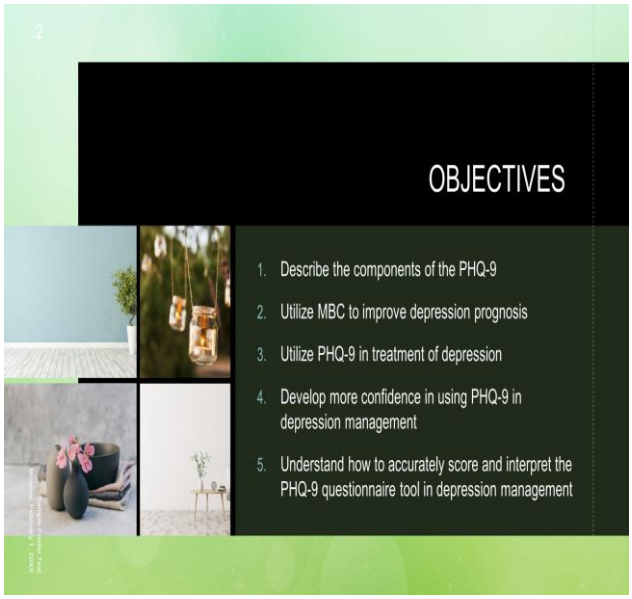
1 = Strongly Disagree (SD), 2= Disagree (D), 3= Neutral (N), 4= Agree (A), 5= Strongly Agree (SA).

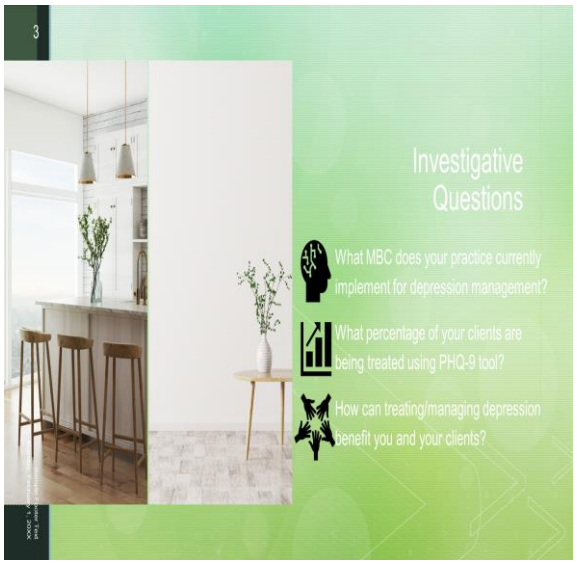
	SD 1	D 2	N 3	A 4	SA 5
4. I have adequate knowledge in using the PHQ -9 for depression screening and diagnosis.					
5. I have adequate knowledge in using the PHQ-9 for monitoring depression management.					
6. I have adequate knowledge in using the PHQ -9 tool for measuring severity of depression symptoms.					
7. I have the interest to improve my knowledge in utilizing the PHQ-9 tool.					
8. I am confident in my ability to utilize the PHQ-9 tool in screening and diagnosing depression.					
9. I am confident in my ability to utilize the PHQ-9 tool in monitoring the progress of depression management.					
10. I am confident in my ability to utilize the PHQ-9 tool for measuring the severity of depression symptoms.					
Total Score:					

Appendix D

PowerPoint Presentation







5

Introduction

- What is MBC?
- Measurement matters: It is difficult to know how well we are doing without measurements.
- Major depressive disorder (MDD) is the leading cause of disability in U.S residents 15 to 44 years old (APA, 2019)
- The nine item patient health questionnaire (PHQ-9) is quick and easy to use in treatment of MDD.

Monday, February 1, 20XX Sample Footer Text

6

Why Measurement Matters

- "Measurement Based Care entails the systematic administration of symptoms rating scales and uses the results to drive clinical decision making at the level of the individual patient" (Fortney et al., 2017).
- MBC is contrast to alternatives like intuition and outcome measure.
- MBC fits any targeted model of treatment.

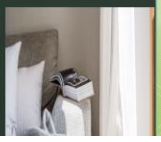
Monday, February 1, 20XX Sample Footer Text

7

Without accurate objective information:

- May assume there isn't a need to make changes or try alternative treatment approaches (clinical inertia).

- Patients may be declining and we won't act to change course before they become non-compliant and stop attending sessions.
- Patients may be showing reliable recovery and should be discharged to another level of care



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Monday, February 1, 20XX Sample Footer Text

8

How does MBC Work?




ASSESS: Clinically appropriate, evidence-based measures administered at regular intervals throughout treatment.

USE: With information collected from standardized measures, providers and patients REVIEW together and WORK COLLABORATIVELY to make informed decisions about patient's care including tailoring treatment to address patients' specific needs.

SHARE: Information gathered from standardized measures are shared not only with clients but with other providers involved in treatment to better coordinate care.

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9

Why Utilize the PHQ-9 as an MBC:

Over 20 RCTs of MBC with at least 9 review articles demonstrating improved outcomes compared to UC, including

(Lewis et al., 2019; Fortney, 2015)

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- Greater improvement in specific symptom and general outcome rating scores pre to post treatment
- Greater % of clients demonstrating clinically significant and reliable change (couples and indiv)
- Faster initial response to treatment and faster overall rate of improvement
- Fewer clients demonstrating no change or deterioration at 6 week mark

10

Benefits of PHQ-9 as an MBC

CLIENT:
1. Helps clients better understand their symptoms
2. Allows clients to more easily quantify and communicate experience
3.Encourage active involvement in treatment process

CLINICIAN:
1. Alerts provider to lack of progress
2. Directs provider to recognize vital treatment targets
3. Inform treatment decisions
4. Facilitate care coordination/collaboration

Organization:
1. Aggregate data can yield practice-based evidence, data for accreditation or insurance bodies, and objective measures of quality improvement efforts.
2. Can facilitate a population health approach.

(Lewis et al., 2019)

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11
Barriers of PHQ-9 as an MBC
CLIENT: 1. Time for completing measures 2. Worries that responses may affect clinical relationship
CLINICIAN:
1. Admin burden; time, human resources 2. Attitudes
3. Lack of clarity on the clinical utility
4. Concerns with how the data will be used (e.g., performance review).
ORGANIZATION:
1. Resources for training
2. Leadership support
3. Organizational norms, culture, and climate.
(Lewis et al., 2019)
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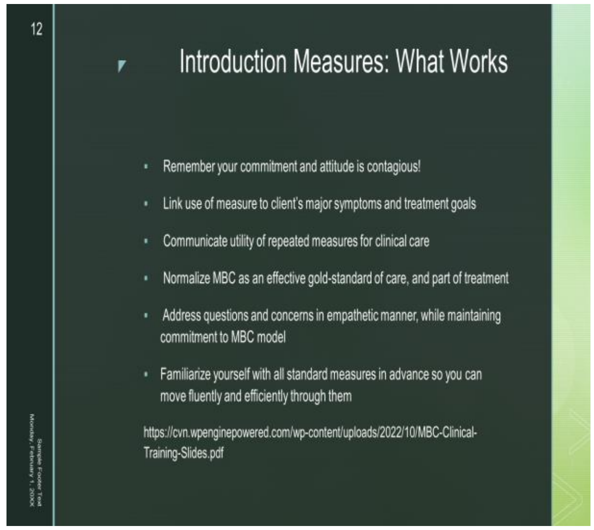
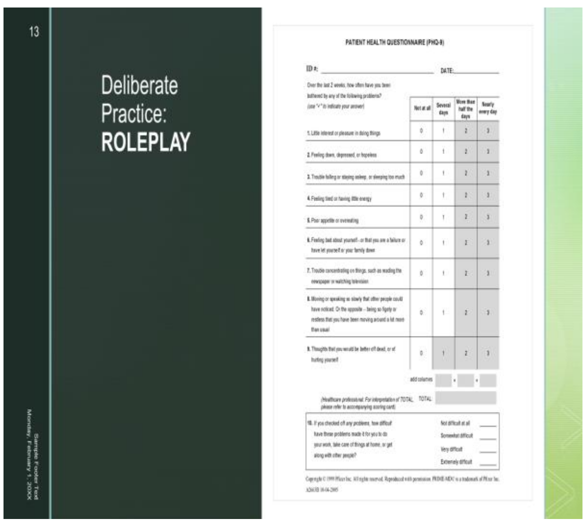
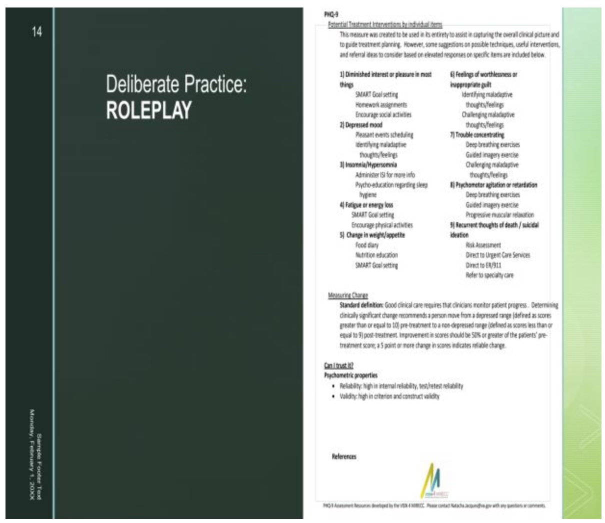

12
Introduction Measures: What Works
Remember your commitment and attitude is contagious!
Link use of measure to client's major symptoms and treatment goals
Communicate utility of repeated measures for clinical care
Normalize MBC as an effective gold-standard of care, and part of treatment
Address questions and concerns in empathetic manner, while maintaining commitment to MBC model
Familiarize yourself with all standard measures in advance so you can move fluently and efficiently through them
https://cvn.wpenginepowered.com/wp-content/uploads/2022/10/MBC-Clinical-Training-Slides.pdf


13
Deliberate Practice: ROLEPLAY
PATIENT HEALTH QUESTIONNAIRE (PHQ-9)


14
Deliberate Practice: ROLEPLAY
PHQ-9


15
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Appendix E

Patient Health Questionnaire (PHQ-9)

Name:_____ Date:_____

Over the last 2 weeks, how often have you been bothered by any of the following problems?	**Not at all**	**Several Days**	**More than half the days**	**Nearly Every day**
1. Little interest or pleasure in doing things	0	1	2	3
2. Feeling down, depressed, or hopeless	0	1	2	3
3. Trouble falling asleep or sleeping too much	0	1	2	3
4. Feeling tired or having little energy	0	1	2	3
5. Poor appetite or overeating	0	1	2	3
6. Feeling bad about yourself- or that you are a failure or have let yourself or family down	0	1	2	3
7. Trouble concentrating on things, such as reading the newspaper or watching television	0	1	2	3
8. Moving or speaking so slowly that other people could have noticed. Or the opposite-being so fidgety or restless that you have been moving around a lot more than usual	0	1	2	3
9. Thoughts that you would be better off dead, or of hurting yourself in some way	0	1	2	3

Total _____

If you checked off any problems, how difficult have these problems made it for you to do your work, take care of the things at home, or get along with other people?

Not difficult at all	Somewhat difficult	Very difficult	Extremely difficult
☐	☐	☐	☐

PHQ-9

Potential Treatment Interventions by individual items

This measure was created to be used in its entirety to assist in capturing the overall clinical picture and to guide treatment planning. However, some suggestions on possible techniques, useful interventions, and referral ideas to consider based on elevated responses on specific items are included below.

1) Diminished interest or pleasure in most things
- SMART Goal setting
- Homework assignments
- Encourage social activities

2) Depressed mood
- Pleasant events scheduling
- Identifying maladaptive thoughts/feelings

3) Insomnia/Hypersomnia
- Administer ISI for more info
- Psycho-education regarding sleep hygiene

4) Fatigue or energy loss
- SMART Goal setting
- Encourage physical activities

5) Change in weight/appetite
- Food diary
- Nutrition education
- SMART Goal setting

6) Feelings of worthlessness or inappropriate guilt
- Identifying maladaptive thoughts/feelings
- Challenging maladaptive thoughts/feelings

7) Trouble concentrating
- Deep breathing exercises
- Guided imagery exercise
- Challenging maladaptive thoughts/feelings

8) Psychomotor agitation or retardation
- Deep breathing exercises
- Guided imagery exercise
- Progressive muscular relaxation

9) Recurrent thoughts of death / suicidal ideation
- Risk Assessment
- Direct to Urgent Care Services
- Direct to ER/911
- Refer to specialty care

Measuring Change

Standard definition: Good clinical care requires that clinicians monitor patient progress . Determining clinically significant change recommends a person move from a depressed range (defined as scores greater than or equal to 10) pre-treatment to a non-depressed range (defined as scores less than or equal to 9) post-treatment. Improvement in scores should be 50% or greater of the patients' pre-treatment score; a 5 point or more change in scores indicates reliable change.

Can I trust it?

Psychometric properties

- Reliability: high in internal reliability, test/retest reliability
- Validity: high in criterion and construct validity

References

PHQ-9* Questionnaire for Depression Scoring and Interpretation Guide

For physician use only

Scoring:
Count the number (#) of boxes checked in a column. Multiply that number by the value indicated below, then add the subtotal to produce a total score. The possible range is 0-27. Use the table below to interpret the PHQ-9 score.

Not at all	(#) _____	x 0 = _____
Several days	(#) _____	x 1 = _____
More than half the days	(#) _____	x 2 = _____
Nearly every day	(#) _____	x 3 = _____

Total score: _____

Interpreting PHQ-9 Scores

Diagnosis	Total Score	For Score	Action
Minimal depression	0-4	≤ 4	The score suggests the patient may not need depression treatment
Mild depression	5-9	5 - 14	Physician uses clinical judgment about treatment, based on patient's duration of symptoms and functional impairment
Moderate depression	10-14		
Moderately severe depression	15-19	> 14	Warrants treatment for depression, using antidepressant, psychotherapy and/or a combination of treatment.
Severe depression	20-27		

* The PHQ-9 is described in more detail at the Pfizer website: http://www.phqscreeners.com/

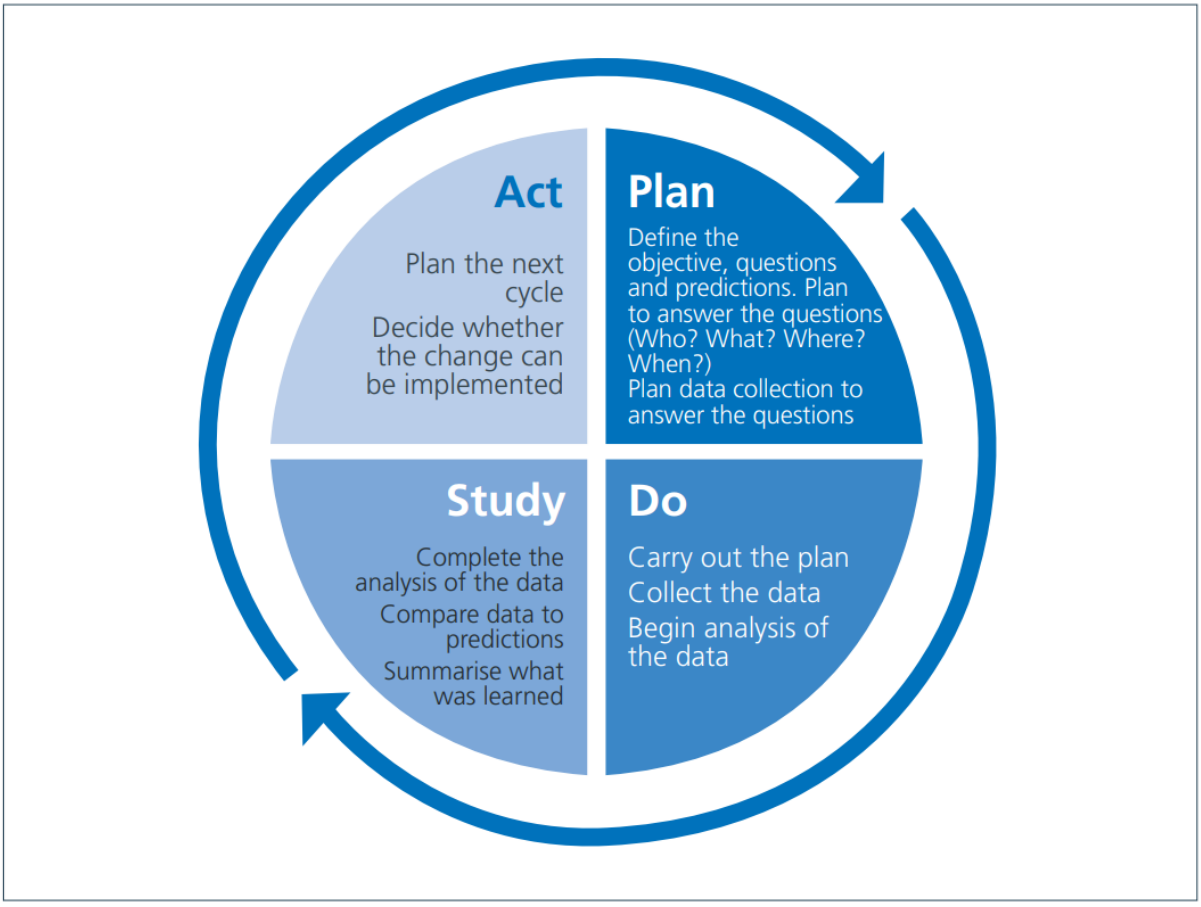
Appendix F

Chart Audit Tool

Participant Age	ICD 10 Diagnosis	PHQ-9 Completed Yes/No	PHQ-9 Score	Treatment Intervention Yes/No	Implementation Week/Encounter date

Appendix H

Graph of PDSA Framework



NHS England and NHS Improvement. (2022). Online library of quality service improvement and redesign tools. Plan, do, study, act (PDSA) cycles and the model for improvement. *NHS*. https://www.england.nhs.uk/wp-content/uploads/2022/01/qsir-pdsa-cycles-model-for-improvement.pdf

Appendix I

DNP Project Timeline

Weekly Summary for Project III	
Clearly and succinctly summarize project status. Discussion includes any updates to the project timeline. DO NOT COMPLETE NOW- SAVE FOR DNP PROJECT III	
Week 1	• Hold two educational workshop days for educating and preparing the providers for the five weeks of implementation. • Distribute education modules to the providers participating in the projects. • Provide the confidence/knowledge level provider questionnaire. • Administer the pre-test prior to educational modules, the post-tests will be administered after the educational modules. • A summary of the education provided will be documented. • The results of the Likert scale will be documented. • The results of the pre/post-test will be documented.
Week 2	• The project lead will obtain the percentage of compliance and the PHQ-9 scores of individuals patients being treated for depression that meet the inclusion criteria prior to the start of implementation. • The project lead will be available on site and on-call, to monitor, and provide support to providers and project team to ensure unbiased outcome. • The project lead will obtain the PHQ-9 scores of participants and weekly provider compliance. • The PHQ-9 scores and weekly compliance rates will be documented in a chart audit. • The results of the patient PHQ-9 scores pre implementation will be entered into a codebook. • Enter survey questionnaire and results into the codebook for statistical analysis (IBM SPSS). • Enter pre-test, and post-test results into the codebook for statistical analysis (IBM SPSS). • Run statistical tests of surveys, pre-test results, and post-test results. • First week implementation summary write-up.
Week 3	• The project lead will be available on site and on-call, to monitor, and provide support to providers and project team to ensure unbiased outcome. • The results of the patient PHQ-9 scores pre implementation will be entered into a codebook. • The project lead will obtain the PHQ-9 scores of participants and weekly provider compliance. • The PHQ-9 scores and weekly provider compliance rates will be documented in a chart audit. • Gather the weekly percentage of provider compliance of PHQ-9 and enter them into the codebook. • The weekly patient PHQ-9 scores will be entered into the codebook. • Second week implementation summary write-up.
Week 4	• The project lead will be available on site and on-call, to monitor, and provide support to providers and project team to ensure unbiased outcome. • The results of the patient PHQ-9 scores pre implementation will be entered into a codebook. • The project lead will obtain the PHQ-9 scores of participants and weekly provider compliance. • The PHQ-9 scores and weekly provider compliance rates will be documented in a chart audit.
	• Gather the weekly percentage of provider compliance of PHQ-9 and enter them into the codebook. • The weekly patient PHQ-9 scores will be entered into the codebook. • Third week implementation summary write-up.
Week 5	• The project lead will execute final data collection. • The chart audit results will be evaluated crosschecked for accuracy in PHQ-9 scores of participants. • The chart audit results will be entered into the codebook. • A descriptive analysis will be performed for the confidence/knowledge level provider questionnaire and the pre/post-test.

Appendix J

Survey Result Statistics

Table 6

Descriptive Statistics

	N	Range	Minimum	Maximum	Mean		Std. Deviation
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic
Pre-Intervention Provider Likert Scale	4	7.00	28.00	35.00	32.7500	1.65202	3.30404
Post-Intervention Provider Likert Scale	4	.00	35.00	35.00	35.0000	.00000	.00000
Provider ID	4	3	1	4	2.50	.645	1.291
Valid N (listwise)	4						

Figure 5

Histogram of pre-intervention PHQ-9 scores with provider compliance.

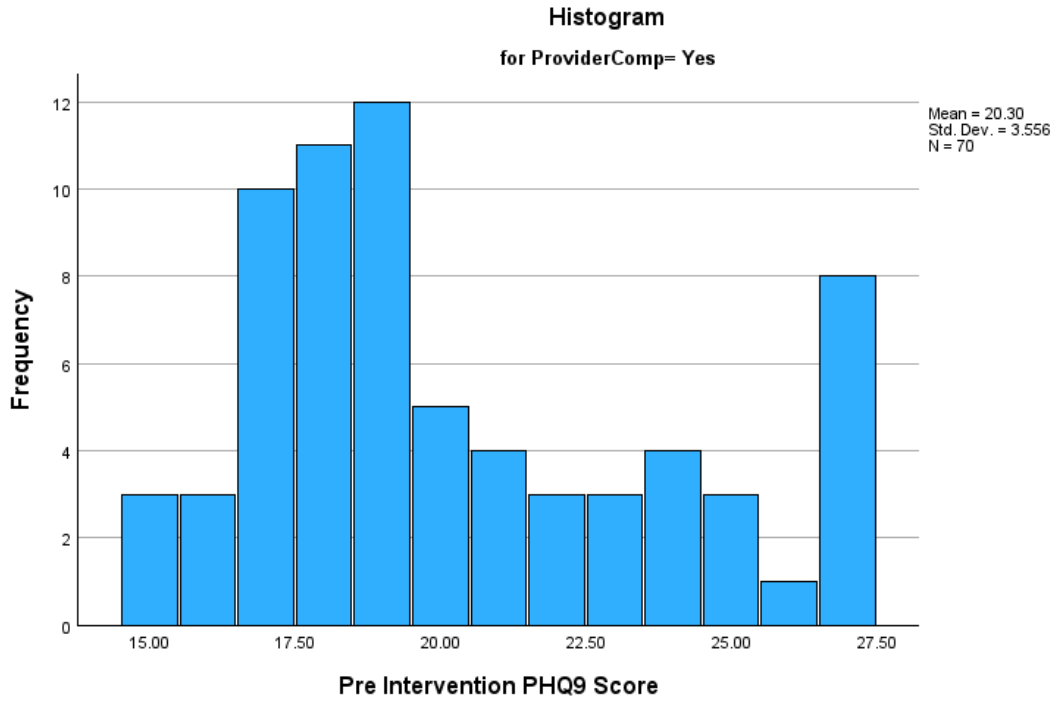
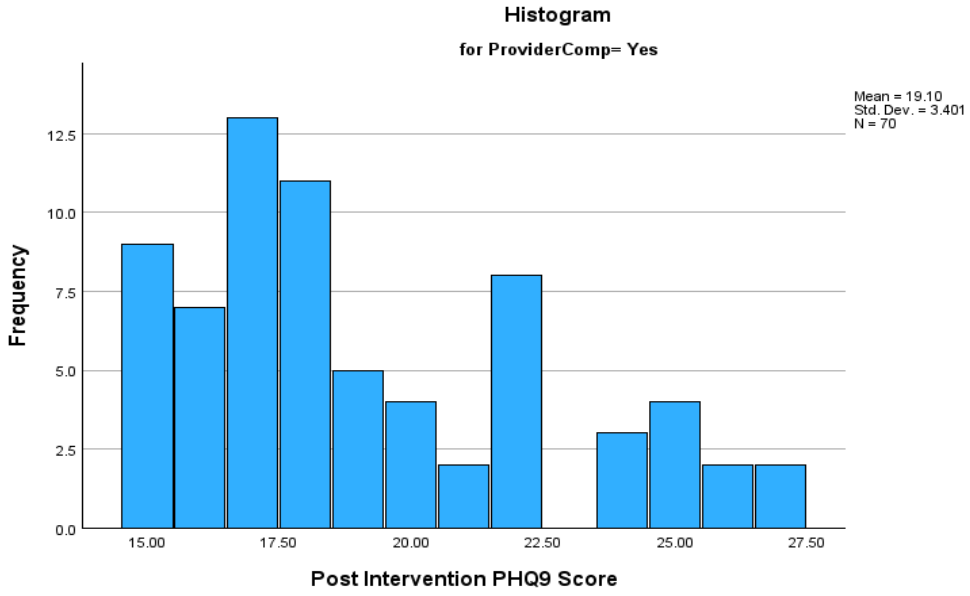


Figure 6

Histogram of post-intervention PHQ-9 scores with provider compliance.


Histogram
for ProviderComp= Yes
Mean = 19.10
Std. Dev. = 3.401
N = 70
Frequency
0.0
2.5
5.0
7.5
10.0
12.5
15.00
17.50
20.00
22.50
25.00
27.50
Post Intervention PHQ9 Score