Implementation of a Health Questionnaire to Screen for Adult Depressed Individuals at a Counseling Center: A Quality Improvement Project

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Implementation of a Health Questionnaire to Screen for Adult Depressed Individuals at a Counseling Center: A Quality Improvement Project

The Patient Health Questionnaire (PHQ) is a tool that is utilized to screen for potential depression and suicide (Carey, Boyes, Noble, Waller, & Inder, 2016). There are various types of PHQs, such as PHQ-2, PHQ-9, and PHQ-15 (AlHadi et al., 2017). This Doctor of Nursing Practice (DNP) quality improvement (QI) project will focus on the development and implementation of a protocol that will include the utilization of PHQ-2 and PHQ-9 in adult patients ages 18 years -and older at a counseling facility. The PHQs are composed of questions that are directly derived from the Diagnostic and Statistical Manual of Mental Disorder, fifth edition (DSM-5) which is a handbook that contains psychiatric diagnoses published by the American Psychiatric Association (APA) (Carey et al., 2016). The PHQ-9 consists of nine questions, while PHQ-2 only has the first two questions of the PHQ-9 (see Appendix A).

The PHQs are self-reported questionnaires. The PHQ-9 queries the patients if they have experienced depression symptoms in the past 12 months (Volker et al., 2016). The patients' answers are scaled from 0-3, 0 = not at all, 1 = several days, 2 = more than half the days, and 3 = nearly every day. A maximum score of 27 is given (Volker et al., 2016). A higher score is associated with the severity of depression (Carey, Boyes, Noble, Waller, & Inder, 2016). The sensitivity of the PHQ-9 with a cut off scoring of ≥ 10 is 88%, and specificity is 88% (Carey et al., 2016).

In comparison, the PHQ-2 is an abbreviated version of the PHQ-9 consisting of the first two questions of the PHQ-9 (Maurer & Darnall, 2012). Patients who test positive for PHQ-2 will be required to complete the PHQ-9 screening tool. The cut-off score for PHQ-2 is ≥ 3 as an effective screening tool for depression (Carey et al., 2016). PHQ-2 has been proven as effective

compared with other screening tools, such as the Beck Depression Inventory and Zung Depression Scale (Maurer & Darnall, 2012). PHQ-2 has a 97% sensitivity and 67% specificity in adults (Maurer & Darnall, 2012). Hence, both PHQ-2 and PHQ-9 have the capabilities of screening for potential depression and suicide.

The practice site is a not-for-profit counseling center that is located in Las Vegas, Nevada. Even though the counseling center currently has a PHQ-9 that is integrated into the electronic health records (EHR), there is no protocol for the appropriate use of the tool or any PHQ. The clinical staff, which includes front desk personnel, therapists, medical provider, and psychiatric providers do not consistently utilize the PHQ-9 tool which is provided in the EHR. Clinical staff has been familiarized concerning the PHQ-9 depression scale through prior clinical and academic experience. Consistent utilization of a screening scale, such as the PHQ-9 will help screen for potential depression in individuals (Rice & Thombs, 2016). The PHQ-9 tool is intended to promptly allow the ability for identification of depression and suicide (Fowler et al., 2015). Untreated and undiagnosed depression can be debilitating and affect the patients' quality of life, which can lead to suicide (El-Den, Chen, Gan, Wong, & O'reilly, 2018).

Background

Depression is a common psychiatric illness that affects 300 million individuals worldwide, according to the World Health Organization (WHO) ("Depression," 2018). Untreated depression has been reported to be the primary reason for disability worldwide ("Depression," 2018). Depression can be debilitating, which may lead to other medical comorbidities and even mortality. The debilitating effects of depression place individuals at high risk for suicide. Approximately 800,000 individuals die from suicide due to depression annually ("Depression," 2018). Suicide is the second cause of death in individuals aged 15- 29 years old

("Depression," 2018).

The prevalence rate of depression among Americans ages 20 years and older is 8.1% during 2013-2016 (Brody, Pratt, & Hughes, 2018). Brody et al. (2018) reported that depression could vary depending on factors such as age, sex, socioeconomic status, and health behaviors. The prevalence of depression is lower among non-Hispanic Asian American adults compared with Hispanic Americans, non-Hispanic African Americans, and non-Hispanic Caucasians (Brody et al., 2018). Approximately 81% of individuals reported that depression had affected their personal, social, and occupational life (Brody et al., 2018). Depression is common and preventable. The Center for Disease Control and Prevention (CDC) endorses the utilization of PHQ-9 to screen adult individuals for depression (Brody et al., 2018).

The number of individuals with a diagnosis of depression has almost doubled from 2009 to 2017 in Las Vegas, NV, according to the Southern Nevada Behavioral Health Annual Report (SNBH) ("Las Vegas," 2018). Southern Nevada Behavioral Health is a branch of the Nevada Division of Public Behavioral Health, which is an agency under the Department of Health and Human Services ("Las Vegas," 2018). The SNBH has reported that depression is the second leading mental health diagnosis in the emergency department and is the leading inpatient mental health diagnosis in Las Vegas. The statistical report showed the depression-related inpatient admission was 13,488 in 2009 (681.6 per 100,000 Southern Nevada residents), which has increased to 25,193 in 2017 (1,125.96 per 100,000 Southern Nevada residents) ("Las Vegas," 2018). Furthermore, the depression rates in the emergency departments have increased from 12,721 in 2009 (642.9 per 100,000 Southern Nevada Residents) to 21,657 in 2017 (967.8 per 100,000 Southern Nevada residents) ("Las Vegas," 2018). Depression has been associated with suicide. The recorded inpatient suicidal attempts in 2017 were 1,218 incidences ("Las Vegas,"

2018).

Problem Statement

Currently, the counseling center does not have a protocol which utilizes the PHQ-9 tool or any depression questionnaire to screen potentially depressed individuals. The staff has not been formally educated at the practice site on the utilization and significance of the PHQ-9 tool. Untreated depression can adversely affect an individual's life (Brody, Pratt, & Hughes, 2018). Although the reliability and validity of PHQ-9 to screen for depression has been established, the center has not been utilizing the PHQ-9 to screen for depression (AlHadi et al., 2017). The center provides counseling services to various ethnic backgrounds. The utilization of PHQ-9 at the center is appropriate because PHQ-9 has been proven successful in screening for depression in various cultures and ethnic groups (AlHadi et al., 2017).

Purpose Statement

The purpose of this DNP project is to develop and implement a protocol to utilize the PHQ-9 screening tool, which will improve patient outcomes. Current evidence-based articles will be reviewed to develop a protocol on how to correctly utilize the PHQ-9 depression scale. The protocol will also include a one-page algorithm that will be disseminated to clinical staff for implementation. In addition, the protocol will provide guidelines on the identification of depressed patients and referral for prompt and appropriate care. Knowledge acquired from this project will be disseminated to the clinical staff.

The PHQ-9 will assist in the screening and tracking of depressed patients. Identification of depressed patients is paramount to improve patient outcomes. The PHQ can assist in screening depressed and suicidal patients (Louzon, Bossarte, McCarthy, & Katz, 2016). The Veterans Health Administration (VHA) examined if the utilization of the PHQ-9 screening tool

will assist in the identification of suicidal risk among 447,245 individuals who completed the PHQ-9 depression scale (Louzon et al., 2016). Individuals who responded "several days" on item 9 were at 75% at risk for increased suicide, a response of "more than half the days" was associated with 115% risk for increased suicide, and "more than half the days" has a 185% risk for increased suicide (Louzon et al., 2016).

Project Question

The PICOT (Population, Interventions, Comparison, Outcome, and Time) model will be utilized to formulate a research question (Echevarria & Walker, 2014). The population is the staff at the practice site that will implement the PHQ-9 screening protocol. There is no direct patient recruitment in this project and chart reviews will be conducted to determine the implementation of the PHQ-9 protocol. Interventions refer to the implementation of the PHQ-9 protocol by the staff. Comparison represents the pre and post chart reviews to determine if the PHQ-9 screening tool was used. The outcome represents the identification of depressed patients as well as suicidal patients. Time will be limited to a four-week implementation phase (Echevarria & Walker, 2014). Thirty charts of adult patients will be reviewed. Data will be collected in the first and third weeks during implementation. A t-test will be utilized to compare the pre and post implementation PHQ patient results and staff knowledge surveys.

The project question is: Will the implementation of a PHQ protocol increase the identification of depressed and suicidal adult patients at a counseling center over the four-week implementation phase?

Project Objectives

During the time frame of this Doctor of Nursing Practice QI Project, the objectives will include:

1. Development of a PHQ-9 protocol based on evidence-based information that will be used

in the counseling center.

2. Provide education training session to staff on the evidence-based PHQ 9 protocol at the practice site.
3. Staff will implement the PHQ-9 protocol at the counseling center.
4. Evaluate the project results for pre-and post-knowledge of staff regarding the PHQ-9 protocol and identification of depressed and suicidal patients pre and post intervention through chart reviews.

Review Coverage and Justification

A comprehensive systematic review search of articles was conducted on several search engines, which included: Cumulative Index of Nursing and Allied Health Literature (CINAHL), ProQuest, MEDLINE, PsychINFO, UpToDate, and PubMed. In addition, a search at Embase had 10,208 articles for "patient health questionnaire" under the "quick search" filter. The search was narrowed by 304 results when a "patient health questionnaire" was searched in the articles' title. A publication date filter using 2014 - 2019 further narrowed the results to 152 articles. By choosing high-quality peer-reviewed articles, Cochrane review, Systematic review, Meta-Analysis, Controlled Clinical Trial, and Randomized controlled trial results the articles were narrowed to 13 results.

Another search was conducted at the Nevada Department of Health website to obtain statistical information concerning depression and population demographics. UpToDate offered links to various national and international guidelines that were valuable. References within some of the articles were included. The following are various keywords that were used to obtain 19 articles: implementation of patient health questionnaire, patient health questionnaire protocol, utilization of patient health questionnaire, implementation of screening tools and patient health

questionnaire. The Boolean function of each search engine was utilized to obtain more specific results, such as "implementation and patient health questionnaire." The truncated function was also utilized, such as "implement*" to search for variations of the word.

The search was narrowed by filtering articles that were published within the past five years, between 2014 until present. Inclusion criteria for a high level of evidence-based articles are Cochrane reviews, Systematic Reviews, Meta-Analyses, Controlled Clinical Trials, and Randomized Controlled Trials. Articles that discussed the validation of the PHQ, the implementation of PHQ, and the development of a protocol on how to utilize PHQ were included. Exclusion criteria were also lower quality articles such as expert opinions, case series, and case reports. Articles concerning pediatrics were also excluded. After considering the inclusion and exclusion criteria, there were 19 peer-reviewed articles that were included in this DNP project.

Review Synthesis

The PHQ was developed and implemented in primary care settings in 1999 (AlHadi et al., 2017). The PHQ is a revised and improved version of the original Primary Care Evaluation of Mental Disorders (PRIME-MD) (AlHadi et al., 2017). PHQ is one of the extensively used screening tools for depression in primary care settings (El-Den et al., 2018). This literature review did not reveal any evidenced-based articles concerning the implementation of PHQ at a counseling or therapy center. Nonetheless, PHQ has been robustly implemented in various practice settings (Schuler et al., 2018) and within an occupational health setting (Volker et al., 2016).

Implementing a screening tool at a practice setting will require evidence that the screening tool has been validated. Various studies have measured the accuracy of PHQ by

evaluating PHQ's sensitivity and specificity to screen for depression. The PHQ yielded a sensitivity of 84% and specificity of 82% in screening for depression in diabetic patients (Van der Zwaan et al., 2016). The cut-off score to detect depression in PHQ-2 is ≥ 3 while the cut-off for PHQ-9 is ≥ 10. Moreover, the psychometric reliability and validity of the PHQ to screen for depression were proven superior compared with other psychometric screening tools (El-Den et al., 2018). PHQ resulted in better diagnostic accuracy compared with the Hospital Anxiety and Depression Scale (HADS) and the WHO Well-being (WBI-5) depression screening tools (AlHadi et al., 2017). PHQ-9 also yielded better screening accuracy in comparison with the Geriatric Depression Scale (GDS) and General Health Questionnaire (GHQ) (Van der Zwaan et al., 2016). The sensitivity and specificity between the Beck Depression Inventory (BDI) and PHQ-9 were found comparable (Van der Zwaan et al., 2016).

The Neurological Disorders Depression Inventory for Epilepsy (NDDI-E) is superior compared with PHQ-9 and other tools to screen for depression (Gill et al., 2017). NDDI-E is specifically designed to identify depression in epilepsy (Gill et al., 2017). Although PHQ-9 has been proven superior to other screening tools for depression, PHQ-9 may not be the appropriate screening tool for certain depression disorder with other comorbidities. Other screening tools may be appropriate considering several factors such as the patients' disorders, practice settings, and culture. Implementing the appropriate depression screening tool for the right population is integral to obtain accurate results (Gill et al., 2017).

Cultural sensitivity and competence should be considered when implementing a screening tool in a practice setting. The counseling center located at Las Vegas, NV serves a diverse population. Las Vegas has a multitude of ethnicities: 45% White, 30.9% Hispanic/Latino, 10.3% African American/Black, 9.3% Asian, and 4.5% other race ("Demographics,"

2013). Therefore, choosing a depression screening tool that has been studied in different ethnicities is integral. The accuracy of the PHQ was verified in various ethnic groups in the United States, such as African American, Chinese Americans, and Latinos (AlHadi et al., 2017). Moreover, PHQ has been implemented and validated in several countries and has been translated into various languages (AlHadi et al., 2017). Examples of the countries that have implemented PHQ-9 as a depression screening tool are Nepal, Nigeria, Greece, Sri Lanka, Thailand, Taiwan, Turkey, and China (AlHadi et al., 2017).

Patients from different countries have different cultures, which may affect how patients react to depression. For example, Asians who are suffering from depression may manifest with somatic symptoms such as pain, fatigue, dizziness, or shortness of breath (Xiong et al., 2014). Xiong et al. (2015) defined somatic symptoms as a constellation of complaints without any medical explanation. The literature shows that Asians and Europeans may manifest with different depression symptoms (Drehera et al., 2017). Asian patients endorsed much higher levels of somatic complaints in comparison with European patients who have the same levels of depression based on the PHQ (Drehera et al., 2017). Symptoms of depression may be divided into somatic or cognitive-affective symptoms (Schuler et al., 2018). Items 1, 2, 6, and 9 of the PHQ may be classified as cognitive-affective related symptoms while items 3, 4, 5, 7, and 8 may be classified as somatic related symptoms (See Appendix A). Therefore, patients with somatic complaints without cognitive symptoms may not be identified as depressed patients when using the PHQ-2 (Schuler et al., 2018).

Nevertheless, various evidenced-based articles support the two-step process of initial administration of PHQ-2 then PHQ-9 if PHQ-2 comes back with a positive result (Loeb et al., 2015). The PHQ two-step process is conducive for the counseling center because the process is

quick. A majority of the patients do not want to fill out a long depression screening. It is important that the staff is trained on how to evaluate the PHQ for all ethnicities; even though the majority of the patients are Whites, Hispanics, and African Americans ("Las Vegas Demographics," 2013).

No depression screening tool is 100% sensitive or specific in identifying depression, which is why staff will need to be trained on how to screen patients for depression and not solely rely on the PHQ (Gill et al., 2017). Instead, the PHQ will be utilized to guide staff to screen for depression and will not be used as a diagnostic tool (Gill et al., 2017). Loeb et al. (2015) describe a step-by-step protocol on how to implement a two-step process of the PHQ2 and PHQ-9. Patients who tested positive on PHQ-2 will be required to fill out the PHQ-9. The psychiatric provider will be notified concerning the positive PHQ-2 results. Appropriate interventions are applied based on the psychiatric provider's determination. Patients are required to follow-up with the provider in 1-3 months to reassess their depression by administering the PHQ-9. Patients are also required to follow up in 1-2 weeks if they have been prescribed a psychotropic medication or any changes in medication (Loeb et al., 2015). Collaboration and consultation with other resources such as therapists, social workers and case managers are an integral part of the integrated care model (Smolderen et al., 2011).

According to the literature, it is important that staff are trained on when to consult and collaborate with clinical providers or specialists (Loeb et al., 2015). Training should consist of lectures that will focus on the rationale for universal depression screening, implementation of the PHQ two-step process protocol, collaborative care model approach, and documentation (Loeb et al., 2015). Training can enhance staff compliance on the implementation of the PHQ protocol (Loeb et al., 2015). Training will address any concerns and questions.

The literature shows that a successful implementation of the PHQ tool requires anticipation of barriers from the staff, facility, patients, and other stakeholders (Sanchez, Eghaneyan, & Trivedi, 2016). Some of the possible barriers may consist of lack of ownership about the process, concerns about patients' feelings and reactions, and protocol logistics (Smolderen et al., 2011). The rationale of the PHQ screening should be thoroughly discussed with the patient. Patients who are aware of the significance of screening for depression are more likely to be compliant on answering the PHQ truthfully (Sanchez et al., 2016). The counseling center and administration may be concerned regarding the financial impact of the implementation of the PHQ (Sanchez et al., 2016).

Impact of the Problem

Untreated and undiagnosed depression are associated with a financial burden to both the patients and the community (US Preventive Services Task Force [USPSTF], 2016). Depression can induce emotional suffering, impair personal relationships, and have potential adverse effects from treatment (USPSTF, 2016). Undiagnosed depression is linked to an increased cost of mental health visits, medical visits, and medications (Van der Zwaan et al., 2016). Costs to society may consist of loss of life, reduction in workforce secondary to absenteeism from work, and increase costs in medical and mental health care (Volker et al., 2016). Approximately $22.3 billion was spent for depression treatment in the United States in 2009 and loss of productivity from the workplace due to depression was estimated to be $23 billion in 2011 (USPSTF, 2016).

Addressing the Problem with Current Evidence

The Office of Disease Prevention and Health Promotion, which is part of Healthy People 2020 is congruent with the USPSTF recommendation of screening the general adult population for depression ("Healthy 2020," 2019). Depression is associated with social impairment and poor

quality of life (Bajracharya, Summers, Amatya, & DeBlieck, 2016). Early identification of depression is crucial for patients to receive the prompt intervention because depression can lead to medical comorbidities and even suicide (Bajracharya et al., 2016). Depression can be classified as mild, moderate and severe based on the PHQ-9 scores. Patients who scored between 0-4 will have no depression, 5-9 is mild, 10-14 is moderate, 15-19 is moderately severe, and 20-27 is severe (Van der Zwaan et al., 2016). The PHQ score of ≥ 10 will require collaborative care (Volker et al., 2016).

Prevention. Healthy 2020 and USPSTF endorse screening adult patients for depression with a protocol in place when patients test positive for depression. Healthy 2020 and USPSTF recommend an integrated care approach. A collaborative care model will be offered to patients who test positive for depression because the counseling facility has counseling, case management, social workers, medical, and psychiatric services (Hermens, Muntingh, Franx, Van Splunteren, & Nuyen, 2014).

No Depression. PHQ score of 0-4 may not require any interventions (Van der Zwaan et al., 2016). Nonetheless, all patients are seen by a therapist at the counseling center. Issues of disease literacy need to be addressed with the patients by the therapist (Sanchez et al., 2016). Primary prevention focuses on education, disease prevention, and health promotion. The patients will be made aware of the signs and symptoms of depression which is a crucial step to prompt patients to ask for assistance (Sanchez et al., 2016).

Mild Depression. The patients need to recognize that they are suffering from mild depression if the PHQ score is 5-9 (Van der Zwaan et al., 2016). Therapists will need to explore the patients' etiology of depression. Positive coping mechanism tools will need to be provided to the patients to prevent worsening of symptoms (Hermens et al., 2014). Teaching patients about

stress reduction, diet, exercise, and lifestyle changes are examples of psychoeducation that patients can use to cope with depression. Referral to a psychiatric provider, medical provider or other specialists should be considered. Both psychoeducation and psychotherapy are appropriate at this stage (Hermens et al., 2014).

Moderate Depression. The severity of the depression should be assessed and evaluated if patients have a PHQ ≥ 10 (Volker et al., 2016). Aggressive collaboration between the multidisciplinary healthcare team is required at this stage. Combination treatment of psychoeducation, psychotherapy, and psychopharmacology are required for moderate to severe depression (Hermens et al., 2014). Patients with medical conditions should be referred to the medical provider while patients with complicated psychiatric disorders such as schizophrenia, bipolar disorders or personality disorders should be referred to the psychiatric providers (Hermens et al., 2014). Severely depressed patients with psychosis, suicidal ideation or homicidal ideation should be referred for a psychiatric inpatient admission (Hermens et al., 2014).

Current Management. The counseling center does not currently have a depression screening protocol. Although the PHQ-9 is part of the EHR of the counseling center, the therapists or providers are not utilizing the PHQ-9 to screen patients for depression. The therapists are inconsistent in utilizing the PHQ. Some therapists utilize the PHQ and others do not. The therapists who utilize the PHQ are uncertain on how often the PHQ should be conducted on patients.

Current Recommendations. The USPSTF endorses the screening for depression in clinical practice (USPSTF, 2016). The USPSTF grades their recommendations as A, B, C, D, or I. The highest grade of an A means that benefits will be substantial for depression screening.

Benefits of early detection includes improve clinical outcomes. Examples of improvement of clinical outcomes are reduction, remission and resolution of depressed symptoms. The screening for depression in clinical practice received a B grade by the USPSTF, which means that screening for depression can likely yield from moderate to substantial benefits. Both the USPSTF and the Community Preventative Services Task Force (CPSTF) recommend collaborative care for the management of depression once patients have a positive screening for depression (USPSTF, 2016; "CPSTF," n.d.). The CPSTF is also known as "The Community Guide", was formed by the U.S. Department of Health and Human Services (DHHS) in 1996 to provide evidence-based information to the public ("CPSTF," n.d.). CPSTF compiles a collection of evidence-based findings that are based on scientific approaches ("CPSTF," n.d.).

A collaborative care model is a team-based approach that has shown to ameliorate clinical outcomes (Loeb et al., 2015). Once patients have been deemed positive for depression, patients should be diagnosed and treated with evidence-based care (Rice & Thombs, 2016). The least recommended intervention is having a trained staff refer the positive depressed patient to a provider (USPSTF, 2016). An optimal practice setting will have staff and clinician training, one to two day workshop, clinician manuals, monthly training workshops, academic lectures, a clinical staff visit for assessment, a clinical staff visit for follow up, a visit by a trained Cognitive Behavioral Therapist (CBT), and a referral to a psychotherapy (USPSTF, 2016). A multidisciplinary team approach has been proven to effectively treat depressed patients (Loeb et al., 2015).

Benefits of Current Recommendations. The American Psychiatric Association endorses the utilization of standardized screening tools for depression such as the PHQ-9 to monitor the progress of the patients (Silverman et al., 2015). A baseline PHQ score is vital to compare

subsequent scores. Progress of the patients will be based on serial PHQ scores. Psychiatric inpatient admissions may be prevented if moderate to severely depressed patients receive the appropriate interventions (Silverman et al., 2015).

Controversies. Depression screening is controversial because no standardized guidelines or polices exist (Levis et al., 2017). Although Healthy 2020 and USPSTF recommend for depression screening, neither have specific guidelines on how to manage positive depress results (Levis et al., 2017). Arguments exist that only new patients should be screened. Patients with a known diagnosis of depression or those currently receiving treatment for depression should not be screened. Screening the general population can produce exaggerated results which can subsequently lead to over diagnosis and overtreatment (Levis et al., 2017). The Canadian Task Force on Preventive Health Care has changed their guidelines to not screen the general public for depression ("Canadian Task Force," 2013). The United Kingdom's National Institute for Health and Care Excellence (NICE) has also changed their guidelines to only screen at-risk patients such as patients with a history of depression, significant chronic disorders causing disability, or other mental health disorders (The British Psychological Society [NICE], 2010). NICE has changed their guidelines from screening to identification of depression. NICE states that screening tools are not 100% accurate. Hence, false-positive results can subject patients to inappropriate treatments (NICE, 2010).

Review of Study Methods

PHQ has been extensively implemented in primary care settings because PHQ was initially designed for primary care settings. A cross-sectional study proved the accuracy of PHQ-9 in identifying depression among patients who were suffering from diabetes mellitus type II and coronary heart disease in primary care (Van der Zwaan et al., 2016). PHQ has also been

validated in other clinical settings. Volker et al. (2016) conducted a randomized controlled trial study consisting of 170 employees on patients who were on sickness leave. The study showed that the PHQ-9 has good sensitivity and specificity in screening for depression (Volker et al., 2016). In addition, PHQ was implemented in a randomized controlled study consisting of 561 COPD patients at an inpatient rehabilitation. Chronic disorders such as Chronic Obstructive Pulmonary Disease (COPD) have been linked with depression (Schuler et al., 2018). The study showed that PHQ-2 and PHQ-9 were reliable for validity in screening for depression (Schuler et al., 2018).

A systematic review study proved the validity of PHQ-9 by comparing PHQ-9 with other psychometric tools to screen for depression (El-Den et al., 2018). PHQ-9 was proven superior to HADS and WBI-5 (El-Den et al., 2018). The cross-sectional study of Van der Zwaan et al. (2016) showed that PHQ-9 is comparable to BDI but superior to GDS and GHQ. In contrast, PHQ-9 was inferior to NDDI-E based on a systematic review study (Gill et al., 2017). NDDI-E is a screening tool for depression that is explicitly designed for epileptic patients (Gill et al., 2017).

The PHQ was implemented on different ethnic backgrounds and various countries to test the PHQ's validity. A quantitative observational cross-sectional study proved the validity of PHQ among Arabs in Saudi Arabia (AlHadi et al., 2017). Cultural competency should be considered when evaluating the results of PHQ. A multivariate analysis of covariance and regression analysis was utilized to investigate the cross-cultural differences between Asian and European backgrounds when utilizing PHQ (Drehera et al., 2017). Asians or individuals who have predominant somatic complaints may have false-negative results when using the PHQ-2 as supposed to using the entire PHQ-9 (Drehera et al., 2017).

Nonetheless, a prospective quasi-experimental design showed that the two-step method of utilizing PHQ-2 initially, then PHQ-9 subsequently was proven successful (Bajracharya et al., 2016). Loeb et al. (2015) were also able to demonstrate the success of the two-step process by conducting a retrospective data analysis. The success of the implementation of PHQ requires dissemination of the significance of PHQ in screening for depression through staff training (Loeb et al., 2015). Barriers during implementation and training should be anticipated. A prospective study was conducted by Smolderen et al. (2011) that showed potential barriers during the implementation phase.

Significance

The literature review did not show where a counseling center implemented the PHQ for depression. Identification of depression is paramount because depression is one of the leading causes of disability in individuals 15 years and older (USPSTF, 2016). The United States Preventive Services Task Force (USPSTF) recommends screening all adult individuals for depression in an integrated care setting (USPSTF, 2016). The brevity of PHQ can provide immediate screening for suicide and depression. Although PHQ is not a diagnostic tool, PHQ can facilitate in the diagnosis of major depression (El-Den et al., 2018). Serial PHQs can be conducted on patients to gauge the patients' improvement or worsening of depression symptoms (Loeb et al., 2015). PHQ can also be used as a guide to reflect the patient's response to interventions such as psychoeducation, psychotherapy, and psychopharmacology (Loeb et al., 2015).

Untreated and undiagnosed depression can affect an individual's quality of life (El-Den et al., 2018). Depression causes decreased appetite, difficulty sleeping, increase the risk for substance abuse, and other medical conditions such as diabetes and coronary heart disease (Van

der Zwaan et al., 2016). Depression that is not treated is associated with suicidality (Louzon et al., 2016). Item 9 of the PHQ specifically ask the patients for suicidal ideations. Louzon et al. (2016) conducted a study that showed reports of depressive symptoms by individuals are better indicators of suicidality compared with a diagnosis of depression. Louzon et al. (2016) recommend the utilization of PHQ to screen for depression and suicidality. Louzon et al. (2016) showed the significance of item 9 in detecting suicidal ideations.

Theoretical Framework

Nursing theories were developed to improve clinical practices (Ribeiro, Ferreira Pereira da Silva Martins, Rizatto Tronchin, & Almeida Ventura da Silva, 2018). Nursing theories can bridge the gap between theory, research and practice (Ribeiro et al., 2018). Choosing the right theory provides a foundation for the literature review, methods and analysis (Ribeiro et al., 2018). The right theory can also provide guidance and framework for the implementation of PHQ. Whereas, the absence of a theoretical framework may cause uncertainty during the implementation of PHQ (Ribeiro et al., 2018).

Historical Development of Theory

The theory selected for this DNP project is Kurt Lewin's Change Theory. Kurt Lewin is considered the father of social psychology ("Kurt Lewin," 2016). Kurt Lewin was a Jewish nursing theorist who was born on September 9, 1890 in Germany. He obtained his Ph.D. at the University of Berlin. He served in the German Army, promoted women's rights, and was involved in the socialist movement. Kurt Lewin moved to the United States in August 1933 and became a naturalized citizen in 1940. He encouraged change to fight against religious and racial prejudices. He worked at various universities to promote change, namely: Stanford University, Cornell University, University of Iowa, and Massachusetts Institute of Technology ("Kurt

Lewin," 2016).

Lewin developed the nursing theory known as the Change Theory ("Kurt Lewin," 2016). The Change Theory was developed as a nursing model to guide change with the nursing profession ("Kurt Lewin," 2016). Nonetheless, the Change Theory has been successfully implemented and adopted by other disciplines (Endrejat, Baumgarten, & Kauffeld, 2017). The Change Theory is vital to the nursing profession since nursing is continually evolving and changing (Bakari, Hunjra, & Niazi, 2017). Implementation of successful changes is necessary to ameliorate current practices (Endrejat et al., 2017). Kurt Lewin's Change Theory involves three stages: unfreezing, change, and refreezing. The Change Theory has three major concepts: driving forces, restraining forces, and equilibrium ("Kurt Lewin," 2016).

Application of Theory to Nursing Practice

Change is warranted in the nursing profession because nursing is continually evolving and changing due to various factors such as constant technological advancements (Bakari et al., 2017). Health laws, regulations and policies need to be updated to meet the needs of the patients. Hence, an effective theory for change is essential to the nursing profession. Kurt Lewin's Change Theory has been proven effective in implementing change in organizations (Endrejat et al., 2017). Change Theory can provide structured guidance to implement the warranted change that patients require (Bakari et al., 2017).

The three stages of Kurt Lewin's Change Theory can provide profound positive clinical changes (Endrejat et al., 2017). The unfreezing stage can make stakeholders aware of any current clinical issues or healthcare policies that need to be ameliorated. The therapists, providers, and administration are considered the stakeholders. The reason and significance for changes are explained to all stakeholders during the unfreezing stage. The resolution of the

clinical issues or new healthcare policies are implemented during the change stage. Finally, the refreezing stage will maintain the newly implemented clinical solution or new healthcare policies (Endrejat et al., 2017).

Major Tenets of the Theory

Kurt Lewin's Change Theory is comprised of three stages and three major concepts. The three stages are: unfreezing, change and refreezing and the three major concepts are: driving forces, restraining forces, and equilibrium (Bakari, Hunjra, & Niazi, 2017).

Three Stages of Change Theory

Unfreezing Stage. The three major concepts of the Change Theory are applied during the unfreezing stage (Bakari et al., 2017). The unfreezing stage analyzes individuals' current practice, culture, behavior and belief. Unfreezing aims to improve clinical outcomes by evaluating current practices and developing a plan to improve current practices. Driving and restraining forces are identified during the unfreezing stage. The unfreezing stage attempts to create an awareness that a change is warranted. The status quo, level of acceptability and possible obstacles to change are analyzed during the unfreezing stage (Bakari et al., 2017).

Change Stage. The change state is also known as transitioning or moving (Bakari et al., 2017). The change stage involves altering the individuals' feelings, behaviors and thoughts. The organization as a whole must embrace the new state of being. During the change stage, the individuals are learning new processes and the organization must embrace the new change. The change stage can be challenging because the individuals are dealing with uncertainties and fear of change. Education, communication and support concerning the change should be provided to the individuals to address the stakeholders' uncertainties and fear of change. The significance of the implementation should be acknowledged by the individuals to obtain a successful change

(Bakari et al., 2017).

Refreezing Stage. The refreezing stage attempts to maintain the implementation that was conducted during the change stage (Bakari et al., 2017). The refreezing stage involves the reinforcing, stabilizing and the solidifying of the change. The change that was implemented by the individuals or organization will be considered as the new norm or status quo. The change should be embraced by the individuals and organizations as the new process and part of their new culture. The goal of the refreezing stage is to maintain the new status quo and not revert back to the old ways. The goal can be accomplished by positive rewards, constant communication, sufficient support, and continual education (Bakari et al., 2017).

Major Concepts of Change Theory

Driving forces. Driving forces are factors that promote changes ("Kurt Lewin," 2016). A catalyst is required for change to happen and certain factors can facilitate change. Individuals need to believe in the reasons for change; the driving forces will push individuals to change ("Kurt Lewin," 2016).

Restraining forces. The opposite of driving forces is restraining forces ("Kurt Lewin," 2016). Restraining forces are the barriers to change and are obstacles that are preventing individuals to proceed with the change. Individuals may believe that there is only a slight benefit or no reason to change. Restraining forces disrupt the equilibrium state by reverting to old methods ("Kurt Lewin," 2016).

Equilibrium. Equilibrium is the point where driving forces equal restraining forces. No change is occurring during the equilibrium state ("Kurt Lewin," 2016). The equilibrium state is where the individuals are accepting the current situation and not wanting to change. The status quo is prevailing. The equilibrium state can be increased or decreased depending on the

interaction between the driving forces and restraining forces ("Kurt Lewin," 2016).

Application of Theory to DNP Project

Changing the counseling center's practice to embrace the use of a PHQ form will require a strategic plan, leadership support, and engaging staff to keep the practice change on track. These strategies will unfreeze the current practice of a lack of a depression screening tool by disrupting the status quo, moving staff to accept the implementation of a standardized depression screening tool, and refreezing the counseling center's culture in which a standardized depression screening tool becomes a practice expectation (Endrejat et al., 2017).

Unfreezing

The major concepts of Kurt Lewin's Change Theory will be applied to implement the PHQ at a counseling center. The unfreezing stage is the time for planning the logistics of how the PHQ will be implemented (Endrejat et al., 2017). Assessing readiness for change will be performed during the -unfreezing stage. The driving forces and restraining forces will be taken into consideration. The significance of the utilization of the PHQ based on literature review will be discussed during the-unfreezing stage. Potential barriers for the stakeholders will be anticipated (Endrejat et al., 2017).

During the unfreezing stage, the stakeholders will be surveyed concerning their knowledge of the PHQ to screen for depression and suicide. The engagement of stakeholders during the implementation of the PHQ is vital to the success of the DNP project. Any concerns, feedback or question from the stakeholders will addressed (Endrejat et al., 2017).

Change

The change stage is the time of implementation (Endrejat et al., 2017). During this stage, there will be attempts to increase driving forces and decrease the restraining forces. The benefits

of the PHQ will be emphasized and any obstacles will be promptly addressed. The significance and benefits of the PHQ will be reiterated again during this stage. Communication is vital in this stage. Staff members' roles during the change will be defined and will include methods to empower stakeholders to be actively involved in the change. Stakeholders will be educated and trained concerning the PHQ implementation and the support of managers and administration in the implementation of the PHQ will be employed (Endrejat et al., 2017).

Refreezing

The purpose of the refreezing stage is to sustain the previously introduced changes (Endrejat et al., 2017). The PHQ protocol will be part of the counseling center's clinical practice. The progress of the change will be evaluated during this stage. Constant communication is vital to elicit stakeholders' feedback, concerns or questions. Stakeholders' involvement and engagements are also essential during this stage. Positive reward and recognition will be provided. Any challenges due to the implementation of the PHQ protocol will be immediately resolved. Continual education and training will be provided to the stakeholders (Endrejat et al., 2017).

Description of Project Design

A quality improvement (QI) design will be utilized for this DNP project. The practice site does not have a protocol on PHQ use. The focus of this project is to implement the PHQ to assist in the identification of depressed and suicidal patients at a counseling center over a four-week implementation phase. A two-step PHQ method will be used to determine success in screening for depression and suicide (Loeb et al., 2015; Bajracharya, Summers, Amatya, & DeBlieck, 2016; Smolderen et al., 2011). The PHQ-2 will be printed on the front page and the PHQ-9 will be printed on the back page. The front desk staff will provide the patients the PHQ-

2 form to fill out (Loeb et al., 2015). The maximum PHQ-2 score is 6 (Loeb et al., 2015). PHQ-2 scores of 2 or less do not warrant further interventions, while scores of 3 or more requires the patient to proceed to the back page and complete the PHQ-9 (Loeb et al., 2015).

The front desk staff are non-clinical individuals whose primary job duties are scheduling patients' appointments and conducting lobby traffic by alerting therapists of the patients' presence for their scheduled appointments. Front desk personnel have office administrative - training and do not have clinical experience or training. There are approximately twenty therapists employed at the counseling center. Each therapist holds a different license such as licensed clinical social worker (LCSW), licensed mental health counselor (LMHC), licensed clinical professional counselor (LCPC), and licensed marriage and family therapy (LMFT). Therapists are clinically trained to conduct various types of treatments such as cognitive behavioral therapy, marriage counseling, substance abuse counseling, and eye movement desensitization and reprocessing (EMDR).

The implementation of the PHQ protocol is based on evidence-based practices and a current literature review. The protocol will screen for depressed adult patients; if positive, patients will be referred to therapists or psychiatric providers. A descriptive analysis procedure will be used during the data collection. The Statistical Package for the Social Sciences (SPSS) program will be used to analyze the data. The primary variables that will be analyzed are patients' demographics, pre and post PHQ results of the patients, pre and post staff knowledge, and number of counseling sessions the patients have received. Other dependent variables that can affect the PHQ results are existing depression diagnosis, current psychiatric diagnoses other than depression, psychiatric treatments, history of suicide ideations, and history of suicide attempts.

Population of Interest

The population of interest for this DNP project will include the staff and providers currently employed at the practice site. The practice site employs approximately twenty therapists, five case managers, five front desk personnel, two social workers, two providers, information technology (IT) staff and administrators. One provider is a physician with a specialty in psychiatry. Administrators consists of the chief executive officer (CEO), chief financial officer, clinical director for the therapists, and assistant clinical director for the therapist. Permission to implement the DNP project at the practice site was obtained from the chief executive officer of the counseling center (See Appendix F). The inclusion criteria requires that staff and providers are currently employed by the project practice site and engage either in direct patient care and/or scheduling/patient intake. Any staff or providers not employed at the practice site or that do not directly provide patient care or scheduling/intake are excluded from participation. The patients at the practice site would be an indirect population needed in order for the staff to implement the intervention. This population includes all adult patients who are 18 years old and older; pediatric patients will be excluded.

Stakeholders

Stakeholder engagement is important in the decision-making process and sustainability of any project (Sanchez et al., 2016). The identified stakeholders for this project are all the staff of the practice site including the administrators (Sanchez et al., 2016). During the design stages of the project, weekly collaboration among the stakeholders will take place to ensure successful implementation of the PHQ protocol. The administrators can provide motivational support and encouragement to other stakeholders during the implementation phase. Front desk personnel will provide the PHQ forms to the patients. Therapists will provide therapy sessions to the

patients. Other stakeholders such as the case managers, social workers, providers and IT staff will support the implementation process. Collaboration and engagement of stakeholders can reveal a range of concerns, attitudes, information, and perspectives needed for a successful implementation of the project (Sanchez et al., 2016).

Setting

The project site setting is a counseling center located in the state of Nevada. The project site was established in 1971 and is the oldest non-profit counseling facility in Southern Nevada ("Bridge," n.d.). The project site provides therapy services to insured and uninsured individuals. A sliding fee scale is also offered to low income individuals. The project site offers individual, family, and group therapies. The project site has a contractual agreement with the legal court system to rehabilitate individuals who are newly released from prison and individuals who are on probation that required intensive outpatient treatments (IOP). The IOP program entails eight to ten hours per week of intensive individual and group therapies ("Bridge," n.d.). The practice site has approximately 700 active patients and provides approximately 400 visits per week. Each patient may have more than one visit per week. For instance, a patient may seek multiple group therapy sessions per week. Although the project site provides therapy services to adolescents and youths, the majority of the patient population is 18 years and older.

Recruitment Methods

The recruitment method for this project design will be direct recruitment that will consist of meeting with staff and providers to provide information about the DNP project. Since this is a QI project, all staff and providers will implement the protocol at the project site. The project lead will conduct chart audits that will include individuals who are currently patients at the

project site. The project lead will provide lunch during each presentation. Confidentiality will be adhered according to the project site policy.

Chart recruitment

A convenient sampling method will be used to determine the charts that will be utilized for this DNP project. A target of 30 chart reviews will be conducted. Patients will not be recruited in this DNP project. Each patient record will be assigned a number to protect patient's privacy and confidentiality. The practice site uses electronic medical records (EMR). However, therapists only use the EMR to input patients' medical history, psychiatric history and medications. The front desk personnel use the EMR to alert therapists when the patients are present for their scheduled therapy sessions. The remaining staff members use the EMR for scheduling and emailing. All therapists have a paper chart for the patients. Therapy notes are handwritten and are not uploaded to the EMR. The data collection will be based on the paper charts of the patients. Advertisements and incentives will not be used because the convenient sample will be based on the number of available charts at the practice site.

Tools/Instrumentation

The tools that will be utilized in this DNP project are PHQ-2 (Appendix A), PHQ-9 (Appendix A), staff knowledge survey (Appendix B), one-page front desk personnel work flow algorithm (Appendix C), PowerPoint (PPT) presentation slides for all staff members (Appendix D), and one-page PHQ algorithm for the therapists (Appendix E), a codebook, and Statistical Package for the Social Sciences (SPSS). The PHQ-2 and PHQ-9 will be completed by the patients. The staff knowledge survey will be used to gauge the front desk personnel's knowledge on PHQ during pre and post implementation. The PPT presentation slides are created to educate all the staff members. The one-page PHQ algorithm was developed as a guide for the therapists.

A codebook was created to organize data collection. The SPSS software will assist in statistically analyzing the data collected from the project site.

PHQ Measuring Tools

A PHQ measuring tool will be utilized in this DNP project (Appendix A). The PHQ is a validated tool with associated psychometrics (Carey et al., 2016). The PHQ tool can identify depression and monitor the patients' progress (Cole et al., 2012; Silverman et al., 2015). Serial PHQ results will quantify and objectify the improvement or worsening of patients' depression (Cole et al., 2012; Silverman et al., 2015). Suicidality is one of the questions of the PHQ; therefore, PHQ can identify suicidal patients as well (Louzon et al., 2016). The tool would indicate if patients may require interventions depending on the PHQ results. The PHQ is not a diagnostic tool that will replace sound clinical judgment because patients may not be willingly disclose their depression and suicidality (El-Den et al., 2018; Gill et al., 2017).

Pre and Post Questionnaire

A pre and post implementation staff knowledge questionnaire will be developed by the project lead (Appendix B). The survey will be limited to the front desk personnel who are non-clinicians. The questionnaires are comprised of six multiple choice questions before and after receiving the training intervention. The questions are based on the information presented in the educational presentation. The front desk personnel will answer six pre and post questions. The content validity and reliability of the questionnaire were determined by the course instructor, academic mentor, and project mentor. A content validity index (CVI) score of 0.78 or higher is considered excellent, 0.78- 0.63 is average, under 0.53 is suboptimal and lacks clarity (Rutherford-Hemming, 2015). The mean total of all of the means was 4.0 and the CVI = 1.0 indicating that all six of the questions were highly relevant (Rutherford-Hemming, 2015).

Workflow Algorithm

A one-page workflow algorithm was created to guide front desk personnel (Appendix C). The majority of the front desk personnel do not have any clinical training. Therefore, a one-page workflow algorithm on how to provide PHQ to the patients will guide the front desk personnel.

Educational Intervention

Didactic lectures will focus on explaining the rationale to all staff members, while practical training will emphasize the protocol procedures (Loeb et al., 2015). A PPT presentation will be developed by the project lead and presented to the therapists during the first week (Appendix D). A concise one-page algorithm on how to evaluate PHQ will be provided to all clinical staff members (i.e. therapists and providers) (Appendix E) and will guide clinical staff on how to manage patients with positive PHQ results. The one-page PHQ algorithm was created based on Loeb et al., (2015) algorithm.

Data Collection Procedures

Thirty charts of adult patients will be reviewed. Data will be collected in the first and third weeks during implementation. A t-test will be utilized to compare the pre and post implementation PHQ patient results and staff knowledge surveys. Excel and SPSS will be used to organized data collection from the patients' chart and front desk personnel. Excel and SPSS will assist in performing a descriptive statistical analysis of all data collected. The pre and post implementation PHQ results and staff survey will be compared and evaluated by utilizing the SPSS software. A codebook has been established to organize the data collection and list all the variables. Patients will be assigned with numbers to protect privacy and confidentiality.

Intervention/Project Timeline

The DNP project will be implemented during a four-week time frame. The implementation phase will include: implementing the intervention, collecting data, and evaluating the project results. Implementing the DNP project at the practice site was approved by the CEO (Appendix F). No patients will be recruited during the implementation phase. Below is the project timeline:

Date	Activity	Responsible Party
Carrying out the Implementation Phase		
Week 1 **Pre-** **Implementation**	Notify CEO and leadership regarding the commencement of the DNP project. Provide front desk personnel a pre-implementation staff knowledge survey on PHQ (Appendix B).	Project lead
	The PHQ-2 and PHQ-9 forms (Appendix A) and PPT slides on PHQ (Appendix D) will be presented at a staff meeting.	Project lead, leadership, therapists, case managers, social workers, and front desk personnel
	Provide the front desk personnel with the one- page workflow algorithm (Appendix C).	Project lead and front desk personnel
	Provide the therapists with the one-page algorithm on PHQ (Appendix E).	Project lead and therapists
	All adult patients ages 18 years and older will complete a PHQ form that will be provided by the front desk personnel.	Project lead and front desk personnel
Week 2	Based on the PHQ score referrals will be made for counseling sessions of patient. No patients will be recruited.	Project lead and therapists
Collecting Data		
Week 3	Provide patients with the second PHQ form.	Project lead and front desk personnel

Post-Implementation	Chart review of the PHQ forms for a convenient sample size of 30 charts.	Project lead
Evaluating Data		
Week 4	Provide front desk personnel a post-implementation staff knowledge survey on PHQ (Appendix B). The pre and post implementation staff knowledge regarding PHQ will be analyzed by utilizing the SPSS software.	Project lead and front desk personnel
	The second PHQ form that was completed on the third week will be compared with the initial PHQ form that was completed by the patients on the first week of implementation phase. The data collected on the fourth week be evaluated by utilizing the SPSS software.	Project lead

Staff will be queried concerning any feedback during the training sessions. Staff are vital participants necessary for the success of the implementation of the PHQ. Staff who are engaged during training are likely to be compliant with the implementation of the PHQ (Loeb et al., 2015). Successful employee engagement can yield positive clinical outcomes during the implementation phase. Questions and concerns concerning the PHQ protocol implementation will be addressed during didactic training and practical sessions (Loeb et al., 2015).

Ethics/Human Subjects Protection

The DNP project is a QI initiative and will not involve direct patient care (Loe, Winkelman, & Robertson, 2016). Touro University's review board (IRB) approval form will be completed to determine if IRB review is necessary. When there is minimal risk to human subjects and data is de-identified, the project is exempt for IRB review (Loe et al., 2016). It is the expectation by the project lead that this DNP project will be considered exempt from the IRB

review, since there is minimal risk to human subjects. Any risk would not be beyond that of everyday activities. Any data collected will be de-identified and meet the standard for security at the practice site.

The DNP project will protect privacy and confidentiality of patient charts. The PHQ form will be implemented by the staff at two different points in time and entered into the patient charts. Data will be de-identified using numerical coding. Patients' name or any identifying information will not be included when logging patients' information in SPSS.

Staff, who are the direct population of interest, will receive their hourly wage and no other additional compensation. The privacy and confidentiality of staff will be protected by de-identifying any collected information. The pre- and post-implementation front desk knowledge survey (Appendix B) will not contain any identifying information. The data collection will be conducted by the project lead. Results of the DNP project will be shared to leadership at the practice site. The project lead will secure any results of the pre and post implementation front desk knowledge surveys in a secured locked cabinet located at the practice site.

Plan for Analysis/Evaluation

Identification of patients at risk for depression or suicide may be determined by the results of the completed PHQ forms. The pre and post front desk personnel knowledge survey will measure front desk personnel's comprehension of the implementation of the PHQ protocol. The pre and post implementation data will be statistically analyzed by utilizing the SPSS software. The t-test will be used to analyze the pre and post implementation data results of the front desk personnel knowledge survey and the PHQ form data collected at two different points in time (Pallant, 2016). The t-test is designed to measure the results collected on two various occasions (Pallant, 2016). The difference between the pre and post implementation data of the

PHQ and front desk personnel knowledge survey results will be determined by the t-test (Pallant, 2016).

Statistical assumptions will be considered in the normality, linearity, equality of variance (Pallant, 2016). Data will be assumed to be in normal distribution (Pallant, 2016). Normality will be tested by using the t-tests (Pallant, 2016). A Pearson's correlation test will be used to test the linearity between independent and dependent variables (Pallant, 2016). Inaccuracy may be present if linearity between independent and dependent variables are not met. A t-test will also be used to test the equality of variance (Pallant, 2016). Variance is defined as the data spread or scatter (Pallant, 2016). Although –the information in the patient records and front desk personnel are different populations with difference means, they are assumed to have the equal variance (Pallant, 2016).

Significance/Implications for Nursing

The objective of this DNP project is to develop a PHQ protocol based on current literature review and determine if this will increase the identification of depressed and suicidal adult patients at a counseling center over the four-week implementation phase. The protocol will guide staff members in identifying depressed and suicidal patients. Depression is a common and preventable disease according to the World Health Organization ("Depression," 2018). Early identification of depression is warranted in order to provide prompt clinical interventions. Clinical staff (i.e., therapists and providers) will be trained and educated concerning the significance of utilizing the PHQ to identify depressed and suicidal patients to promptly manage patients' depression. The PHQ will assist the clinical staff in assessing the severity of patients' depression. The PHQ categorizes the patients' depression as minimal, mild, moderate, moderately severe or severe (Hermens et al., 2014). The PHQ protocol will direct clinical staff

on what interventions should be taken based on the patients' depression severely. For example, a moderate depression which is PHQ-9 score between 10-14 recommends several interventions such (a) a watch and wait approach, (b) consider counseling, (c) consider pharmacotherapy, and (d) consider referral to psychiatric provider (Hermens et al., 2014; "New York State," 2016; Van der Zwaan et al., 2016).

Prompt depression management may provide patients with complete remission of depression, and can prevent future relapses, medical complications, and psychiatric complications (Bajracharya et al., 2016). Depression can be debilitating. Severe depression causes various medical and psychiatric complications that affect the patients' quality of life (Bajracharya et al., 2016). Hence, early identification and prompt interventions for depression can improve the patients' quality of life. Severe depression can lead to suicidal ideations and suicidal attempts ("Depression," 2018). The PHQ-9 item number nine specifically ask that patients if they are suicidal (Louzon et al., 2016). Therefore, The PHQ-9 can assist clinical staff in screening patients who are suicidal. The PHQ has the potential to identify depressed and suicidal patients and potentially save lives (Louzon et al., 2016).

Analysis of Results

Data were screened for univariate outliers using box and whisker plots and were tested for requisite statistical assumptions such as sphericity and normality. The data met all requisite assumptions and no outliers that would otherwise undermine the trustworthiness of the data were detected. Hence, data analysis proceeded without making any statistical/mathematical adjustments to the data.

Descriptive statistics and bivariate, zero-order Pearson's product-moment correlation coefficients were requested for the data. In addition, a series of paired/dependent-samples *t*-test

were conducted to compare staff ($N = 7$) pretest knowledge scores to posttest knowledge scores as well as patient pretest and posttest PHQ-9 scores to meet the main research objectives of the present study. Staff pretest and posttest knowledge raw scores were mathematically transformed to percentiles to facilitate interpretation whereas PHQ-9 scores were interpreted in their original raw scale. In addition, a series of ANOVAs were conducted to examine whether any demographic characteristics influenced patients' PHQ-9 scores. The effect size to evaluate the practical significance of the *t*-test findings was Cohen's *d* and the lower bound and upper bound values of its 95% confidence interval ($CI_{95\%}$) and those of the ANOVAs was η^2. Cohen (1988) provided the following interpretive guidelines for *d*: 0.010-0.499 as small; 0.500-0.799 as medium; and >0.800 as large. Cohen's *d* is interpreted as a standardized mean difference between pretest and posttest knowledge percentile scores, and thus, they are interpreted as standard deviations in a *z*-score distribution. For η^2 the guidelines are: 0.010-0.059 as small; 0.060-0.139 as medium; and ≥ 0.140 as large. Unlike *d*, η^2 is interpreted as the proportion of variance in the dependent variable attributable to the independent variable.

Questionnaires

The demographic results of the staff were analyzed. The results showed that the age of the seven staff members ranged from 21 to 39 years ($M = 25.43$; $SD = 6.40$), with all of them reporting their gender as female. Table 1 presents the descriptive statistics for the staff knowledge percentile scores at pretest and posttest. The bivariate, zero-order correlation between staff pretest and posttest knowledge percentile scores was Pearson's $r = 0.92$. Results of the paired-samples *t*-test between staff knowledge revealed a statistically significant difference between pretest and posttest knowledge percentile scores, $t(6) = -13.00$, $p < .001$, Cohen's $d = -4.846$ ($CI_{95\%} = -6.929$ to -2.770). The mean difference between pretest knowledge

and posttest knowledge percentile score was -30.95, suggesting that staff members obtained a significantly higher posttest knowledge percentile score after implementation of the training compared to pretest knowledge percentile score. Regarding effect size, or the practical significance of the findings, the value of *d* (-4.846) indicates a rather large effect. Interpreted more substantively, the standardized mean difference between pretest and posttest knowledge percentile score is over four standard deviations, which is large and practically significant, even after considering the small sample size. Thus, the training was rather successful at improving the knowledge percentile scores of the seven staff members.

Table 1

Staff Pretest and Posttest Knowledge Percentile Score

Variable	Pretest		Posttest	
	M	*SD*	*M*	*SD*
Knowledge Percentile	57.14	16.27	88.10	15.85

N = 7

PHQ-9

The staff administered the PHQ-9 pretest and posttest to 57 patients. The results showed that thirty four (60% of the sample size) out of the 57 patients have indicated a minimum score of 1 in the PHQ-9 forms; while 23 (about 40% of the sample size) out of 57 patients indicated a zero score for both PHQ-9 pretest and posttest. A zero score for PHQ-9 indicates that a patient has no depression (Van der Zwaan et al., 2016). Six patients (10.5% of the sample size) scored on question #9 of the PHQ-9 pre-test, which is the PHQ-9 question that refers to suicidality, while two patients (3.5% of the sample size) had a PHQ-9 posttest score regarding question #9. All 57 patients have received therapy sessions.

Variables that were not taken into considerations are the number of therapy sessions that were provided to the patients after the PHQ pretest and before the PHQ posttest. Other variables

that were not factored in were patients' existing depression, receiving psychopharmacological interventions, and medical comorbidities. Multiple factors can influence patients' PHQ scores. The table below provides a descriptive statistical analysis of the demographics and other variables that were collected form 57 patients.

Table 2 presents descriptive statistics of the sample of patients ($N = 57$).

Table 2

Descriptive Statistics of the Sample of Patients

Variable	Frequency	%	*M*	*SD*
Employment				
Full-Time	21	41.2	-	-
Part-Time	6	11.8	-	-
Unemployed	24	47.1	-	-
Gender				
Male	21	36.8	-	-
Female	36	62.3	-	-
Education				
Some High School	6	12.8	-	-
High School Graduate or Equivalent	32	68.1	-	-
Associates Degree	8	17.0	-	-
Baccalaureate	1	2.1	-	-
Ethnicity				
White	22	38.6	-	-
African American or Black	14	24.6	-	-
Asian or Pacific Islander	4	7.0	-	-
Hispanic or Latino	17	29.8	-	-
Type of Patient				
New	6	10.5	-	-
Existing	51	89.5	-	-
Referral Type				
Mandatory	22	38.6	-	-
Voluntary	35	61.4	-	-
Age	-	-	36.07	9.92
PHQ Pretest	-	-	4.12	5.87
PHQ Posttest	-	-	3.65	5.28

$N = 57$

Regarding differences between PHQ-9 pretest and posttest scores, although the mean PHQ score was less at posttest compared to pretest, results revealed no statistically significant

differences, $p = .35$. None of the demographic variables exerted any significant differences on PHQ-9 pretest and posttest scores, except for referral type (mandatory vs. voluntary). Voluntary patients are patients who willingly seek therapy sessions from the counseling center; mandatory patients are patients who are court ordered to attend therapy sessions for various reasons i.e., domestic violence, driving under the influence (DUI) or child protective services (CPS) custodial case. A plethora of statistical analysis were conducted to explore any variables that associated with depression and suicide. Majority of the patients were existing patients of the counseling center. New patients accounted for 10.5% of the sample size population while existing patients were 89.5%. New versus existing patients had no impact on depression. Employment status such as employed versus unemployed and fully time employment versus part time employment were not associated with depression. Educational levels showed no significant correlation with depression. Ethnicity did not impact patients' level of depression. Whites versus non-whites had no statistically significant difference relating to depression.

Results revealed that there were statistically significant differences in pretest (mandatory: $M = 1.68$; $SD = 3.60$; voluntary: $M = 5.66$; $SD = 6.52$) and posttest (mandatory: $M = 2.00$; $SD = 4.93$; voluntary: $M = 4.69$; $SD = 5.30$). PHQ-9 scores as a function of referral type, $F(1,55) = 5.92$, $p = .01$, $\eta^2 = .097$, suggesting a medium effect size. Across pretest and posttest PHQ-9 scores, voluntary referrals scored significantly higher than mandatory referrals. The sample size population suggested that voluntary patients are likely to be depressed compared with mandatory patients. However, overreporting and underreporting are factors that can influence the PHQ scores. Nonetheless, the PHQ posttest showed improvement of the PHQ scores in comparison with the PHQ pretest.

Table 3

Descriptive Statistics of the Individual PHQ-9 Items at Pretest and Posttest

Item	Pretest		Posttest	
	M	*SD*	*M*	*SD*
PHQ-1	0.49	0.85	0.44	0.75
PHQ-2	0.60	0.86	0.53	0.83
PHQ-3	0.58	0.87	0.53	0.76
PHQ-4	0.51	0.78	0.61	0.88
PHQ-5	0.40	0.82	0.46	0.89
PHQ-6	0.65	0.99	0.46	0.80
PHQ-7	0.46	0.85	0.33	0.74
PHQ-8	0.28	0.70	0.25	0.69
PHQ-9	0.16	0.53	0.05	0.29

$N = 57$

Inter-individual comparisons of PHQ-9 items revealed that the mean scores decreased from pretest to posttest, except for question number 5, which increased (see Table 3). Question number 5 is concerning poor appetite or overeating. Nonetheless, the increase in mean scores from the pretest to posttest of question number 5 is not of statistical significance. Of special significance, Item 9, dealing with suicidal ideation, decreased from pretest to posttest, although the difference did not reach statistical significance, $t(56) = 1.63$, $p = .10$, Cohen's $d = .237$ ($CI_{95\%} = .176$ to $.559$). Practical significance suggests that the mean score of Item 9 decreased by nearly one-quarter of one standard deviation from pretest to posttest. None of the demographic characteristics exerted a statistically or practically significant differences on Item 9 pretest and posttest scores.

Discussion of the Findings

The purpose of the DNP project was to develop and implement a PHQ protocol to improve patient outcomes based on current evidence-based articles. The DNP project question sought to determine if the implementation of the PHQ protocol will identify depressed and suicidal adult patients at a counseling center during the four-week implementation phase. The

development and implementation of the PHQ protocol at the practice site was able to identify depressed and suicidal patients. The PHQ protocol was able to successfully identify that 60% of the sample population were depressed patients, while 10.5% were identified as suicidal. The PHQ-9 was utilized during the implementation phase. However, the PHQ-2 was not utilized due to the request of one of the counseling center's benefactors.

Front Desk Personnel

The front desk personnel played a crucial role during the implementation phase by providing all adult patients with PHQ forms. The front desk personnel have no medical knowledge. The PPT slides and one-page workflow algorithm were provided to the front desk personnel to educate them concerning the significance of the PHQ protocol. Front desk personnel's knowledge on PHQ was increased by 30.95% based on the posttest scores. The increase of the staff knowledge posttest scores are indicative that the education and trainings that were received by the front desk personnel during the implementation phase were successful. The front desk personnel were compliant and receptive in implementing the PHQ protocol.

Therapists

Therapists also played an essential role during the implementation phase. The therapists were educated and trained on the utilization of the PHQ protocol through PPT slides and a one-page algorithm on PHQ. The therapists evaluated the PHQ scores and provided the appropriate interventions based on the PHQ protocol. The practice site is a counseling center that providers counseling sessions to all patients. Therefore, all the patients have received counseling sessions from the therapists during the second week of implementation, which is the week after the pre PHQ and the week before the post PHQ. The numbers of counseling sessions that patients have received between the pre and post PHQ scores were not able to be determined. However,

therapists were instructed to render appropriate interventions to the patients based on the PHQ protocol.

PHQ scores from 0-9 required a watch and wait approach, while scores ≥ 10 are considered positive for depression (Carey et al., 2016). Moderate depression (scores between 10-14) requires watch and wait approach, psychotherapy, and/or pharmacotherapy (Hermens et al., 2014; Van der Zwaan et al., 2016; Volker et al., 2016). Moderately severe depression (scores between 15-19) warrants psychotherapy, and/or pharmacotherapy (Hermens et al., 2014; Van der Zwaan et al., 2016; Volker et al., 2016). Severe depression (scores >20) warrants psychotherapy and pharmacotherapy, consideration for inpatient admission, and assess for safety and suicidal ideation (Hermens et al., 2014; Van der Zwaan et al., 2016; Volker et al., 2016).

PHQ Question #5

The pre and post PHQ questions from numbers 1 to number 9 were analyzed. The PHQ questions from 1-9 decreased from the pre to the post PHQ scores, with the exception of number 5. PHQ question #5 is concerning poor appetite or overeating. The PHQ question # 5 is the only PHQ question that increased in score based on the total sample population of both men and women. However, a majority of the sample size were women (62.3%). The increase in question #5 may be due to the majority of the sample size were women. According to Silverstein et al. (2013), depressed women are likely to experience somatic symptoms such as eating disorders, poor body image, headache, insomnia and fatigue (Silverstein et al., 2013). The association of improvement in depression and worsening of appetite either poor appetite or overeating should be further investigated.

PHQ-2

The DNP project recommended the two-step process of utilizing the PHQ-2 initially then

the PHQ-9 if the patient tested positive for the PHQ-2. A score of greater than 2 on the PHQ-2 is considered positive for depression. The PHQ-2 is the first two questions of the PHQ-9 asking if the patients are having little interest or pleasure in doing things and/or if patients feeling down, depressed or hopeless. The counseling center is a non-for-profit organization that receives grants from various public and provide benefactors. One of the benefactors requires the counseling center to utilize the PHQ-9 instead of the PHQ-2. Both PHQ-2 and PHQ-9 have been proven effective on identifying depressed and suicidal patients (Carey et al., 2016; Schuler et al., 2018; Maurer & Darnall, 2012). Nonetheless, the PHQ-2 can discriminate depressed patients who are predominantly experiencing somatic symptoms such as sleeping disturbances (PHQ question #3), fatigue (question #4), appetite changes (question #5) or psychomotor retardation (question #8) (Schuler et al., 2018).

Significance/Implications for Nursing

The DNP project was able to yield three major implications for the nursing profession. First, the PHQ can be used to identify depressed and suicidal patients at a counseling center. Second, the identification of depressed and suicidal patients at a counseling center can produce positive clinical outcomes. Third, serial PHQ-9s can be utilized as a guide for clinical decision making.

PHQ-9 at a Counseling Center

The PHQ was originally developed for primary care settings (El-Den et al., 2018). Since the development of the PHQ, the PHQ has been utilized in various settings and has been translated in various languages (AlHadi et al., 2017). However, the literature review search showed that the PHQ has not been implemented in a counseling center setting. The practice site is a counseling center that cares for various psychiatric disorder including depression. Based on

the findings from this project patients at the counseling center may benefit from having a PHQ protocol.

Identification of Depressed and Suicidal Patients

Untreated or undiagnosed depression can be debilitating, causing a suboptimal quality of life and leading to medical comorbidities and disability ("Depression," 2018). Depression has been associated with various somatic complaints as well as suicidality (Carey et al., 2016; Schuler et al., 2018). The PHQ protocol was able to identify depressed and suicidal patients. The World Health Organization (WHO) reported that depression is the primary reason for disability in the world ("Depression," 2018). Thus, the PHQ protocol can ameliorate patients' quality of life and prevent suicide.

Better Decision Making with the PHQ Protocol

The stakeholders of the counseling center were educated and trained concerning the paramount significance of the PHQ protocol. The major stakeholders of the counseling center that evaluates the patients' PHQ scores are the therapists and psychiatric providers who are considered clinicians at the counseling center. Clinicians can detect depression promptly and provide the appropriate interventions to the patients to improve the patients' clinical outcomes and even save patients' lives (Loeb et al., 2015). The clinician can utilize patients' initial PHQ scores as baseline and serial PHQ scores can be compared with the initial or previous PHQ scores to measure patients' progress or decline. The efficacy of psychopharmacological or psychotherapy interventions can be measured by the PHQ scores (Loeb et al., 2015).

Limitations

Limitations of the DNP project were identified during the implementation phase. The first limitation is the small sample size of the DNP project. A total of 57 charts were reviewed

but only 33 charts indicated positive scores on the PHQ-9; the rest of the charts had no indications of depression. Positive scores on the PHQ-9 are scores ≥ 1. A small sample size may affect the quality of the results and the validity and generalizability of the results may be in question due to the small sample size (Vasileiou, Barnett, Thorpe, & Young, 2018). A small sample size may not have sufficient data to produce a strong statistical power which discriminates false positives and false negatives (Vasileiou et al., 2018). The DNP project was able to identify depressed and suicidal patients based on the pre and post PHQ-9 results, but the successful identification of depressed and suicidal patients may not be a representative of the population due to the small sample size. Moreover, small sample size data can be easier skewed (Pallant, 2016).

The second limitation is the Corona Virus Disease of 2019 (COVID-19). The DNP project implementation occurred during the unprecedent COVID-19 pandemic. The counseling center experienced a significant decrease of new and existing patients as well as voluntary and mandatory patients. COVID-19 may have altered the types of patients (i.e., new versus existing and voluntary versus mandatory) that the counseling center would normally treat. The results of the QI study may not reflect actual population of the counseling center during non-pandemic times.

The third limitation is the DNP project implementation length of time. The implementation phase was conducted over a four-week time frame. The majority of depressed and suicidal patients have co-occurring psychiatric and medical conditions that complicate the treatment for the patients. The results of a four-week implementation phase may not be sufficient time to see remissions from depression, especially for patients who are suffering from co-occurring conditions. According to the APA, patients will have positive responses between

15 to 20 counseling sessions ("How Long," n.d.). Some therapists conduct 20-30 counseling sessions to achieve full symptomatology remission ("How Long," n.d.). Complications of co-occurring health conditions may require longer counseling sessions, such as more than 30 session over a 12-18 months' time frame ("How Long," n.d.). Similarly, the efficacy of a prescription for antidepressants take an average of between 4-6 weeks (Stahl, 2014). Based on a Sequenced Treatment Alternatives to Relieve Depression (STAR*D) study, depressed patients may not obtain full remission from pharmacological interventions between 12-14 weeks ("Sequenced," n.d.). STAR*D study is one of the largest studies conducted by the National Institute of Mental Health to investigate the response of depressed patients from antidepressants and involved 4,041 depressed patients, ages 18-75 years old located at 41 different clinical sites across the U.S. ("Sequenced," n.d.).

Dissemination

The educational materials that were developed during this DNP project were shared with all the stakeholders at the counseling center during the staff meetings. The PPT slides on PHQ was presented several times during staff meetings. Therapists were given a one-page algorithm on PHQ as a daily guide. Likewise, the front desk personnel were also given a one-page workflow algorithm for daily use. The final DNP project, including PPT slides on PHQ, one-page workflow algorithm for the front desk personnel, one-page algorithm on PHQ for the therapists, and the statistical data results will be presented to Touro University's faculty staff and students in Nevada on June 18, 2020 as part of the DNP program requirements. The final DNP project version of the will be uploaded to the Doctor of Nursing Practice Repository. Furthermore. The DNP project manuscript will be submitted to the Journal of the American

Psychiatric Nurses Association. Healthcare professionals specifically psychiatric healthcare professionals may benefit from the results of this DNP project.

Sustainability

New stakeholders, such as newly hired therapists and front desk personnel, will be educated and trained regarding the PHQ protocol. Leadership such as the lead therapists, lead case managers, front desk manager, clinical director for the therapists, assistant clinical director for the therapists, and clinical program director have agreed to implement the PHQ protocol since implementation phase of March 2020. Leadership were in agreement to encourage other stakeholders to implement the PHQ protocol. Therapists were receptive in acknowledging the significance of identifying depressed and suicidal patients by utilizing the PHQ-9. Leadership and other stakeholders recognize the paramount significance of utilizing the PHQ-9 as guide for decision making on depressed and suicidal patients.

Conclusion

The practice site is a counseling center that did not have a protocol on screening for depressed and suicidal patients. The DNP project developed and implemented a PHQ protocol to identify depressed and suicidal patients. The development of the PHQ protocol was based on literature review and implementation process was modeled after Kurt Lewin's Change Theory. Depressed and suicidal patients were identified during the four-week implementation phase. After training the staff members and implementing the PHQ protocol, staff members acknowledged the paramount significance of the PHQ protocol. Immediate interventions can be administered if depression and suicidal ideation are identified early. Prompt identification of depression can ameliorate patients' quality of lives and prompt identification of suicidal ideation can save lives.

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Appendix A

Patient Health Questionnaire-2

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

Little interest or pleasure in doing things.

0 = Not at all

1 = Several days

2 = More than half the days

3 = Nearly every day

Feeling down, depressed, or hopeless

0 = Not at all

1 = Several days

2 = More than half the days

3 = Nearly every day

Total score:_____

If your total score is 2 or less, give your questionnaire to the front desk

If your score is 3 or more, please complete the back page.

*This form was adopted from the patient health questionnaire (PHQ) screeners (www.phqscreeners.com).

Appendix A (Continued)

Patient Health Questionnaire – 9

PATIENT HEALTH QUESTIONNAIRE-9 (PHQ-9)

Over the last 2 weeks, how often have you been bothered by any of the following problems? *(Use "✓" to indicate your answer)*	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 or staying 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 your 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

FOR OFFICE CODING 0 + _____ + _____ + _____

=Total Score: _____

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

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

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Appendix B

Pre and Post Front Desk Personnel Knowledge Survey on PHQ

1. PHQ is primary used to screen for

   a) Anxiety
   b) Bipolar Disorder
   c) Depression and Suicide
   d) Schizophrenia

2. Who are the patients required to fill out the PHQ form? (Select all that applies)

   a) All patients
   b) Pediatric patients younger than 12 years
   c) Adult patients older than 18 years old
   d) Pediatric patients 12 years and older

3. Which of the following actions would front desk staff perform if a patient is having difficulty understanding the questions and refuses to complete the PHQ? (Select all that applies)

   a) Refer the patient to the psychiatric provider
   b) Notify front desk manager
   c) Help the patient fill out the form
   d) Notify therapists

4. Patients receiving counseling should complete the PHQ form.

   a) True
   b) False

5. Patients currently taking antidepressants should complete the PHQ form.

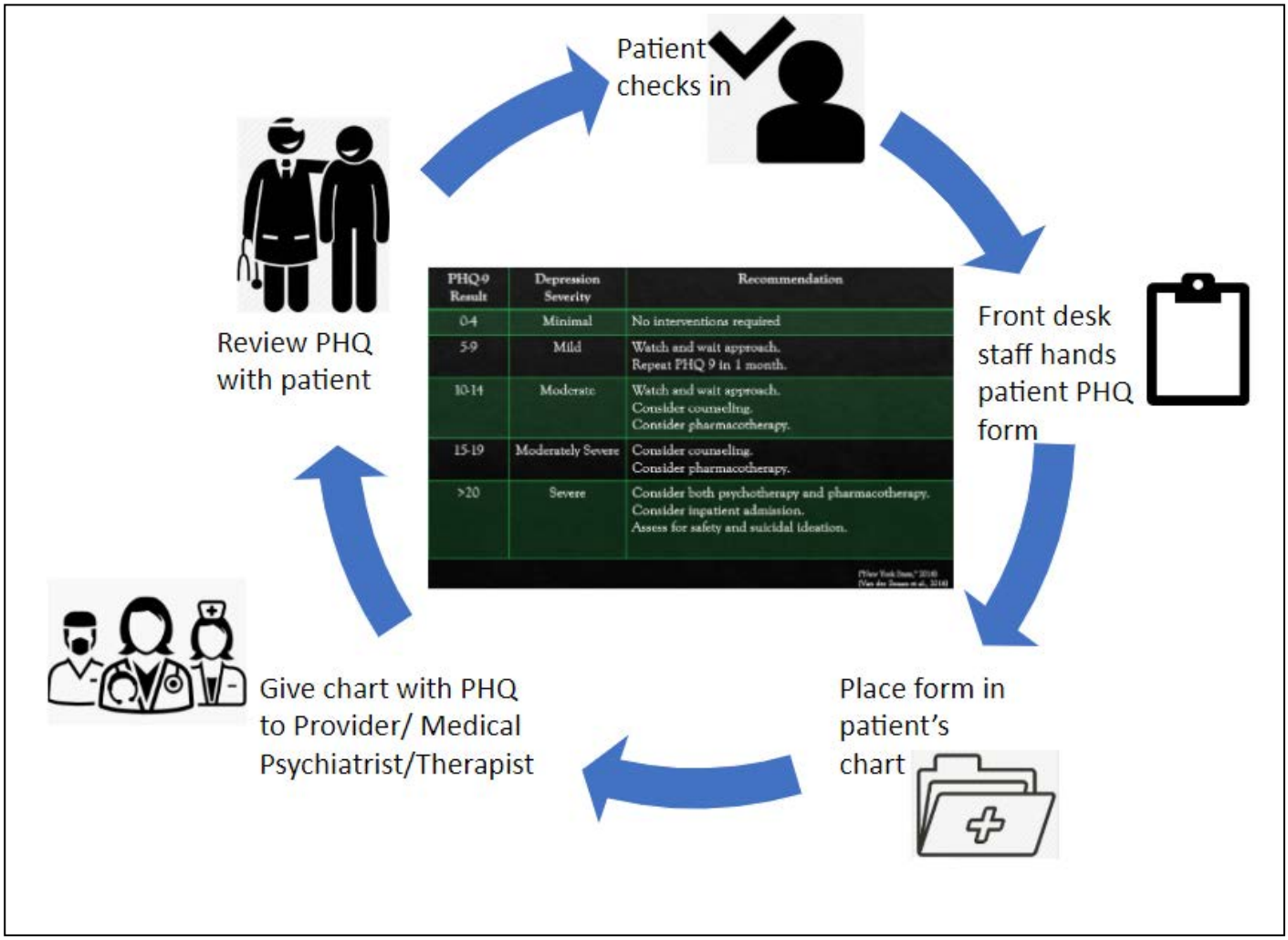
   a) True
   b) False

6. A patient may refuse to complete the PHQ form.

   a) True
   b) False

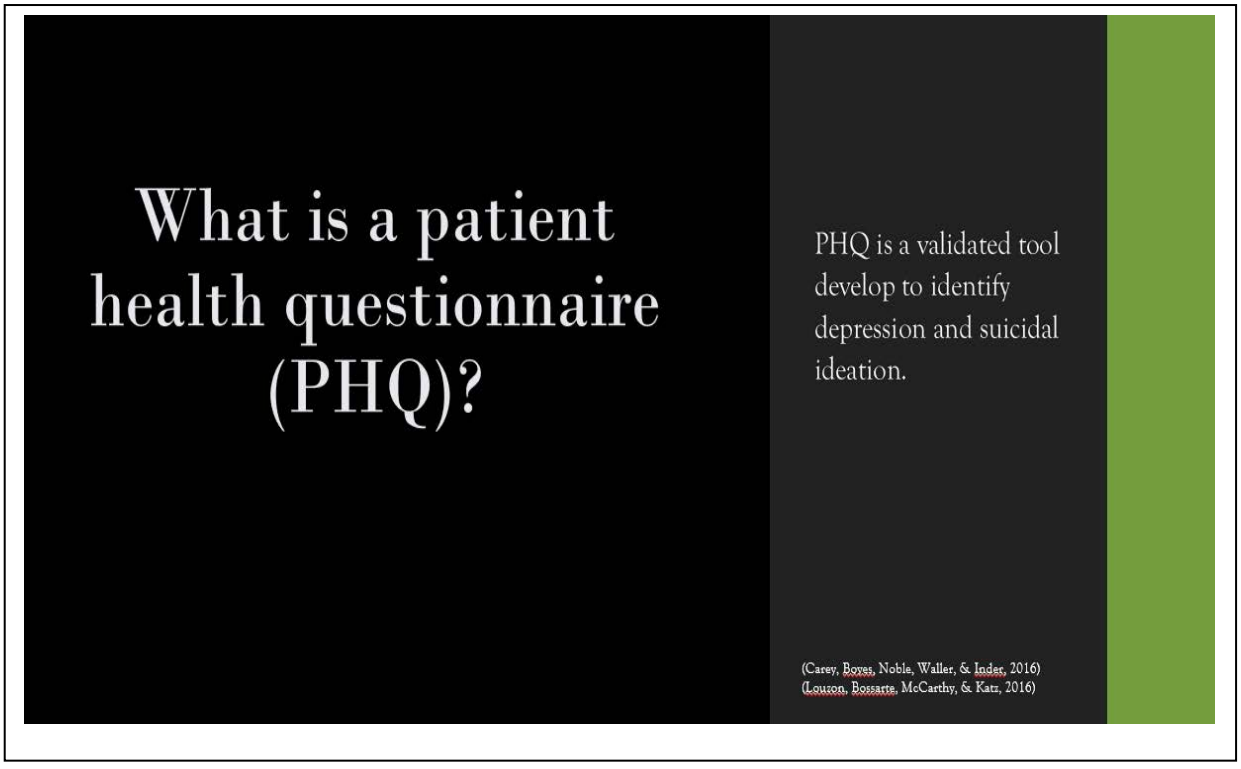
Appendix C

Front Desk Personnel One-Page Workflow Algorithm



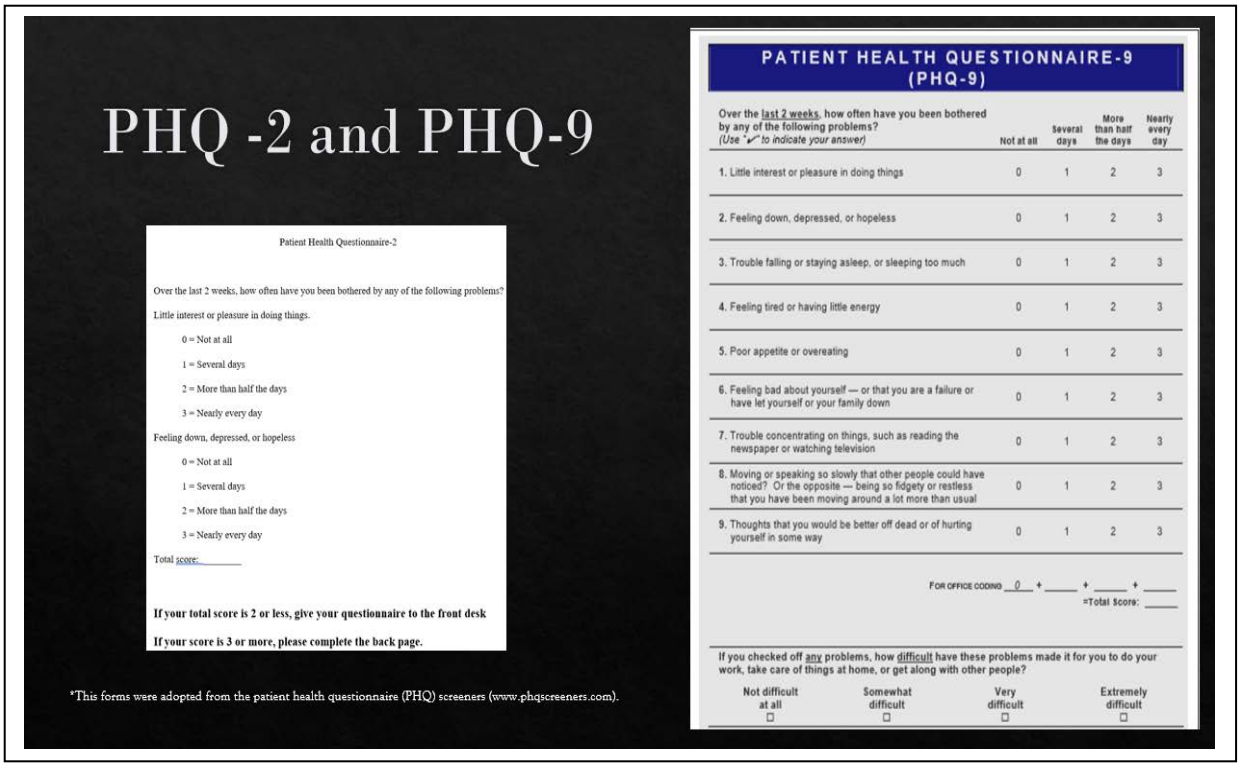
Appendix D

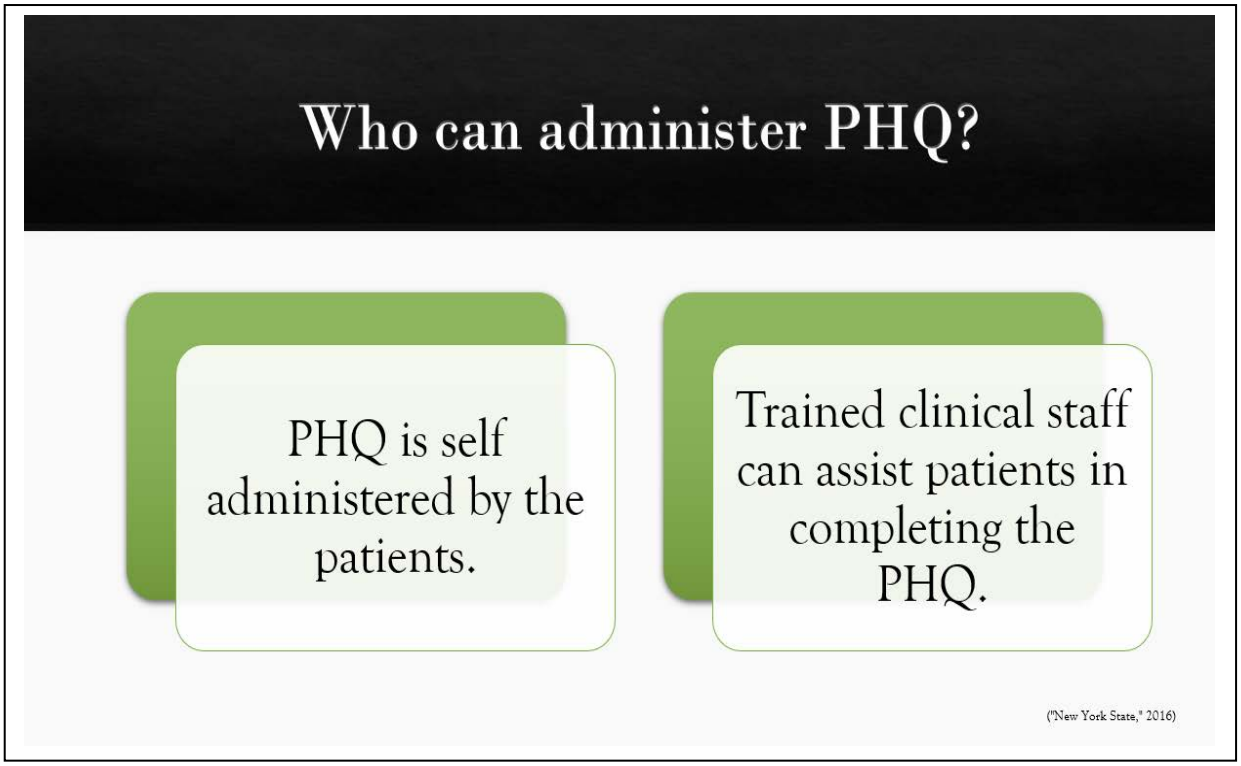
Therapists PowerPoint Presentation on PHQ



Appendix D (Continued)

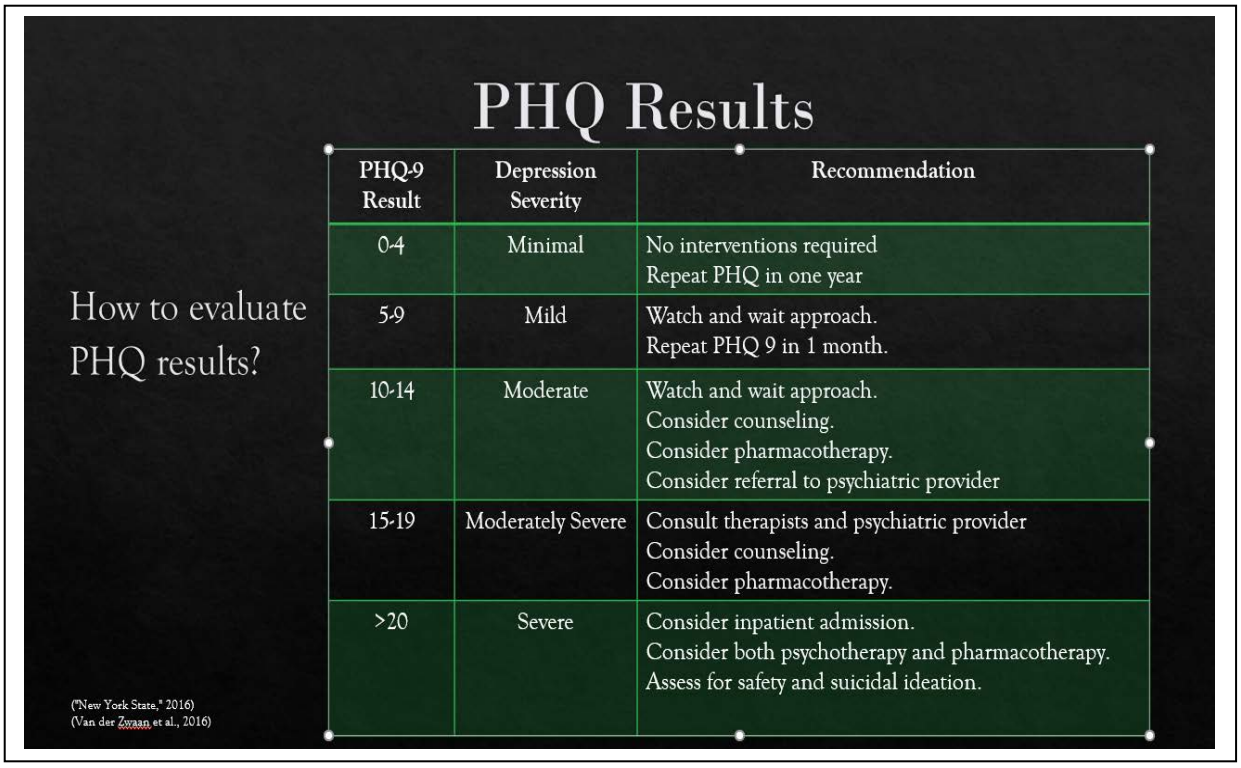
Therapists PowerPoint Presentation on PHQ

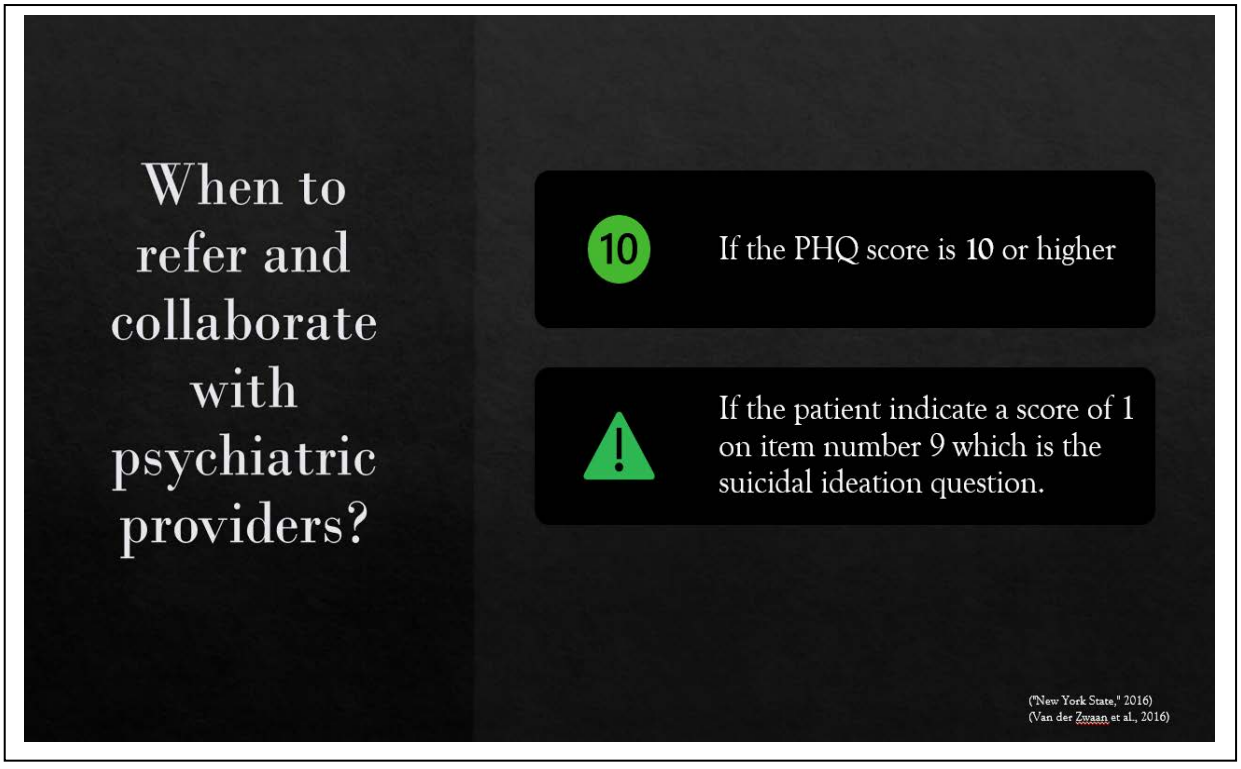




Appendix D (Continued)

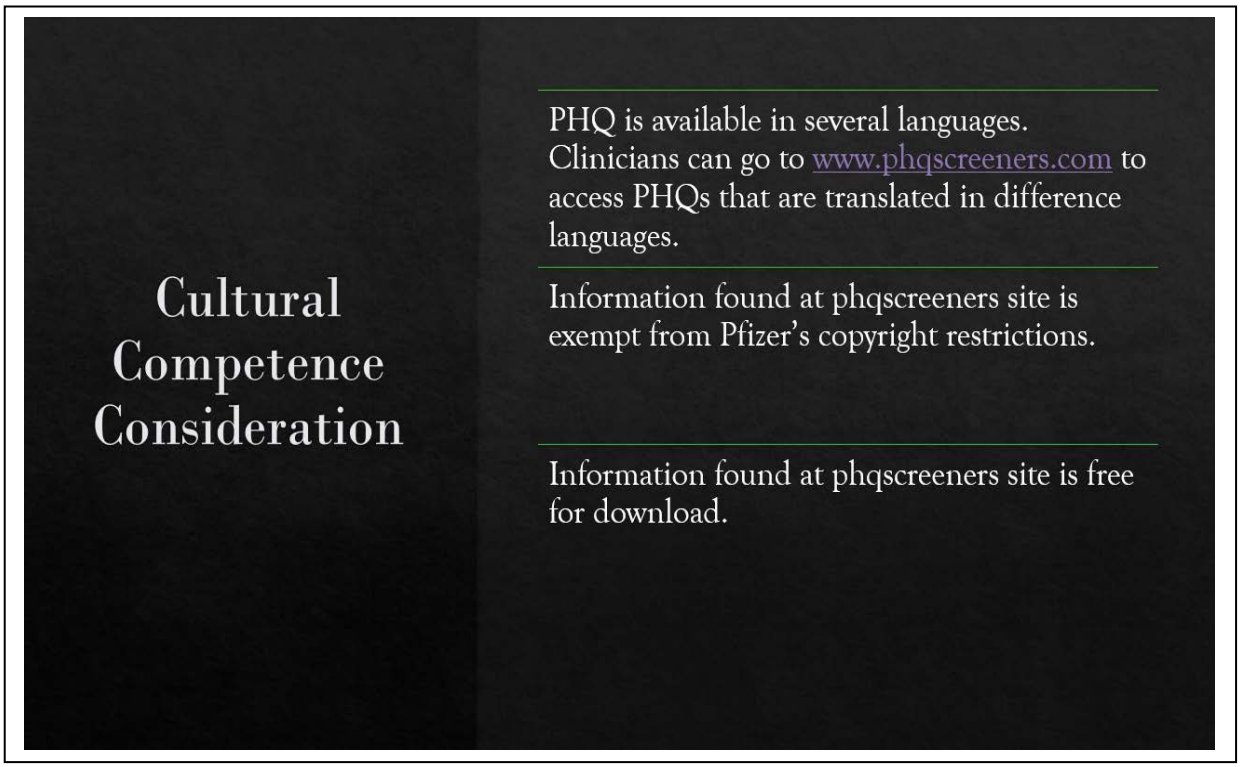
Therapists PowerPoint Presentation on PHQ

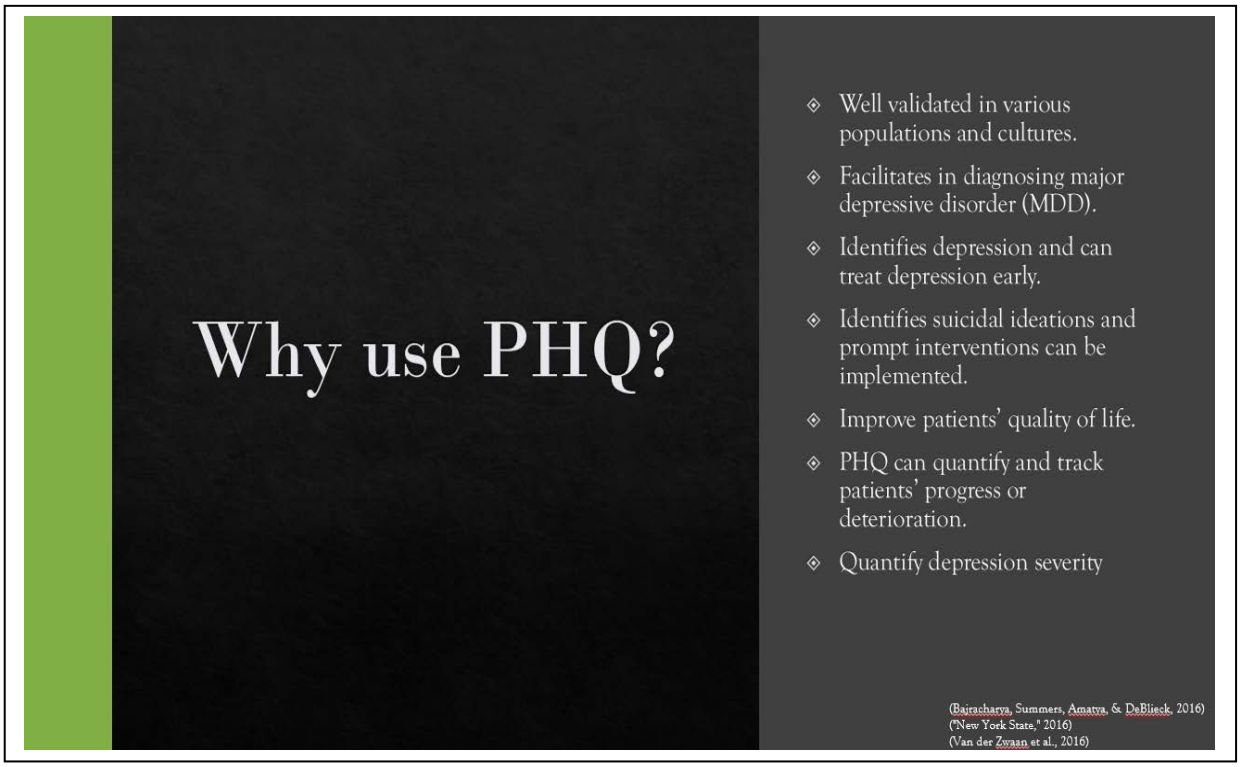




Appendix D (Continued)

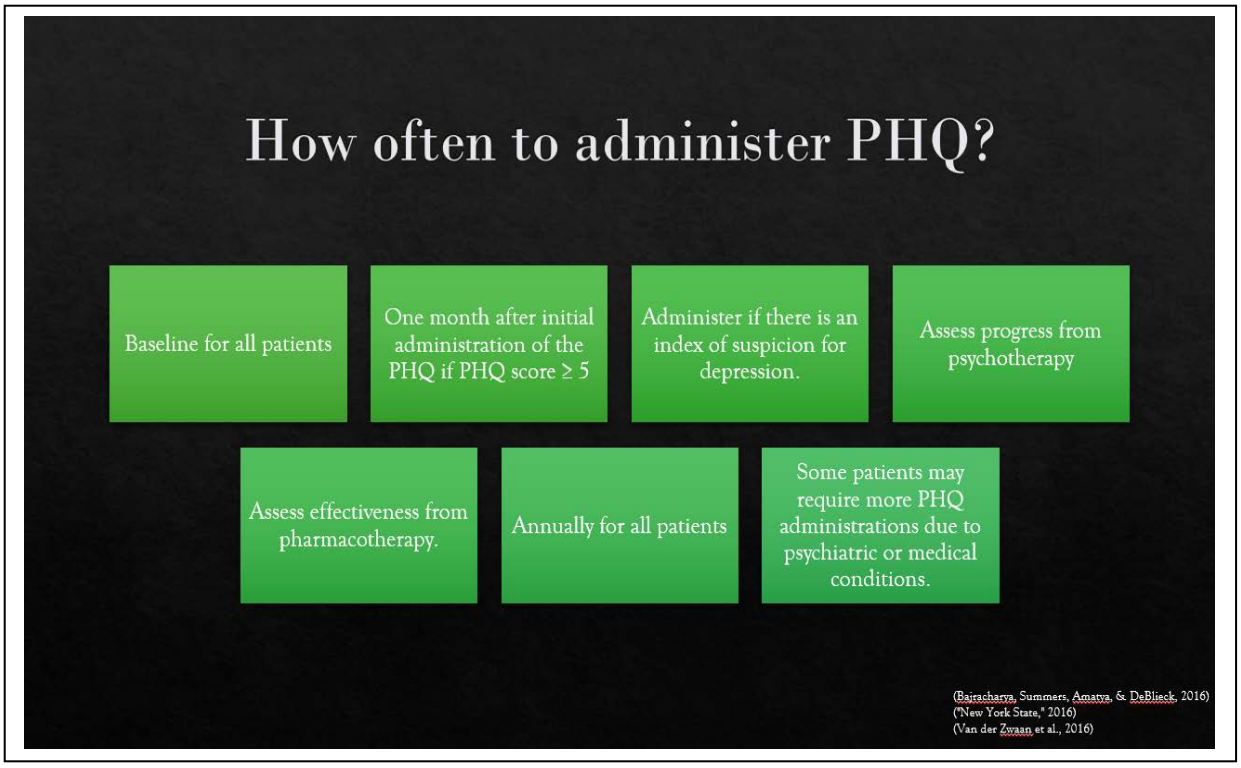
Therapists PowerPoint Presentation on PHQ

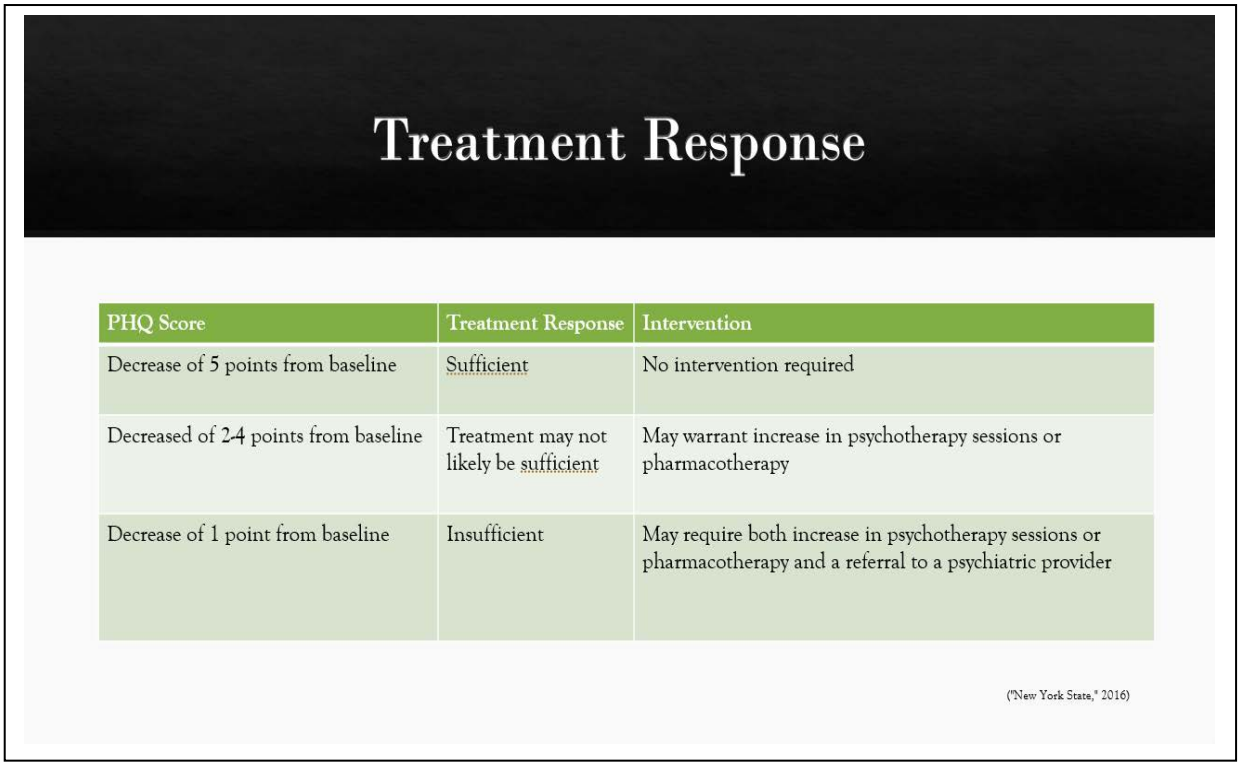




Appendix D (Continued)

Therapists PowerPoint Presentation on PHQ





Appendix D (Continued)

Therapists PowerPoint Presentation on PHQ

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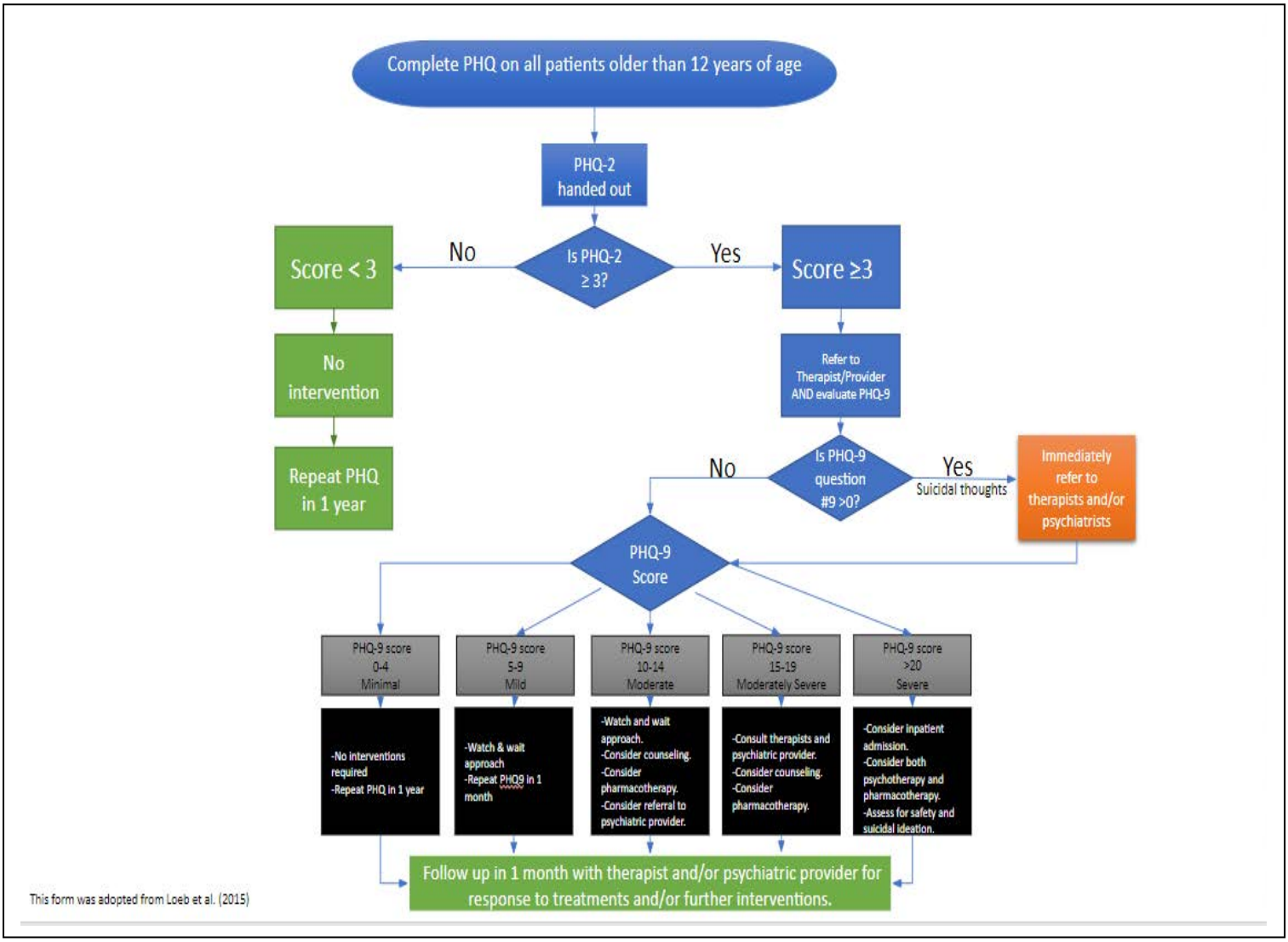
Appendix E

Therapists One-Page Algorithm on PHQ



Appendix F

Letter from CEO Granting Permission for Practice Site

BRIDGE
Counseling Associates
Reaching out to lives...Reaching up with hope

November 25, 2019

To Whom It May Concern:

Billy Leonardo has the permission to implement his DNP project of "Implementation of a Health Questionnaire to Screen for Adult Depressed Individuals at a Counseling Center: A Quality Improvement Project" at Bridge Counseling.

Sincerely,

David Robeck

President/CEO

1640 Alta Drive, #4 • Las Vegas, NV 89106 • Ph (702) 474-6450 • Fax (702) 474-6463 • www.bcalv.com