

The Role of Religion and Technology in the Treatment of Depression

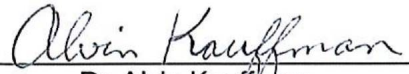
by
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DNP, Spring Arbor University, 2022

Project Submitted in Partial Fulfillment of the
Requirements for the Degree of:

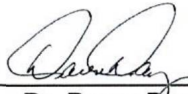
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Acknowledgements

It is only with the blessing of my Creator and Savior that I have been bestowed with the honor of completing this project. I am humbled by the chance to praise you through my work. I would like to thank Dr. Lisa Hengen and Dr. Irene Okinczyc for the guidance and support that has been given throughout this project. Your contributions helped in countless ways. To the owners and staff of my project facility, I am so thankful for your generosity. This project truly wouldn't have been without your generosity. Thank you to my mom, Dr. Debra Green, DNP for offering your wisdom and being a listening ear. To my four children, Mallory, Gracelynn, Jameson, and Deacon, you have sacrificed more than anybody for this achievement. God will work through you to do big things. It is my hope that I continue to demonstrate that all things are possible with hard work, dedication, passion, and God. Lastly, I cannot express my infinite gratitude to my husband, Jason. You have sacrificed so much, picked up my slack, supported me, encouraged me, and have loved me when I am not so lovable. This is just as much an accomplishment of yours as it is of mine.

Abstract

The project regarding religion and technology in the treatment of depression is an intentional investigation of several concepts. Religion and technology have independently been found to be helpful in treatment of depression, a pervasive and major cause of disability in the United States (Apaydin et al., 2018). This evidence-based project (EBP) intends to apply these concepts to a clinical support tool for depression. An application was designed compiling various online religious media resources for personal depression support. A convenience sample of patients from a rural private practice, was collected over three months. A pretest-posttest design was utilized to measure the efficacy of this application in improving mood. The surveys include demographic indicators, categorical questions, and the standardized Patient Health Questionnaire (PHQ-9) for information collection. Descriptive statistics and *t*-tests were used to analyze the data collected for improvement in the subjective experience of depression. This was measured through three objectives: the PHQ-9 score, self-reported improvement in symptoms, and self-reported desire to continue using the application. The difference between the mean PHQ-9 score on the pre-test and post-test is 2.39 ($P=0.0951$), demonstrating some improvement in scores. The two-tailed *t*-test suggests that this difference is not statistically significant. Participants reported that 48% noticed an improvement in their symptoms with use of this application for a month. This falls short of the benchmark of >50%. Participants also reported that 64% of them are likely to continue to use this application. This measure exceeded the benchmark set for success of >50%. The outcomes reflect minimal benefit with the intervention though sample size and study design suggest caution with generalization of these results.

Key terms: Religion, Technology, Depression, Spirituality, Mobile Application, Christianity

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Introduction

Depression has become an increasingly common phenomenon, and a significant cause of morbidity. It is estimated that the prevalence of major depressive disorder (MDD) over the course of a year affects seven percent of the United States population. It is second only to low back pain in leading causes of disability in the United States. What is especially surprising given the prominence of the condition and its contribution to human suffering and disability, is that it is significantly undertreated; with only 51-71% of those suffering with MDD receiving treatment (Apaydin et al., 2018).

While there are likely many contributing factors to the undertreatment of depression, an interesting phenomenon is that various studies demonstrate very low compliance with treatment initiation after screening, even with intervention. Complex interventions like case management, collaborative/integrated care, and preference treatment matching demonstrated the highest initiation rate, which was still of no statistical significance (Moise et al., 2018). The question remains then how to best extend treatment to those suffering with this pervasive condition.

Background and Significance

Depression carries a high rate of co-morbidities and is associated with poor health outcomes. In addition to increased medical costs, depression is costly to society in loss of productivity (Apaydin, 2018). Depression can be effectively screened in an office setting using well-established and rapid tools. The Patient Health Questionnaire (PHQ) is a highly efficient and sensitive example of this (Levis et al., 2020). While screening can be conducted simply and rapidly, there is still a significant gap that occurs between symptomatology and treatment (Moise et al., 2018).

A suggested explanation for this gap is stigma. There is a statistically significant increase in self-stigma between Christians and non-Christians with depression. Evangelical Christians had an even higher self-stigma score than non-evangelicals but both groups were higher than non-Christians. (Pace & McGuire, 2020). What makes this observation more interesting is that

religion has been well established in the literature as having an inverse relationship with depression and suicidality. On the other hand, religious struggles lead to increased depression, distress, and suicidality (Braam & Koenig, 2019).

In addition to the effect that religion/spirituality (R/S) has on depression itself, studies demonstrate that religion, in various capacities, offers a buffer to stressful life events (SLEs) and their effect on depression. Organized religious participation significantly reduces the number of SLEs experienced while non-organized religious activity and intrinsic religion buffered against the effect of the SLEs experienced to a statistically significant degree (Lorenz et al., 2019).

Though the evidence is strong that a relationship exists, studies on religion and depression have been criticized because they fail to acknowledge religion as the complex and multifactorial construct that it is but rather have conducted research on it as though it does not encompass many factors. MDD diagnosis was also associated with contemplation among low-risk individuals, and lower importance of religion or spirituality regardless of risk group. Newer studies suggest that the relationship with religion and depression is complex but overall support previously associated inverse relationships (McClintock et al., 2019).

As previously mentioned, the role of technology in treating depression has been firmly established as positive as well (Apaydin et al., 2016). With this information, the technological advancements of our modern society present an interesting prospect for extending the reach of clinicians in offering support. Many technologies have been developed that aid in depression treatment and have been found to be overwhelmingly helpful; particularly use of mobile applications geared toward depression (Kerst et al., 2018).

Though it has been well established that these interventions can be helpful, conflicting systematic reviews exist on the likelihood of long-term use of these interventions for depression. One did not find sustained use amongst participants (Fleming et al., 2018). A later systematic review contradicts this report in that high levels of participation, significant perceived usefulness

and a perceived benefit by mental health professionals as adjunctive therapy to clinical treatment measures (Kerst et al., 2020).

Problem Statement

In developing this project further, the next step is utilizing the PICO framework to create the clinical question. This consists of several elements to frame the clinical question including: (P) Population; (I) Intervention; (C) Comparison; and (O) Outcome (Moran et al., 2020). These key elements invite the following question: *In adult patients, what is the effect of adding Christian support in a technology-based format for support to their current regimen for at least a month on the severity of depression compared with the severity prior to implementation of the application?*

Population (P)

The population included in this EBP includes people aged eighteen and older. This project was promoted within the population at a rural private practice, however participants that are not a part of this patient population were not excluded from the study.

Intervention (I)

The intervention consists of an application that includes multiple Christian media modalities including; music, podcasts, articles, websites, blogs, sermons, videos, books, Bible verses, and active push notifications. This application is intended to add daily Christian support in a convenient format for patients while addressing the significant self-stigma experienced by Christians privately.

Comparison (C)

The comparison is surveys taken both before use of the application and after using the application for one month. The population is the same sample of patients.

Outcome (O)

The outcome in question regarding this EBP measures the severity of depression in this group as measured by the PHQ-9 after implementing the application for a month.

Review of Literature

The key topics in this literature review for the EBP involve technology and depression, religion and depression, and Christianity and depression. An application that marries the concepts of religion and technology for the purpose of mental health support is at the helm of the project and thus effectively measuring depression severity is also central to this literature review. The purpose of the following section is to provide an overview of the literature review that was conducted, in order to understand the current state of research on the key points of this EBP.

Methodology

Sampling Strategies. An extensive search was conducted of multiple databases including: Cumulative Index to Nursing and Allied Health Literature (CINAHL) Complete, Cochrane Library, MEDLINE with full text, Nursing and Allied Health Source, Ovid, and PubMed on April 15, 2021. The initial search included the following terms: religion AND/OR depression; religion AND/OR mental health; spirituality AND/OR depression; spirituality AND/OR mental health; technology AND/OR depression; technology AND/OR mental health; mobile application AND/OR depression; mobile application AND/OR mental health; Christianity AND/OR depression; Christianity AND/OR mental health; PHQ-9 AND/OR depression; and depression screening tools. The initial search was limited to studies conducted within the past five years, that are available in full-text, that are published in English, and that are peer-reviewed, scholarly journals. See Appendix D for a flow chart on the sampling strategies.

Inclusion/Exclusion Criteria. Criteria applied after the initial search started with scanning titles and abstracts to eliminate studies that were not relevant to the clinical question. Articles were eliminated if the subjects were too specialized to be applicable, based on cultures that are not similar to the United States, or weaknesses in the studies that limited their applicability. Articles that were included in the review demonstrated relevance to the clinical question, the setting, and the targeted population.

Literature Review Findings

Depression is a pervasive problem that has been extensively researched. Screening for depression is strongly suggested and there are tools available that make this quick and simple (Levis et al., 2020). Technological tools have been demonstrated to be promising tools in combating the highly complex difficulties with follow up and treatment (Apaydin et al., 2016; Fleming et al., 2018; Kerst et al., 2020; Moise et al., 2018). Religion similarly, is negatively correlated with major depression and therefore shows promise as a potential support modality for patients suffering with depression (Abu-Raiya et al., 2016; Braam & Koenig, 2019; Lorenz et al., 2019 & McClintock et al., 2019). The following section details the findings of each phenomenon reviewed in detail.

Effective Screening and Treatment of Depression. Depression can be effectively screened in an office setting using well-established and rapid tools. An example of this type of tool is the PHQ. There are variations of this particular instrument and findings within a meta-analysis of the literature suggest that this can be conducted fairly effectively with two questions only (PHQ-2) with reasonable sensitivity. This meta-analysis included 44 studies that involved 10,627 participants. The studies used semi-structured clinical interviews of the PHQ-9. The results demonstrated that the sensitivity and specificity of the PHQ-2 at score 2 or greater was high but that increasing the threshold to 3 or greater reduces sensitivity and increases specificity. Following the positive PHQ-2 with a PHQ-9 did not affect the sensitivity of the PHQ-9 but did reduce the number of participants that needed to continue on to the PHQ-9 by 57 percent (Levis et al., 2020).

While screening can be conducted simply and rapidly, there is still a significant gap that occurs between symptomatology and treatment and various studies seek to understand this phenomenon. A systematic review was conducted on a variety of interventions directed towards increasing compliance with treatment initiation for depression. The interventions included case management, collaborative/integrated care, cultural tailoring, education, motivation, motivation

and reminders, motivation and cultural tailoring, and treatment preference matching.. The sample size is relatively low and only included 14 studies of which one was fairly low quality and flaws were found in several others. All studies demonstrated very low compliance with treatment initiation regardless of intervention. Complex interventions like case management, collaborative/integrated care, and preference treatment matching demonstrated the highest initiation rate, which was still of no statistical significance (Moise et al., 2018).

A survey conducted on a sample of 331 adults recruited from an online forum used the PHQ-9, the self-stigma of depression scale (SSDS) to better clarify an understanding of variables that might stigmatize seeking treatment for depression. The study demonstrates a statistically significant increase in self-stigma between Christians and non-Christians with depression. Evangelical Christians had an even higher self-stigma score than non-evangelicals but both groups were higher than non-Christians. The tools utilized are standardized and both enjoy satisfactory construct validity, internal consistency and test–retest reliability but the sampling method threatens the external validity to some degree as the participant behavior may not be motivated by accuracy, rather completion to obtain reward. Regardless, this study poses interesting insight into a population that may benefit from outreach (Pace & McGuire, 2020).

The Relationship of Religion and Depression. Religion has been well established in the literature as having an inverse relationship with depression and suicidality. On the other hand, religious struggles lead to increased depression, distress, and suicidality. A recent systematic review revisited the topic by reviewing 152 prospective studies on the various variables of spirituality and religion and their effect on depression. About 49% of the studies reviewed demonstrated a significant positive correlation between religion/spirituality (R/S) and depression. In addition, 41% of the studies demonstrated a less significant positive correlation between R/S and depression. Ten percent of the studies actually demonstrated either a negative correlation or mixed results. In addition, an interesting correlation between religious struggle was demonstrated to contribute to more depression (Braam & Koenig, 2019). This

review demonstrated variability in the quality of studies but the results largely support that an inverse relationship exists.

In addition to the effect that R/S has on depression itself, a cross-sectional study with a longitudinal analysis investigated the relationship between religion in the face of stressful life events and how it affects depression symptoms over six months. The sample was collected from liaison psychiatry referrals from three Dublin area hospitals and all secured diagnoses from the psychiatrists with depressive episodes or adjustment disorder. There were 348 patients that initially completed the questionnaires and 132 who followed up in six months. This study used high-quality standardized tools including the List of Threatening Experiences (LTE), Beck Depression Inventory (BDI-II), Oslo three item Social Support Scale (OSS), and the Duke University Religion Index (DUREL). Utilizing hierarchical regression analysis with adjustments for multiple variables including age and gender as well as outliers, this study demonstrated that religion, in various capacities, offers a buffer to stressful life events (SLEs) and their effect on depression. Organized religious participation significantly reduces the number of SLEs experienced while non-organized religious activity and intrinsic religion buffered against the effect of the SLEs experienced to a statistically significant degree (Lorenz et al., 2019).

Though the evidence is strong that a relationship exists, studies on religion and depression have been criticized because they fail to acknowledge religion as the complex and multifactorial construct that it is but rather have conducted research on it as though it does not encompass many factors. A cross-sectional study of 2140 nationally representative American adults attempted to deconstruct the variable and analyze the relationship of each variable of religion including religious struggle, sanctification, support, hope, commitment and their effect on dependent variables subjective well being and psychological distress as well as the moderating relationship between the independent variables. It was found that the modifying relationship between the independent variables of religious struggle and other religious variables was significant in affecting the outcome variables. This means that even if a person is struggling with

religion, the presence of sanctification, support, hope and commitment are protective in preventing reduced well-being and psychological distress. Religion is a multi-faceted construct in which several elements serve to protect (Abu-Raiaya et al., 2016).

Further support of the prospect of multiple protective factors within the construct of religion was established in a more recent study. This study was longitudinal conducted over 35 years with seven collection points. It included three-generations of family members from both low-risk and high-risk depression groups. Demographics, domains of religion/spirituality, and depression diagnoses were analyzed. The depression diagnosis was utilizing DSM-IV criteria with use of licensed psychologists and psychiatrists. A five factor construct, derived from previous studies, was utilized to measure religious constructs. Validated tools were utilized to measure the various constructs. A lower R/S commitment with high-risk individuals was found to be associated with higher diagnosis of major depressive disorder (MDD). MDD diagnosis was also associated with contemplation among low-risk individuals, and lower importance of religion or spirituality regardless of risk group. The results suggest that the relationship with religion and depression is complex but overall support previously associated inverse relationships (McClintock et al., 2019).

The Role of Technology in Depression Treatment. As previously mentioned, the role of technology in treating depression has been firmly established as positive as well. In a recently created evidence map based off of a PROSPERO registered systematic review, 161 prospective randomized-controlled trials were analyzed. These were all based on adult studies regarding technology used outside of the clinical setting to support depression treatment. Most of the studies involved webpages but included a multitude of technological interventions including the use of smartphones and applications. Ninety percent of the studies included found a statistically significant improvement in depression symptoms in users. The studies were all conducted after 2012 and were graded for quality and this was variable but heterogeneity was good based on the high number included (Apaydin et al., 2016).

Though it has been well established that these interventions can be helpful during the trial phase, a systematic review conducted in 2018 sought to investigate if patients continued to use technological support tools for depression outside of the trial phase. The initial search found 970 studies on various technological support tools for depression but these were rigorously vetted to find publicly available tools, outside of the trial period, on which studies regarding use have continued to be conducted. This exclusion criteria narrowed the field to only ten studies on seven publicly available tools. The studies were highly variable in that downloads and/or registrants ranged from 8-40,000 a month, minimal use ranged from 21-88 percent, moderate use ranged from 40 to 60 percent, and sustained use beyond six weeks or completion ranged from 0.5-28.6 percent. This suggests that though tools may be valuable, sustained use of the instrument should not be an expectation (Fleming et al., 2018).

A later systematic review contradicts this report in that high levels of participation, between 70-94 percent up to twelve weeks in participants, were found in most trials. All trials report a decline in PHQ9 or BDI as well as high levels of participation.. User ratings were also indicative of a perceived usefulness in treatment by the patient and demonstrated greater efficacy when used in combination with treatment rather than as a stand-alone treatment. This review isolated smartphone treatment applications targeting depression that measured depression outcomes and are conducted in English. Eleven studies were eventually included after exclusion criteria was applied. This also included a survey of 72 mental health professionals of varied roles, sex, race, and ages. The survey did not serve to provide conclusive or reliable results as the sample size was affected by several surveys being conducted with professionals that it did not aim to target. However, the results also demonstrated a perceived benefit by mental health professionals as adjunctive therapy to clinical treatment measures (Kerst et al., 2020).

Conclusion of Findings

The primary advantage of this literature review is that there is an abundance of support for the EBP. Religion and technology in association with depression have been thoroughly studied, including systematic reviews that demonstrate both constructs can be helpful in the support of depression. This abundant support is reassuring but there are still disadvantages to consider. A disadvantage within the literature is a lack of deconstruction of religion and its many variables. This leads to a lack of understanding of which variables positively affect depression. Though studies have targeted religion as a construct, firm understanding has not been established. Regardless, the literature review that was conducted demonstrates ample support for applying religious support within the construct of technology for the purpose of depression support for this EBP.

Summary

Research has firmly established that screening for depression is important within clinical settings and that this can be done quickly and efficiently (Levis et al., 2020). Despite this, initiating follow-up and treatment within the office setting is a struggle that traditional methods, even those that are complex have not found to be surmountable (Moise et al., 2018). A robust finding that technological interventions including smartphone applications and web-based tools can be supportive to treatment of depression and that users have a high level of initiation and possibly sustained use suggests that this may be a venue that should be more thoroughly explored (Apaydin et al., 2016; Fleming et al., 2018; Kerst et al., 2020). A particular subset of the population with a high level of self-stigma that may prevent the initiation of treatment is the Christian population (Pace & McGuire, 2020).

Interestingly, though Christians are reluctant to acknowledge and seek treatment for depression symptoms, religion is in itself a buffer to stressful life events (Lorenz et al., 2019). Religion in itself in addition to the various components of the construct of religion including religious struggle, sanctification, support, hope, commitment have been found to be inversely related to depression in a variety of studies (Abu-Raiya et al., 2016; Braam & Koenig, 2019;

McClintock et al., 2019). Technology cannot replace the community and personal relationships formulated within church services but it can serve as a modality to provide a continuous connection to religious materials that can potentially offer hope, support, and commitment in the midst of the struggle that is easily accessible and requires no in-office follow up. This may potentially serve to allow outreach while mitigating the effect of self-stigma that many Christians face.

Organizational/Needs Assessment

Evaluating the organization at which a project will take place is essential in successfully implementing a smooth project (Moran et al., 2020). The purpose of this section is to provide an overview of an organizational assessment on the potential project site. The site of interest is a private practice in a rural area in which the project manager has a pre-established employment relationship. In order to structure the organizational assessment, use of the Universal Institutional and Organizational (IOA) Assessment will first be utilized followed by a strengths, weaknesses, opportunities, and threats (SWOT) analysis. This will allow effective evaluation of the internal and external influences unique to this organization (Moran et al., 2020).

Facility Overview

The project facility site was recently established in 2017 by co-founding spouses, one of whom is a physician and the other of whom is a psychologist. The establishment of this practice was a faith calling and was initially being developed as a potential expansion of a local church that the couple attends as an extension of God's love into the community.

Most logistics were managed by the co-owners until they were able to bring an office manager to the team. The practice has expanded to include additional medical and mental health providers but has had struggles with maintaining long-term provider relationships to date so this number has been unstable. Despite this, there is a fairly steady and loyal population of patients. As a part of the Christian perspective that a person in need should never be turned

away, the medical team makes a point of accepting alternative viewpoints including alternative and holistic medicine.

Mission and Vision. The mission statement is, “We are dedicated to serving you and your family by integrating the highest standards of internal medicine, pediatrics, and behavioral health in a warm and friendly environment” (Wellspring, 2017, para 3). Integration of internal medicine and behavioral health is prioritized. High standards of care are also a part of the mission statement, leading me to believe that evidence-based practice is a focus area of the practice as well.

Interprofessional Collaboration. Expanding upon the mission statement, the long-term vision of The project facility site is to provide care that is integrated, person-centered, and community-focused (Wellspring, 2017). Integrated care involves collaboration of medical care and behavioral healthcare under one roof. All members of the staff have daily lunch meetings where patient cases are discussed with members of the team. Educational topics are covered at this meeting and any updates are covered at this time as well.

Patients are cared for as a team while on site as well. This involves individual visits to a medical care provider at times and at other times a visit with behavioral care but often involves visits that incorporate both a medical care provider and a behavioral health professional. Integrated care promotes an environment that highlights the importance of mental health in whole-person health. Person-centered care means “professional expertise that respects your individual needs, experiences, perspectives, and right to make healthcare choices” (Wellspring, 2017).

Culture. The sign at the entrance says “Dear friend, I pray that you may enjoy good health and that all may go well with you, even as your soul is getting along well.” from 3 John 1:2 (New International Version). This verse is representative of the culture of the organization. Staff are expected to treat patients and other staff members with the idea that they are all doing the best they can with what they have. The project facility site aims to meet all patients where

they are regardless of financial status, spiritual status, or physical status and treat them with dignity. Because of the culture, the practice is largely composed of Christian patients though there are some patients who don't identify with religion or who identify with a different set of beliefs. Spiritual assessment and respect of patient beliefs is deemed as an important part of patient care.

Organizational Capacity

The project facility site consists of one physician, one nurse practitioner, three counselors, and will soon include a newly hired dietician and counselor. There is also an officer manager and support staff. For an understanding of the current state, I have provided a rough organizational structure (see Appendix C). All medical providers including physical therapy and the dietician report directly to the medical director. All mental health providers report to the mental health director. The office manager oversees the support staff and reports directly to both founding partners. Non-clinical decisions within the practice are mostly made by the founding partners and the nature of the practice is largely driven by them. This includes financial decisions, program expansion and hiring decisions. Financial decisions are occasionally made in consultation with a bookkeeper that helps with organization of human resources and tax information.

Patient growth and marketing relies largely on word-of-mouth marketing but there are several ways in which the practice engages in community growth. First, there are several outreach events including the offering of sports physicals to local schools. They are also contracted with a local school for behavioral health services and routinely conduct flu shot clinics in the fall. The project facility site also participates in community events such as the annual Fourth of July parade. Lastly, The project facility site is contracted for occupational health with some of the local facilities representing national brands. These strategies have thus far produced steady growth in the patient population and revenues since The project facility site's inception. The community partnerships that exist are also put into place by the founding partners

and relationships are maintained by them as well. The office manager does have a few exceptions for which she is responsible for decision-making. These exceptions include billing and occasionally areas of process management. There are very few standardized processes and very little focus on evidence-based practice in place.

The current capacity of the organization is limited by the number of providers within the organization, which is also limited by the physical capacity of the building.

The medical director has aspirations to be involved in educating clinicians in the future. The founding physician was formerly a professor at a medical school in Tennessee prior to making a move to Michigan and he has remained passionate throughout his career about educating future providers. To further contribute to the supportive environment for education and student accommodation, the founding psychologist is in the midst of pursuing her doctorate in psychology. Despite this emphasis on education, there are very few standardized processes and very little focus on evidence-based practice in place.

Organizational Performance

The patient panel includes 2,657 patients at this time. How many of these patients are active within the medical team is unknown. All patients need to be established as patients on the medical panel regardless of whether they are seeking both medical and mental health services or only mental health services.

The project facility site is in a stable financial position. There is no debt and expenses are paid month-to-month. It is notable to acknowledge that The project facility site has only been in operation for three and a half years at this point in time. Being able to continually expand and pay cash for expansion of the building after enduring the effects of COVID this year would suggest financial stability but it is not a long-standing institution.

External Environment

The external environment influences The project facility site in many ways. Integrated healthcare and patient-centered care have enjoyed growing popularity (American Psychological

Association, 2013). The positive nature in which integrating mental health care with medical care has been received impacts the expectations of patients seeking care from the practice and also impacts growth.

Religious views are also an external factor that could impact the organization. Trends favoring or in disfavor of Christianity could affect the project facility site. In addition, policies regarding religious expression at federal and state levels can affect the mission, culture, and vision of the clinic.

Insurance affects the office in several ways. One way that this can affect this clinic is through participating plans. The project facility site currently enjoys participation from many plans including Aetna, ASR, Blue Cross Blue Shield, Blue Care Network, Cofinity, Golden Rule, McLaren, Medicaid, Medicare, Medishare, Tricare, and United Health Care (Wellspring, 2017). This affects the patients and their ability to seek care within the office. The insurance type also impacts the reimbursement received by the office so the balance of insurance type impacts the revenue the office is able to generate. Insurance premiums, copays, and deductibles are continually changing as well and not usually in a favorable way. This affects the ability of patients to seek care that is affordable. In some ways this could shift care away from the office but because of the transparent cash pay policies, it could shift some cash paying patients towards the practice as well.

Finally, COVID-19 has been a confounding force on businesses, including The project facility site. This will remain a force to be reckoned with for the foreseeable future. It has created obstacles and opportunities in the clinic environment with job loss, loss of insurance, financial difficulties, fear of infection, and struggles with mental health conditions. Michigan reached its highest unemployment rate historically in April at 22.7% unemployment (Buhs, 2020). Many of these workers had employer-sponsored insurance packages that were also lost and though the unemployment rate has since recovered to some degree, it is still not at pre-pandemic levels. In

addition to loss of insurance, unemployment compounded with childcare issues and virtual schooling has created many financial difficulties for middle-class America.

Fear of infection has caused some to avoid seeking care in offices. Recognizing this challenge and the potential implications, insurance is now more generously reimbursing telemedicine and virtual medicine. The fear of infection, social isolation, and financial challenges associated with the pandemic have also increased mental health struggles and have contributed to more need for these services as well (Czeisler et al., 2020).

Facility Readiness Assessment

According to the U.S. Health Department of Health and Human Services Health Resources and Services Administration (HRSA), an organizational readiness assessment is important for a variety of reasons. Having an organizational assessment helps to bond team members, align goals, and ensure more successful implementations of quality improvement measures (n.d.). There are several key measures that help to identify successful change. These include a high level of executive commitment, alignment of the project with organizational goals, clinician commitment, collaborative environment, perceived improvement in the clinical environment/applicability, and interpersonal relationships (HRSA, n.d.) Many of these elements are explored in the above organizational review and will be discussed for their applicability below.

There are both knowledge and problem-focused triggers for a religious support tool for depression treatment. The mission and vision of the organization suggest that integrated care that is patient-centered is of essence to the organization. Integrated care incorporates mental health wellness and a tool to augment care that is voluntary and empowers the patient with self-care aligns with these goals. In addition, the mental health director, who is also a practicing psychologist within the organization reports that a surge of patients has been recognized that are seeking additional support given the stressors of the pandemic this year (personal communication, October 25, 2020). The project facility site was founded on Christian principles

and continues to operate under the guidance of Christian underpinnings so this tool aligns not only with a clinical problem, but the philosophies of care of the organization. The clinical problem is a current priority for the organization given the mental health needs of the patient population.

The clinical team that has been assembled within the organization is ideal in a variety of ways. Participating providers involved in dispersing the tool to potential patients will include two, potentially three mental health providers. Two of these are also active ministers in local churches. The remaining mental health provider is the founding co-owner who is pursuing her doctorate and is very excited to implement this project.

There are two health care providers including myself, the Doctor of Nursing Practice (DNP) student and the physician in the practice. The physician team member is passionate about education and religion and is very motivated to help. By nature as an integrative health center, the environment is collaborative.

Strengths, Weaknesses, Opportunities, Threats Analysis

This project can be safely identified as a priority for the team that has been established. In order to further investigate organizational readiness, a strengths, weaknesses, opportunities, threats (SWOT) assessment has been conducted (see Appendix B).

Strengths. The strengths of the practice in implementing this project are many. The religious focus of the practice means that not only do patients expect to encounter a spiritual assessment but the level of comfort that the providers in the office have with conducting spiritual assessments is very high. The patient base is also very likely to be receptive to this tool given the high balance of Christian clientele. The integrated health environment is also a strength for several reasons. Compared to a traditional clinic, the integrated health environment likely contains a higher mix of those seeking care for mental health conditions and increases the amount of conversations being had regarding mental health. It will also allow collaboration and input from mental health providers regarding the content of the tool and implementation of the

project. The co-owners and providers in the office that have discussed the project to date are very excited about the clinical possibilities for their patients and have a history of implementing evidence-based practice standards as a focus. The communication within the office is stellar between the already collaborative environment that is encouraged and daily meetings. The private practice model encourages close patient-provider relationships. Educational engagement is emphasized as a part of the strategic plan of the organization and appointment times are longer than standard. These qualities are all conducive to the project at hand.

Weaknesses. Potential weaknesses when investigating the project facility site as an organization were identified as well. Though the religious base is also a strength in some ways, the disproportionate Christian patient base will not be representative of the general population in translating the efficacy of this type of a tool into clinical practice on a standard basis. The large pediatric base could limit the sample size in addition to the already small number of providers and small patient base of the clinic in general. Ambitious plans for expansion will also add multiple areas of focus. Rapid change can also be overwhelming and could discourage adding more changes to an already rapidly evolving practice environment. Lack of standardization and focus on quality improvement and evidence-based practice is also a potential weakness in evaluating efficacy of changes.

Opportunities. Among the opportunities identified by the SWOT assessment is pandemic and political stress. This has been a highly unusual year and these particular issues are creating opportunities that The project facility site is well-equipped to offer services for given the integrative environment and mission to expand. The traditional health care system is meeting increased frustration from providers and patients alike with high overhead and costs and very little transparency. This offers opportunity for expansion and stability to The project facility site given their model for price transparency, low overhead, and commitment to cost-consciousness. The growing popularity of integrated health offers additional opportunity while insurance models for reimbursement at this time allow for increased convenience to

patients for virtual and telemedicine services involving integrative health services. In addition to the opportunities provided by the general environment, there is also a significant primary care shortage in the geographic area that provides opportunity for the practice and its stability and mission.

Threats. Not all external influences shed a positive forecast on the stability and mission of The project facility site. Viewpoints on religion could strongly impact patient perception on the practice and willingness to engage. These are being further polarized by the political climate as well. While the pandemic has provided some opportunity for mental health discussions, it has also created fear in seeking primary care and financial instability and insurance loss for patients. This could threaten the stability of the practice as well. Geographic location is a limitation on expansion likely and the geographic location and time of year in which expansion has been planned may lead to construction delays and a prolonged focus on physical expansion or additional cost and frustration.

Summary

The project facility site has some potential limitations as a practice site for implementation of this project. Some of these limitations will require formal acknowledgement within the project report. These include the disproportionately Christian population and likely small sample size as well as the lack of controls in treatment regimen. There are many aspects of this practice that make this an excellent choice, however. The engagement of the providers within the practice and the owners, collaborative environment, adequate opportunity for communication, robust mental health population from which to sample, opportunity for interdisciplinary input into the application and project, lack of barrier to implementation, and emphasis on patient-centered care and empowerment make this practice site appealing.

Project Purpose, Goals and Objectives

The purpose of this project is to explore potential solutions for the problem of extending to treatment when follow-up is elusive, stigma is pervasive, and undertreatment significantly

affects morbidity. A concept known to be negatively associated with depression is religion and spirituality (Braam & Koenig, 2019). In addition, many technologies have been developed that aid in depression treatment and have been found to be overwhelmingly helpful; particularly use of mobile applications geared toward depression (Kerst et al., 2018). . This project aims to combine these modalities into a mobile application with Christian media, supportive of depression for patient use. The overarching outcome goal of the project is to improve the patient's subjective experience of depression utilizing the mobile support tool. There are multiple ways to analyze this outcome using various measures.

Outcome 1a There is a PHQ-9 improvement from pre-survey to post-survey. See Appendix A. Independent t-test will be used to analyze whether there is a statistically significant difference between the PHQ-9 from the pre-survey to the post-survey.

Outcome 1b There is a self-reported improvement in symptoms on the post-survey in greater than half of the respondents. Descriptive statistics will be conducted to discuss the percentage of respondents who report an improvement of symptoms on the post-survey.

Outcome 1c There is a self-reported continued desire to use this application in greater than half of the respondents. Descriptive statistics will be conducted to discuss the percentage of respondents who report a desire to continue the use of this application on the post-survey.

Conceptual and Theoretical Framework

Description of the Framework

The theory of spiritual well-being in illness is an ideal fit for the intended application of this project. Its philosophy is rooted in human beings as physical, psychosocial and also spiritual beings that are capable of transcending their physical and psychosocial selves in pursuit of their higher selves (O'Brien, 2003). It was developed in observance of the vastly different responses of those embattled with illness in regards to their well-being. It strives to explain this spiritual well-being as a result of finding the spiritual meaning in illness. There are several concepts that contribute to an individual finding spiritual meaning illness including: personal faith, religious

contentment, religious practice, social support, severity of illness, and stressful life events (O'Brien, 2003). In this instance, depression is being considered the illness in which spiritual meaning needs to be found.

Attitudes and Behaviors

The theory of spiritual well-being in illness suggests that well-being relies on an interaction between multiple variables. Among these variables are attitudes and behaviors as well as intervening variables. The interaction of these encourages finding meaning in the experience of illness. Attitudes and behaviors are composed of two subcategories: religiosity and spirituality. Spirituality is further categorized into personal faith and spiritual contentment (O'Brien, 2003).

Personal Faith. Further elaboration on personal faith within this theory suggests multiple factors comprise a person's faith. These factors include belief in God's existence, peace in spiritual beliefs, confidence in God's power, strength from faith beliefs, and trust in God's providence (O'Brien, 2003). Being able to access spiritual support at any time that speaks to the patient's experience may encourage greater strength in personal faith by encouraging the healthy coping mechanism of turning to God in times of distress and finding comfort and strength in His embrace. Religion is known to be a complex construct. This fairly defined description of personal faith brings a meaningful definition, but not measurable definition to personal faith (O'Brien, 2003).

Spiritual Contentment. Spiritual contentment can similarly be broken down into multiple factors including: satisfaction with faith, feeling of closeness to God, lack of fear, security in God's love, faithfulness (O'Brien, 2003). Growth in these areas can be encouraged by the continuous presence and proximity of religious content. The feeling of security and closeness gained by this continuous proximity would naturally encourage satisfaction and release of worry and in finding God's healing presence, faithfulness will also be encouraged.

Religious Practice. It is seemingly more obvious how this tool might impact this concept. By having a tool that is accessible and targeted to depression, more frequent religious practice will be encouraged and by turning to God and religion, greater comfort and contentment will be found. Religious practice can mean but does not always mean attending a religious service (O'Brien, 2003). Instead, in this instance it means turning to scripture, devotions, worship, and prayer. Though this application cannot encourage aspects like support of the faith community or encouragement of spiritual companions, it can affect other aspects greatly. Recorded sermons and worship songs can encourage affirmation in worship. Habitually turning to worship when in need encourages consolation from prayer and communication with God through religious practices (O'Brien 2003).

Intervening Variables

Intervening variables explore the construct of the environment into which spirituality and religion are introduced. This includes the severity of the illness in addition to external factors (O'Brien, 2003). These external factors are discussed below.

Social Support. The tool doesn't aim to add social support. Social support includes family, friends, and caregivers. This is a variable that cannot be controlled in the clinical environment or otherwise. It is, however, crucial to develop meaningful patient-provider relationships.

Stressful Life Events. This particular variable is once again, not something that can be controlled through this application. Stressful life events come in various forms including, emotional, sociocultural, financial SLEs (O'Brien, 2003). It unfortunately cannot prevent stressful life events, it does aim to perhaps serve as a buffer to stressful life events. All medical, nursing, and psychological treatment will continue to be encouraged as these interventions should be targeted at encouraging social support and lines of defense for stressful life events.

Major Paradigms

There are several paradigms on which this theory is based. These include person, health, environment and nursing. A person is a spiritual being who is capable of either struggling with illness or finding spiritual meaning in illness and finding peace. Whether spiritual meaning is found depends on an interaction of the attitudes, behaviors, and intervening variables (O'Brien, 2003). Health is both physical, mental, and spiritual in nature. In the absence of physical or mental health, the health of an individual hinges largely on the perception of the patient and the meaning that they assign to illness. Maintaining hope and optimism is key to health in the state of chronic disease. The environment is an additional paradigm that is well outlined under the intervening variables. The final paradigm is nursing (O'Brien, 2003). This concept will be discussed in detail regarding clinical application

Clinical Application of Theory

Nursing as the final paradigm neatly ties this theory to the EBP. The role of nursing is to help the patient and their family units experience hope in the face of chronic disease or disability. This can be done by influencing the variables that contribute to spiritual well-being and a variety of roles can be assumed to fulfill this objective including: educator, counselor, patient advocate, a bridge between strained relationships, and a referral agent (O'Brien, 2003).

This paradigm suggests that referral to this application is in fulfillment of the nursing role in finding spiritual well-being in illness and thus in guiding a patient towards health. By connecting a patient with spiritual resources that may guide them to a closer relationship with God, various variables can be affected in a positive way (O'Brien, 2003). The model outlining the theory of spiritual well-being can be viewed in Appendix A.

Methodology

Introduction

Depression has become an increasingly common phenomenon, and a significant cause of morbidity. It is estimated that the prevalence of major depressive disorder (MDD) over the course of a year affects seven percent of the United States population. (Apaydin et al., 2018).

Many technologies have been developed that aid in depression treatment and have been found to be overwhelmingly helpful; particularly use of mobile applications geared toward depression (Kerst et al., 2018). These key elements invite the following question: In patients with diagnosed depression, what is the effect of adding Christian support in a technology-based format for support to the current treatment regimen for at least a month on the severity of depression compared with the severity prior to implementation of the application? The purpose of this section is to outline a detailed plan for testing this question.

Scope

This project aims to create an application that will include no original content of any kind. Instead, this application is essentially a hub of information, making religious materials widely available online easily accessible for patients with depression to provide support. This project will be directed towards English-speaking, Christian, primarily Western culture oriented individuals due to limited scope at this time.

The project was limited to approximately three months from start to finish with a start date of September first. Information on availability of the application was dispensed for two months and to collect information for one additional month to ensure that there was time for patients to utilize the application for at least a month and complete the post-survey. The budget was limited to printed materials that will be handed out within the clinic and use of the AppyPie application builder, as well as SurveyMonkey for the duration of the project.

The pre-survey and post-survey collected demographic information as well as information about current treatment regimen and if there have been any negative mental consequences associated with the COVID-19 pandemic. There will also be one question rating the usefulness of the application for the patient utilizing the Likkert scale. The PHQ-9 will then conclude the survey.

Project Design and Administration

The study design includes a compilation of resources of support and hope for depression. These resources are easily accessible through links within a downloadable mobile application. They include sermons, podcasts, worship, Gospel and contemporary Christian music, scripture passages, and other multimedia resources that have been screened by five mental health and medical providers who are involved in direct patient care. This application was dispensed within a small community-based integrated care clinic by a physician, a nurse practitioner, a psychologist and two social workers to patients with a current or past diagnosis of depression by dispersing written and verbal instructions.

The application was created using the AppyPie website and was made available on Google Play and Apple Store platforms for download. The application collected demographic information through Survey Monkey using a Likkert scale and a PHQ-9 at the onset of use. After one month, a push notification was sent to request that the PHQ-9 and post-survey be completed again. The survey includes questions regarding their perception of the benefit of this tool and a PHQ-9.

Sample

The targeted demographic will be adults over eighteen years old. They will be selected from a convenience sample within the private practice described in the next section. Handouts will be sent to patients with listed email addresses and to patients who meet face-to-face with providers in the office. The population within the office is 2,657 of which $n=1251$ are adults over the age of 18. The target sample size is $n=108$ considering a confidence interval of 90 with a five percent margin of error and a population of 756 adults at the setting. Considering the three month duration of this project, the uncertainty of the active patient population, and the likelihood that not all individuals are affected by depression, a sample size of $n=25$ will be considered successful for this project. Assuming that the population is representative of the United States, 7.1% of these individuals will carry a depression diagnosis making the sample size appropriate (National Institute of Mental Health, 2021).

Setting

This project was conducted at a rural private, integrated health clinic. This clinic is owned by a physician and psychologist who are dedicated Christians and have based the practice off of their faithful dedication to God's purpose in their life. (Wellspring, 2017). They will both be involved as providers in the project as well. The religious tone of the clinic presents some potential considerations for the sample population including that the population may be disproportionately Christian. As previously mentioned, there is a population of approximately 756 adults from which the sample will be taken. There will be five providers including two social workers in addition to this provider and the owners involved in disseminating information regarding the availability of this application to patients.

Tools

After extensively researching available options, this application was created using Appypie.com. It has the functionality to implement surveys and to track utilization of the application by individuals. It also requires very little technological know-how and I was able to build the application and make it available on Android and Apple devices through the App stores. This platform also has the functionality to send out push notifications to users to remind them to complete the survey prior to collecting information and can make the information available in multiple languages as well (Appypie, 2021). The application was built utilizing sources gathered through input from pastors, providers, psychologists, and Christian friends of varying cultures. The limiting criteria is that the content is free, can be easily accessed by a link with the internet, is rooted in the Word of God, and has a message that is specific to depression or suffering and the role of God. The application includes several categories including: scripture; flashcards; blogs; podcasts; sermons and video; books; worship music; articles; websites; and miscellaneous items.

The PHQ-9 was an ideal assessment for measuring improvement in depression in this project for several reasons. It is quick to administer, is reliable on self-administration, and is

accurate and reliable across cultures (McDermott & Blackwell, 2014). Because of the nature of how the survey will be administered, it is very important that reliability has been established without a clinician present for monitoring.

Study Interventions

There are several members of the team but the grand majority of the responsibilities belong to the project administrator. Resources were collected from a variety of resources starting in January of 2021. These were compiled and organized within the application and the surveys were embedded into the application by June 15, 2021. During the June meeting, thirty minutes was reserved to go over the specifics of the project including duties of the providers in the office. I asked that they all test the application and provide feedback for me within a few weeks to ensure that any kinks are worked out prior to launching the application. In the meantime Institutional Review Board (IRB) approval was given July 9, 2021. The approval form is attached in Appendix I.

The project was intended to launch on August first but difficulties in getting the applications published to Google Play and the Apple Store delayed this start date until September 1, 2021. An invitation was sent to patients to participate in the study via email. The form that was sent can be found in Appendix E. Providers began dispensing these handouts in the office as well on September 1, 2021. An email reminder was sent to all providers to remind them of the start date. When a patient accepts an invitation and downloads the application, they will be prompted to consent to participate and to fill out the pretest. They may then use the application at their discretion. They will receive a push notification after a month to fill out a posttest survey. In addition, push notifications were sent every 48-72 hours to keep users engaged. After a month, patients were still allowed use of the application but this is entirely optional.

On October 1, 2021, an email was sent to the listserv extending a final invitation to participate. The study continued until December 1, 2021. Verbal communication with the other

providers regularly and biweekly emails to providers to promote communication. I will follow up on updating the team at the January or February meeting after the statistical analysis has been conducted on the information.

At the conclusion of the project, all of the data and analytics was pulled from the application and SurveyMonkey the account was suspended from the mobile marketplaces to ensure that no data was skewed while the analysis was completed. Colleagues involved in the project were sent a debriefing the day the project concluded as well.

Schedule/Time Management

There are several small demands that will require time regarding this project. A schedule of anticipated time demands has been created for important reminders. The week of June 15, 2021 was the deadline for creating a functional application and handouts to be presented to all staff at the staff meeting. The mental health professionals and the physician in the practice were asked to provide feedback on this application by July 1, 2021. IRB approval was received on July 9, 2021. Due to complications with publishing the application to the public domain, September 1, 2021 was when the project was launched and an email was sent to staff reminding them of the project and inviting questions. Fliers were also distributed to all staff in the office. An email was sent out through the office listserv with the handout attached. This email was repeated one more time on October 1, 2021. From September 1, 2021 until November 30, 2021, three push notifications were sent weekly and an email was sent to staff biweekly to communicate regarding the EBP. Analytics were conducted weekly as well during this time frame. An in depth look at the analytics and surveys on November 1, 2021 led to the decision to cease distribution of additional handouts to give the current participants time to complete their surveys by December 1, 2021 when the project concluded. An email was sent out to staff sharing that the project had concluded and inviting questions, concerns, and input.

Outcome Measures

The application being utilized includes some user analytics but the primary source of information was collected on SurveyMonkey from the pre-survey and post-survey. The analysis will not focus on causal relationships but will instead seek to investigate whether the PHQ-9 scores improved overall and show descriptive statistics regarding the categorical questions and demographics. Graphpad was used to calculate a two-tailed *t*-test in cooperation with my chair and the SurveyMonkey descriptive statistics were utilized to report descriptive statistics on demographic and categorical questions.

Pre-survey

The following information will be collected on the pre-survey (see Appendix F). This is descriptive information about the population engaging in the project and the categorical data will be reported according to SurveyMonkey data. This data will be informative on the sample and if it is representative. The first question on the survey was a question asking the patient to acknowledge that they did receive information on the project and that they consented to participate.

Question Two: Age. The participant's age at the start of the intervention. The answers are grouped into five different categories: 18-35; 36-50; 51-65; Over 65; Prefer not to say or none of these.

Question Three: Gender. The participant's gender has been separated into four categories including: Male; Female; Non-binary; Prefer not to say or none of these.

Question Four: Race/Ethnicity. In order to collect the most accurate data, this was separated into several categories. The categories include the following: Black or African American; Hispanic or Latino; White or non-hispanic; American Indian or Alaskan Native; Asian; Native Hawaiian or Pacific Islander; Other; None of these or prefer not to say.

Question Five: Religion. Religious identification was procured by inviting the participant to identify with one of the following: Agnostic; Atheist; Christian; Buddhist; Jewish; Islam; Spiritual but not religious; I haven't made my mind up yet; In spiritual crisis; Other; or None of these or prefer not to say.

Question Six: Diagnosis of Depression. Participants were asked if they are currently or have ever been diagnosed with depression to which they could respond: Yes; No; I'm not sure; or None of these.

Question Seven: COVID-19. Participants were also asked if COVID-19 had affected their mental health during its course. Participants were invited to answer Yes, No, or the difference was unnoticeable. This question is relevant to the state of current affairs and its significant effect on mental health.

Question Eight: Patient of the Project Facility Site. A potential concern with making this application publicly available is that there might be participants who are not associated with the clinic. To gather information on this potential pitfall, a question was added to the pre-survey regarding if the patient is a patient at the project facility site. Participants were asked to answer this question with a yes or a no.

Question Nine: Medications. Participants were asked whether they are currently on medications for depression. The potential answers were yes and no. This was to gain an understanding of factors that may have positively or negatively affected PHQ-9 scores and the patient's experience with the application.

Post-survey

In addition to the descriptive and demographic information that is being collected on the pre-survey, there are some categorical questions that were collected on the post-survey (see

Appendix H). This information was collected after the patient has been engaged with the application for approximately one month. A description of how these outcomes were analyzed is given in the next section. In addition to the categorical questions, the PHQ-9, attached in Appendix G, was collected on both the pre-survey and post-survey for outcomes measurements.

Question One: Improvement of Mood. The participants were surveyed to determine if they felt that there was any benefit to their mood while using this application and were given the following categories as responses: yes; no; not much if any; none of these or prefer not to say. This is connected to Outcome 1b.

Question Two: Negative Events. To gather data on potentially conflicting circumstances, participants were asked if any stressful or negative events occurred that may have affected their mood negatively during the intervention. They could answer yes, no, or unsure to this question.

Question 3: Continued Use. After considering that the PHQ-9 may not accurately reflect all potential benefits of the application, a question was added to the post-survey to collect information on whether the participant would continue to use an application like this. The potential answers included: yes; probably; probably not; no; or none of these or prefer not to say. This question is an indicator for Outcome 1c.

PHQ-9. The PHQ-9 is a standardized questionnaire that has proven validity in screening for depression. It is a relatively simple and quick clinical tool that has verified accuracy when patients complete the survey independently. This screening tool measures depression severity utilizing a scoring system that ranges continuously in one point increments from zero to twenty-seven. This score will be compared with the score of the PHQ-9 on the post-survey (Apayadin et al., 2018)

Outcomes Used for Goal

The outcome goal of the project is to improve the patient's subjective experience of depression utilizing the mobile support tool. There are multiple ways to analyze this outcome using various measures.

Outcome 1a. There is a PHQ-9 improvement from pre-survey to post-survey. See Appendix A. A two-tailed *t*-test was used to analyze whether there is a statistically significant difference between the PHQ-9 from the pre-survey to the post-survey.

Outcome 1b. There is a self-reported improvement in symptoms on the post-survey in greater than half of the respondents. Descriptive statistics were conducted to discuss the percentage of respondents who report an improvement of symptoms on the post-survey.

Outcome 1c. There is a self-reported continued desire to use this application in greater than half of the respondents. Descriptive statistics were conducted to discuss the percentage of respondents who report a desire to continue the use of this application on the post-survey.

Ethical Considerations

Protected health information must be shielded with the utmost care and respect for confidentiality. In addition, informed consent is essential in maintaining a patient's right to autonomy and protecting vulnerable individuals (Moran et al., 2020). Because this is a human subjects research project, IRB approval was secured through the university prior to implementing this project. The private practice does not have a formal approval process for projects but approval was instead secured through verbal and written briefings on the project details with the Medical Director, Mental Health Director, and Office Manager.

Informed Consent

Participation in this project was entirely voluntary. The flier that provides information on the project was handed out in the office or via email and the patient was not pressured to sign up or participate in any way in the office. Informed consent was obtained through the pre-survey after the patient chose to download the application and participate through their own will. In

addition, the participant could continue to use the application regardless of whether they participated in the survey or not. Proceeding with the survey required explicit acknowledgement that the participant consented to share their information.

Patient Privacy

Patient privacy was protected to the detriment of the project. There were no patient identifiers assigned or required in conducting the surveys or downloading the application. The only potential identifier was the computer Internet Protocol (IP) address. This resets each time a device is turned off so it is not an accurate identifier. Surveys were conducted anonymously. Monitoring of analytics and survey results continuously was done online through secured, password-protected websites. The project manager is the only person with access to the login information to these sites. The results of the anonymous surveys have been stored on a cloud service that is also password protected and secured and will be destroyed after they have been stored for three years. The results of the surveys have only been shared with the chair of the project who collaborated on data analysis using this data. No patient identifiers were shared.

IRB Approval

The university requires IRB approval for all human subjects research. An application was submitted detailing the plans for the EBP in June of 2021 and approval was received on July 9, 2021. A copy of this approval can be referenced in Appendix I

Potential Dilemmas

The risks involved in this particular project were minimal. Participation was voluntary and use of the application did not detract from the patient's current treatment regimen. Liability was a potential concern. In order to address this, there will be information on the flier regarding the application, the consent, and the application regarding how to contact a provider and a disclaimer that the application does not replace treatment to minimize risk to patients. The application also allows for user analytics and push notifications. It was monitored every 48-72 hours and any unusual or increased activity would spur a push notification for a PHQ-9 as well.

Free texting comments were prohibited in order to avoid having somebody erroneously seeking treatment virtually. For any concerns that were communicated to or by staff members, the communication plan included bi-weekly emails and routine verbal communication.

Lastly, copyright is a concern when utilizing sourced materials. Fortunately, this application utilized only links to content available on the internet for public consumption. Hyperlinking does not infringe copyright law because source content will be cited, so no licensing procurement was necessary.

Business Plan

Assumptions

This project plan was made with many assumptions. Access to the patients at the project facility site is assumed. Provider participation in passing out information and their enthusiastic promotion of the EBP is assumed. The successful project also requires the assumption that patients will be enthusiastic about participating, and that this is an application that may benefit depression. Additionally, a required assumption is that AppyPie and SurveyMonkey continue to operate, that the application works as well as hoped, that the analytics work effectively, and that the push notifications are effective.

Risks/Constraints

In conducting this project in a small clinic, there was a risk of not engaging enough participants to effectively monitor twenty-five participants. There was also a risk of user drop-out over the course of a month. Reflecting on the assumptions, functionality of the application is key in attracting users to use the application. If the application doesn't run smoothly, track analytics as expected, effectively use push notifications, or make availability of the application on marketplaces simple, this could have interfered with participation.

Risk Management Plan

To mitigate the risk of securing enough participants, the project had an additional two months built-in to the project window. The project plan was to end the EBP when twenty-five

participants had completed their post-survey. It was originally only intended to run for two months but given this risk, the timeline was extended. In addition, a secondary measure for mitigating this risk was emailing the list of users in the database and extending the invitation to all users, thus extending the reach beyond the patients seen in the office during this time period.

One month is a lengthy time to keep users engaged in a mobile application. The plan was to send out push notifications routinely to keep users engaged. These occurred every 48-72 hours and the notifications will focus on new and engaging content. In case of AppyPie malfunctioning, there was a backup method in place for creating and running the application. This service costs nearly three times the amount that it will cost to run the AppyPie application for six months but if necessary, this service is on standby.

Monitoring Plan

Adherence to the plan was monitored through communication with the team and analytics on the application itself. There was regular verbal communication with individuals on the team and a biweekly email to ensure that regular encouragement was occurring and that reminders to communicate any concerns or questions were given. Any concerns would also be discussed with the owners of the clinic and any changes that occur would be approved with them. All concerns and responses to them were logged.

Staffing Plan

The total staffing needs for this plan were five providers, including three mental health providers and two medical providers including myself. All providers were able to adhere to their normal schedules and no additional time was required. The exception to this will be the project manager who monitored the application every 48-72 hours and sent out push notifications, reprinted materials when needed, sent out emails biweekly with updates on the project, and made time for any concerns that arise. This required an investment of variable amounts of time weekly.

Work Breakdown Structure

The work structure can be broken down into four essential categories with various components. The application and the data are nearly synonymous as the analytics were collected directly from the application and SurveyMonkey which also holds the surveys and consent forms. The data being collected is heavily reliant on team members who see patients face-to-face that communicate critical information. It is imperative that communication does not break down for this purpose. The participants are highly dependent on the team members who are helping to spread the word and who have trusting relationships with patients that may test out the application solely because they trust the provider. In addition, being able to keep the participants engaged is reliant on the application. These work systems are heavily interdependent.

Resources

There are physical resources that were necessary to conduct this project including an Acer Chromebook that was already in ownership by the project manager. In addition, it was necessary to pay for AppyPie in order to create the application. SurveyMonkey was also a necessary expense for two months. Flyers were also printed using the project manager's personal printer with pre-purchased ink and paper. Lastly, there is a time investment necessary from the individuals in the practice, including a thirty minute slot allocated for training and briefing on the project.

Cost Management

The only financial costs for this project were the AppyPie application purchase and the SurveyMonkey upgrade for two months. The cost for AppyPie was sixty-nine dollars monthly and the planned time for this cost is six months. The cost for SurveyMonkey was thirty-nine dollars monthly. This was purchased for two months in order to pull and analyze all of the results. Statistical analysis was adequately conducted for most questions with the purchase of SurveyMonkey. The two-tailed *t*-test was conducted on Graphpad, which is a free website in

collaboration with the project chair. The overall goal for the budget was to stay below \$500 in expenditures.

Cost Analysis

A cost analysis is essential in understanding the financial sustainability of a project. Breaking the costs down categorically is helpful in understanding the cost versus benefit of the interventions in the project (Moran et al., 2020). The following is an analysis of the final budget of the project. The total cost of the project was \$502.00, which is two dollars over the budget that was set.

AppyPie. This website was utilized to build and publish the application. The cost was sixty-nine dollars monthly for six months. The total cost for this resource was \$414.00. The benefits of this countermeasure are: potential improvement in depression; potential reduction of medical costs to the patient; potential increased productivity; ongoing spiritual support; easy build and unlimited changes to application with tech support; and push notification capability.

SurveyMonkey. This tool has many benefits. Among them is the ability to analyze surveys using multiple variables and filters. This tool also created the opportunity to embed the survey into the application seamlessly and protected the privacy of the patients. Surveys within AppyPie require identifiers, which likely would have discouraged participation of users. The cost for this countermeasure was \$39.00 monthly for two months. The total cost for this was seventy-eight dollars.

Forms for Distribution. The cost for distributing forms in the office was nominal. The total cost was ten dollars with the benefit of allowing providers to interact with their patients face-to-face regarding this application. Because patients build trusting relationships with clinicians, this was essential in securing participation.

Summary

There are very few resources necessary to drive this project. Including a risk management plan, staffing plan, communication and monitoring plan, and a work structure is essential to smoothly enact the plan. Financially a plan should be made as well. The cost of the resources is not insignificant. Over a four month project, the cost of material was approximately \$502. This is just over \$125 monthly. Though the cost would improve if the project was run for a longer period of time, the cost is not insubstantial and should be considered in drawing conclusions about sustainability of this project. The labor investment, however, will be relatively low.

Evaluation-Data Analysis and Findings

The evaluation-data analysis allows for identifying, interpreting, and presenting final results (Sylvia & Terhaar, 2018). The following section details a complete evaluation and data analysis for the EBP titled 'The role of religion and technology in treatment of depression'. Population information and descriptive and demographic information will be detailed including how these pertain to the purpose statement and analysis of these factors. The theoretical framework will be discussed pertaining to the project purpose and variables as well.

Overview of the Results

In analyzing the progress of this study, 79 pre-surveys have been collected and 25 post-surveys have been collected. The large drop between pre-survey and post-survey may represent that there are many patients that may not continue with this in the long-term. The results are mixed but it appears that over half of the patients report a benefit in their symptoms. This will be interpreted with great caution because the majority of the participants identify as Christians. In retrospect, launching this project on a larger scale may have yielded more results and may have likely created a more representative sample. This is a small Christian-based clinic and results are likely to be skewed because of the largely Christian population.

Pre-survey

The following information was collected on the pre-survey. This is descriptive information about the population engaging in the project and the categorical data will be reported according to SurveyMonkey data. The first question is the informed consent for the project and 100% of participants (n=79) consented to participation in the project.

Question Two: Age. Of the participants (n=79), 19 reported their age category as 18 to 35. There were 39 participants aged 36-50. There were 18 participants who reported their age as 51-65 and only three participants over the age of 65. No participants declined to answer the question. This is a fairly regular distribution but under-representation of the participants over the age of 65 is limiting to general applicability.

Question Three: Gender. Gender identification amongst participants include 16 males and 69 females (n=79). None of the participants identified as non-binary or prefer not to say or none of these. Representation from all gender groups is essential. This particular sample is limited regarding non-female representation.

Question Four: Race/Ethnicity. Despite the variety of choices available on the survey, race/ethnicity identification came back in three categories only. There are two participants that identify as Black or African American, three that identify as Hispanic or Latino, and an overwhelming majority of the participants identified as White or non-hispanic; 74 specifically. None of the participants identified as the following: American Indian or Alaskan Native; Asian; Native Hawaiian or Pacific Islander; Other; None of these or prefer not to say. The limited representation also limits the generalizability of this information.

Question Five: Religion. The religious identification within this group of participants (n=79) is largely homogenous. Approximately 96.2% identify as Christians of any denomination. One participant identified as Agnostic, one identified as Spiritual but not religious and one

identified as Other. None of the participants identified as the following: Atheist; Buddhist; Jewish; Islam; I haven't made my mind up yet; In spiritual crisis; or None of these or prefer not to say. While a Christian support tool is more likely to succeed with Christian participants, this is an incredibly homogenous group and diversifying would be in the best interest of the research.

Question Six: Diagnosis of Depression. Approximately 54.43% of participants (n=73) report that they have been diagnosed with depression now or in the past. About 37.97% of participants denied the same question while 5.06% of these patients are not sure if they have been diagnosed with depression in the past or currently and 2.53% do not agree with any of these statements or prefer not to say.

Question Seven: COVID-19. Participants were also asked if the events surrounding COVID-19 over the past year had affected their mental health during its course. The participants were divided as 52 participants (n=79) said yes, 16 of them said no, and 11 of them said that it hasn't been noticeable one way or the other. This is an ongoing pandemic with widespread social effects and is a confounding factor to consider with this EBP.

Question Eight: Patient of the Project Facility Site. Most participants (n=79) in the survey, approximately 84.81%, were patients at the project facility site. It is significant to note that 15.19% of these participants were not patients at the facility and therefore were informed of the application in a different way. Presumably, these participants were informed by word of mouth. Regardless, the consent form was available on the application so all participants were capable of informed consent and participation.

Question Nine: Medications. Participants were asked whether they are currently on medications for depression. Approximately 50 of the participants (n=79) responded that they are not on medications while 27 reported that they are on medications and two participants aren't sure whether they are on medications for depression or not. This is an interesting contrast to the

43 patients who reported that they have been diagnosed with depression now or in the past. Many inferences can be made but it begs the question of whether the participants are currently recovered from their depression, whether they are currently avoiding medication, using alternative treatments, or whether they are being undertreated.

Post-survey

The post-survey contains fewer questions, as demographics have been collected on the pre-survey. Rather, the post-survey focuses on outcomes and patient perceptions regarding the application. There was a significant drop-out rate from pre-survey to post-survey. The sample size for the post-survey is $n=25$. A certain drop-out rate is expected, particularly in the population afflicted with depression as it has already been demonstrated in literature that lack of follow-up on treatment is a significant problem with this population (Fleming et al., 2018). Regardless of whether this is representative of the population or the application, it does present challenges in interpretation.

Question One: Improvement of Mood. The participants were divided on whether they felt that there was any benefit to their mood while using this application. Five participants ($n=25$) said that there was no benefit, five said none of these or preferred not to say, three said not much if any and 12 said that they did note a benefit. This means that 48% of participants had an improvement in mood. This figure does not hit the benchmark set by outcome 1a. It is significant to note however, that it comes very close.

Question Two: Negative Events. For 70.83% of the participants in the survey ($n=25$), there were no significant events that occurred that may have negatively impacted their mood while using this application. The opposite is true for the 29.17% of participants who reported that they did have a significant negative event that occurred during this time. In considering the

results of the project, it is important to understand whether variables could have potentially affected the outcomes.

Question Three: Continued Use. Ten participants (n=25) reported that they would use a similar application on an ongoing basis while five of them reported that they would not. Six more reported that they probably would use a similar application on an ongoing basis and two said they probably would not and two more reported that they do not agree with any of these or prefer not to say. The benchmark of greater than 50% was achieved by the 64% of participants who reported that they would likely use an application like this on an ongoing basis.

PHQ-9. The PHQ-9 serves as the standardized test to compare the pre-test and the post test for this study. The pre-test PHQ-9 had a mean score of 7.61 with a standard deviation (SD) of 4.21, a standard error of mean (SEM) of 0.88. The post-test PHQ-9 had a mean score of 5.22 with SD of 5.55, and SEM of 1.16. The difference in the mean between the pre-test and post-test is 2.39. The 95% confidence interval of this difference: from -0.45 to 5.24. The two-tailed *t*-test ($P = 0.0951$) demonstrated no statistically significant difference between the pre-test and post-test.

Outcomes Used For Goal

The outcome goal of the project is to improve the patient's subjective experience of depression utilizing the mobile support tool. There are multiple ways to analyze this outcome using various measures.

Outcome 1a. There is a PHQ-9 improvement from pre-survey to post-survey regarding the mean. The goal for this outcome was to improve the PHQ-9 score from pre-survey to post-survey This improved by 2.39 points. However the difference isn't statistically significant ($P = 0.0951$).

Outcome 1b. There is a self-reported improvement in symptoms on the post-survey in only 48% of the respondents (n=25). This falls just short of the goal of greater than half of the participants reporting improvements in their mood with use of this application

Outcome 1c. There is a self-reported continued desire to use this application in 64% of the participants (n=25). This is in contrast to the 36% that report that they would not continue to use this application on an ongoing basis. The goal of greater than 50% of participants reporting a desire to continue to use the application was achieved for this outcome.

Discussion

Interpretation of the above results would suggest that the intervention was mildly impactful. It fulfilled one of the three potential outcomes measuring improvement in the subjective experience of depression. The PHQ-9 did not show a statistically significant improvement between the mean of the pre-survey and post-survey group. The number of respondents who self-reported an improvement in symptoms on the post-survey fell just short of the goal of half of the group. However, the goal was exceeded when respondents were asked whether they would continue to use this application.

The demographic section suggests that these results should be interpreted with caution. The sample size is small and is also not representative of the general population. The sample was overwhelmingly female, caucasian or non-Hispanic and Christian. The age distribution is more representative but still skews towards the younger population and likely does not represent the 65 and older population and their perception of this tool. In addition, for 29.13% of the group, there was a significant negative event that occurred while using this tool that could have affected outcomes. For 65.82% of the participants, the ongoing COVID-19 pandemic and the events surrounding it have affected their mood in a negative way as well. Though it cannot be presumed that this interfered with the findings, it is a variable to consider when interpreting results.

Overall, this intervention failed to achieve two out of the three outcomes but there was some improvement on the PHQ-9 and one objective was achieved. Considering the small scale of this study and the flaws in design, a fair conclusion to draw is that there is potential in this project but it should be conducted on a larger scale with the flaws in design ironed out. The outcomes are not strong enough to suggest that the intervention was successful.

Cost Benefits

Scholarly consideration of the success of an EBP requires that all aspects are considered, including benefits and limitations. Examining these aspects allows for improvements in study design, greater applicability and understanding of what the results mean, and reduces bias in conclusions (Moran et al., 2020). Below is a discussion on the limitations and strengths of this EBP.

Limitations

Many of the limitations of this EBP are related to the demographics and unforeseen flaws in study design. The convenience sample taken isn't representative of the United States population. The group is largely homogenous for caucasian/non-hispanic, females who identify as Christian of any denomination. This makes the results difficult to apply overall. Including sampling from additional non-religious clinics, with different demographic data would likely contribute to a more representative sample.

In addition to this, the sample size is smaller than ideal. Because of the privacy protections in the survey, participants could not be identified. Therefore, encouraging participation in the post-survey was difficult. An incentive could have been offered had a patient identifier been assigned. However, the participants are completely anonymous so there is no way of reaching out to them on an individual basis. There are push notifications scheduled that will reach out weekly to remind users to complete the survey and the week leading up to the conclusion of this project will see several push notifications informing participants of the end of

the project. A sign was also placed in the office regarding the post-survey as a visual reminder. Along this same vein, the intention was to match IP addresses to analyze pre-survey and post-survey results individually but unfortunately it was discovered that this is not a valid identifier from pre-survey to post-survey.

In addition, modifying certain questions would likely provide some valuable information. An example of this is Question number five on the pre-survey. Rather than asking, 'Have you been diagnosed with depression now or in the past?', it may have been more valuable to separate this into two questions including: 'Have you been diagnosed with depression in the past?' and 'Are you currently being treated for depression?'. Similarly, asking about medication use on the pre-survey and post-survey in addition to if any changes occurred in medication use during the course of the project would be helpful in understanding where the patient started and factors that may have affected PHQ-9 scores on both ends of the data.

Lastly, the cost of implementing this project makes sustainability challenging. In order to justify the additional costs, this application would need to demonstrate clinically significant improvement in depression outcomes. Planning for long-term implementation could reduce costs overall, however, the short term cost analysis suggests that the high cost may be prohibitive to ongoing implementation.

Strengths

The EBP was designed with great respect for patient privacy and anonymity. This intentionally reflects the high level of self-stigma that patients, particularly Christians, experience in regards to depression (Pace & McGuire, 2020). The low rate of follow-up with traditional treatment suggests that it is possible that stigma interferes with seeking treatment options. Anonymous participation can dissolve barriers related to stigma.

This was also an opportunity to collaborate with other disciplines, health discipline and otherwise, to create therapeutic treatment options. Collaboration is something that should be done more often within the complex human experience of health. This project exemplifies how nursing can be meaningful in promoting care of the whole person, interdisciplinary collaboration, and advancement into modern medicine.

Though the outcomes are not overwhelmingly positive, that 64% of participants shared a desire to continue using the application suggests that this intervention did achieve one measure of improving the subjective experience of depression. This result would have been more convincing with a statistically significant improvement in the PHQ-9 scores or self-reported improvement in symptoms with the use of the application. Though these objectives did not meet their target, they were not altogether discouraging. This EBP and its outcomes have immense future nursing research implications.

Implications for Nursing and Policy

As previously discussed, this study demonstrated some improvement in mean PHQ-9 scores from pre-survey to post-survey. Though it is not statistically significant, the score did improve and the intervention achieved the target set for patients who would like to continue to use the application. This suggests that there is great potential for an expansion on this study and development of similar, and perhaps more therapeutic options with intraprofessional collaboration. Effective causal inferences could be made if implemented on a more diversified population than the limited convenience sample in this particular study and on a larger scale. This project could serve to open the door into a treatment modality for mood disorders that nursing, the heart of holistic care, could spearhead with interdisciplinary collaboration.

Interdisciplinary collaboration is becoming increasingly necessary in the complex and rapidly advancing world of healthcare. This project highlights the relevance of nursing in holistic care and collaboration. There is opportunity to collaborate with mental health, technology,

religious leadership, social media platforms and public health sectors amongst many other potential disciplines. This is also an opportunity for nurses to reinforce the importance of spiritual care and assessment and create interventions that support the patient beyond their face-to-face experience. There is an opportunity to expand this to many religious sectors.

There is also room for incorporating these therapeutic technological tools into the treatment algorithms for patients with chronic diseases aside from depression. Perhaps an application for diabetes support or heart failure support could be an effective way to extend the reach of nursing beyond the clinical encounter time as well. This study has great potential to open doors for further research and applicability of spirituality and technological care in the future.

Reflection on DNP Essentials or Program Outcomes

The DNP is required to demonstrate the DNP Essentials throughout the scholarly project. These essential competencies support the advancement of nursing as a profession and the growth of the DNP as a leader and clinician (Moran et al., 2020). These competencies are demonstrated within the program outcomes of the university as well. This section will discuss the application of Program Outcomes and DNP Essentials to this EBP.

Application of the Essentials

The first program outcome requires that the DNP demonstrates “critical application of worldview concepts and the Christian faith with advanced nursing practice for diverse populations across the lifespan” (Spring Arbor University School of Nursing and Health Sciences [SAUSNHS], 2020, p.10) This also fulfills the second program outcome of integrating “current evidence from other healthcare-related disciplines with nursing research and theories to develop, implement, and evaluate innovative practice approaches” (SAUSNHS, 2020, p.10). These outcomes address the essentials of scientific underpinnings in practice, information systems and patient care technology, and clinical scholarship and analytical methods for

evidence-based practice (SAUSNHS, 2020). This project directly applies research regarding the benefits of religion and technology to the treatment of depression, particularly Christianity.

Implementing this project is a quality improvement measure that was designed with the intention of improving patient care for all patients with depression, which demonstrates the DNP Essentials of quality improvement leadership, population health, and advanced nursing practice (AACN, 2006). This also addresses program outcomes associated with designing and evaluating quality improvement methodologies that lead to high quality patient care, utilizing information technology to improve nursing care, and engaging in research for advancement of nursing (SAUSNHS, 2020).

This project is also highly collaborative, involving professionals in mental health, religion, and information technology in order to create a tool that improves patient care. This is in fulfillment of DNP Essentials involving “interprofessional collaboration in improving patient and population health” and Program Outcomes aligned with synthesizing data from social sciences to improve patient care (SAUSNHS, 2020, p.10). The process of implementing the project fulfilled the DNP Essentials and Program Objectives thus enforcing that nursing science is the backbone of this project. Nursing science has great potential to positively impact the lives of patients and healthcare overall and doctorally prepared nurses are responsible for advancing the profession through engagement in quality improvement endeavors (Moran et al., 2020).

Sustainability

The EBP that was conducted was intended to serve as a tool for ongoing care for patients with depression. There were several positive reports from patients that the mental health providers passed along including one person who said that she shared the information with many friends because it was so useful to her. As reported on surveys, 64% of the participants would continue to use the application, exceeding the goal of greater than 50% set in Objective 1c. Patients also experienced an improvement, though statistically insignificant on the PHQ-9. These measures suggest that ongoing use could be helpful, but there are some

detractors that make the ongoing implementation of this intervention a challenge at the project implementation site.

Though much excitement and support was experienced at the onset of the project, little sustained interest occurred at the project implementation site. Providers at the site did not have a negative perception of the application. Rather, there was very limited ongoing support for the application. A great deal of ongoing encouragement was necessary to complete the project. Though there is some improvement noted by patients, the limited support of clinicians at the site of practice combined with the limited reinforcement on evidence-based practice at the site and cost of ongoing use of the application, suggests that sustainability at the current practice site is unlikely.

Sustainability is achievable if this project is transferred to a different clinical practice site or if this is offered and promoted through a technological platform separate from a clinical practice site. A potential plan is to make modifications as noted previously to the project design, and to re-implement the project at a larger clinical site and on a larger scale.

Dissemination of Findings

The doctor of nursing practice (DNP) project investigates the role of religion and technology in the treatment of depression. The anticipated deliverable of this project is “the use of evidence to improve practice or patient outcomes” (Moran et al., 2020, p.148). Essential to bridging the project to real world practice, is dissemination of the findings. The plan for communicating the findings of this project include defending the research publicly through Spring Arbor University (SAU), an eposter submission to Nurse Practitioner Associates for Continuing Education (NPACE), and an article submission to The Journal for Nurse Practitioners (JNP). I will also privately communicate the results of this project to The project facility site, the site through which this project was implemented.

Site of Project Implementation

The project manager has since departed from the site in which this project was implemented but the original plan for dissemination remains as previously planned. Findings will be communicated at the February staff meeting. This presentation will involve a verbal presentation and a handout that summarizes the findings. Upon completion of the complete written report, the complete report will be sent via email to the co-owners of the clinic who will be given permission to share the project with any staff members or providers who express an interest.

Oral Defense

The final step in completion of the DNP is an on campus defense of the doctoral project (Spring Arbor University's School of Nursing and Health Science [SAUSNHS], 2020). These guidelines will be followed in preparation for the defense. In addition, any guidance that the DNP chair is willing to offer will be utilized. Prior to the oral defense, the project will be completed and submitted to the chair, in order to accept suggestions and polish the presentation. Findings will be provided in a formal paper, a powerpoint presentation, and summary handouts, as well as any additional formats required or requested by my chair. This defense will involve communicating my findings to faculty at the university, fellow students, community members, and the faculty chair (SAUSNHS, 2020). This event will take place on April 22, 2022 on campus.

Poster Submission

NPACE is a national organization that accepts poster presentation submissions year-round for their eposter gallery. These posters are published quarterly. An abstract resume, author biography, one learning outcome, summary, and five multiple-choice questions must be submitted along with the poster in order to apply for acceptance (NPACE, 2020). The poster summarizing this EBP will be submitted in March 2022 for potential publication in August 2022. This poster will target actively practicing nurse practitioners who are engaged in continuing

education with the intention of communicating the findings and providing education on the grand potential for technology in patient care.

Journal Submission

The JNP accepts several types of submissions including original research for publications occurring ten times each calendar year. Original research should use standard headings for research articles including: background and significance, purpose, methods, results, discussion, limitations, and conclusion. These submissions must also include an abstract, highlights, key words, a cover letter, and a word count of less than 4,500. This journal is peer-reviewed so the submission will be subjected to rigorous review prior to publication (JNP, 2021). Publication in this journal would reach a wide audience of nurse practitioners as this is a publication associated with the American Academy of Nurse Practitioners (AANP).

Summary of Dissemination

Disseminating findings in a meaningful way is perhaps even more important than the project in many ways because communicating the new information generated is crucial for influencing practice (Moran et al., 2020). By communicating the findings of my project using a variety of methods, reaching a greater audience is possible. The impact of the project can be greater on nursing practice overall if many professionals are able to realize the potential of marrying the convenience of technology with the needs of patients, explore the potential research implications, and learn from any flaws as well.

Conclusion

The goal of this EBP was to improve the subjective experience of depression through use of an application with Christian support resources for depression. This was measured in one of three ways: by improvement of PHQ-9 scores from pre-survey to post-survey; by

self-reported improvement in symptoms after using the tool for one month or more; or by self-reported desire to continue to use the application after one month or more.

The project was conducted at a rural, integrated, private practice that is Christian based. This site is unlikely to make attempts to sustain this project as the emphasis on policy, quality-control, and evidence-based practice is minimal. Though great support was given at the onset of implementation of the project, ongoing support waned despite ongoing communication and encouragement.

While many variables can be analyzed when looking at the results of the information collected, the goal of this project is simply to note whether improvement occurs. There are three potential outcomes that would suggest project success. One of these objectives met the goal, when 64% of the participants reported a desire to continue using this application, suggesting mild success. Two objectives failed to achieve their goals though there was improvement in the PHQ-9 from pre-survey to post-survey and the amount of participants who reported improvement in symptoms was just shy of the 50% goal. Only 48% of the participants reported improvement. Considering the weaknesses of the study including sample size, homogenous sample, and design flaws, the conclusions of this study are limited in applicability. However, there is an immense prospect for expanding the research to a larger, more representative population and ironing out some of the flaws in design to draw more convincing conclusions in the future.

The results will be disseminated at the university and through poster presentation in virtual display halls. The ultimate goal in disseminating this project will be to encourage ongoing research on the potential for mobile technology to be incorporated into patient care for depression and to collaborate on improving and expanding the study to draw stronger conclusions. Mobile technology has great potential when guided by nursing science and our responsibility to our patients to meet the demands of today's society for treatment suggests that ongoing DNP work on this project is essential.

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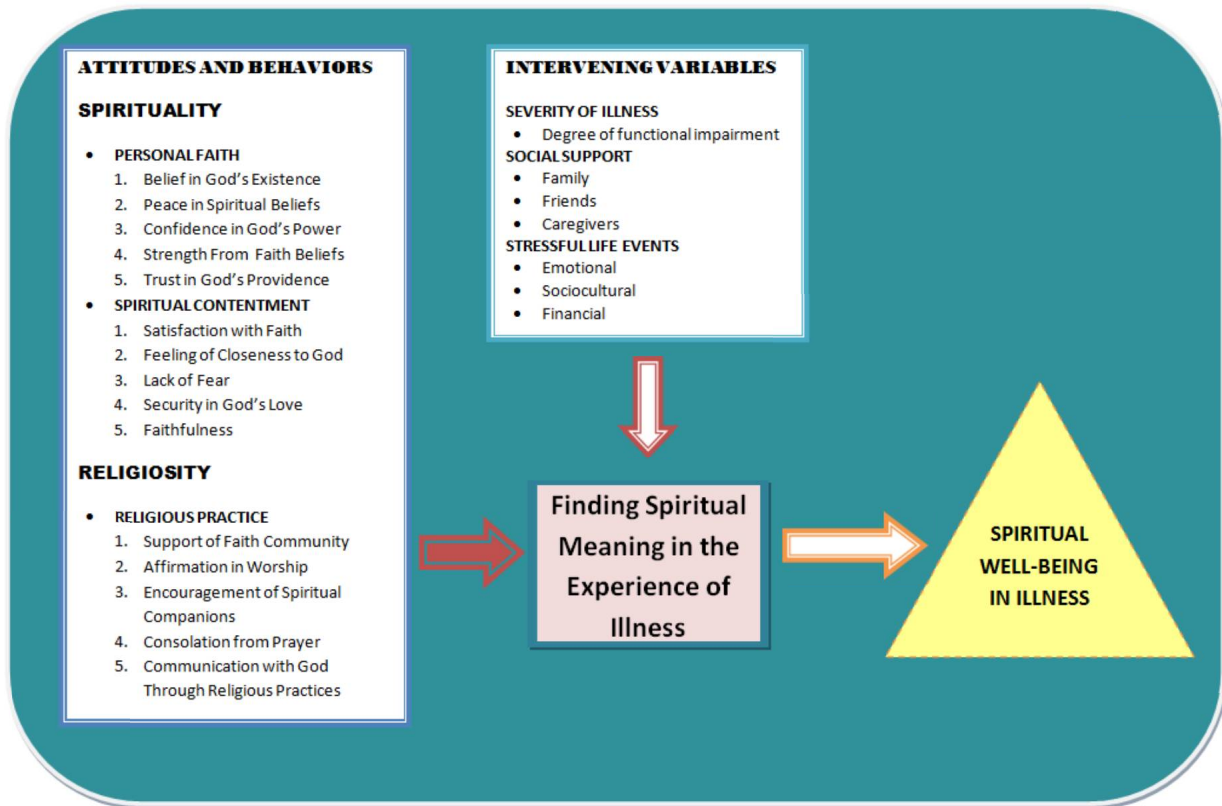
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Appendix A

Theory of Spiritual Well Being



Appendix B

SWOT analysis chart

| | |
|--|--|
| STRENGTHS <ol style="list-style-type: none"> 1. Religious focus 2. Spiritual assessment comfort 3. Integrated health environment 4. Leadership and providers are excited about the tool 5. Evidence-based practice focus of the practice 6. Daily meetings 7. Collaborative environment 8. Close patient relationships 9. Person-centered focus 10. Educational emphasis in strategic plan 11. Few barriers for approval. 12. Appointment times are longer than normal. | WEAKNESSES <ol style="list-style-type: none"> 1. Disproportionate Christian patient base 2. Large pediatric patient base 3. Small number of providers 4. Small patient base 5. Multiple areas of focus 6. Rapid change 7. Independent decision-making encouraged |
| OPPORTUNITIES <ol style="list-style-type: none"> 1. Pandemic stress 2. Political stress 3. Patients discouraged with the state of health care 4. Growing popularity of integrated health care 5. Insurance changes 6. Increased demand for virtual services 7. Provider shortage | THREATS <ol style="list-style-type: none"> 1. Viewpoints on religion 2. Fear of exposure to COVID19 3. Financial instability due to pandemic 4. Geographic location 5. Weather delaying expansion |

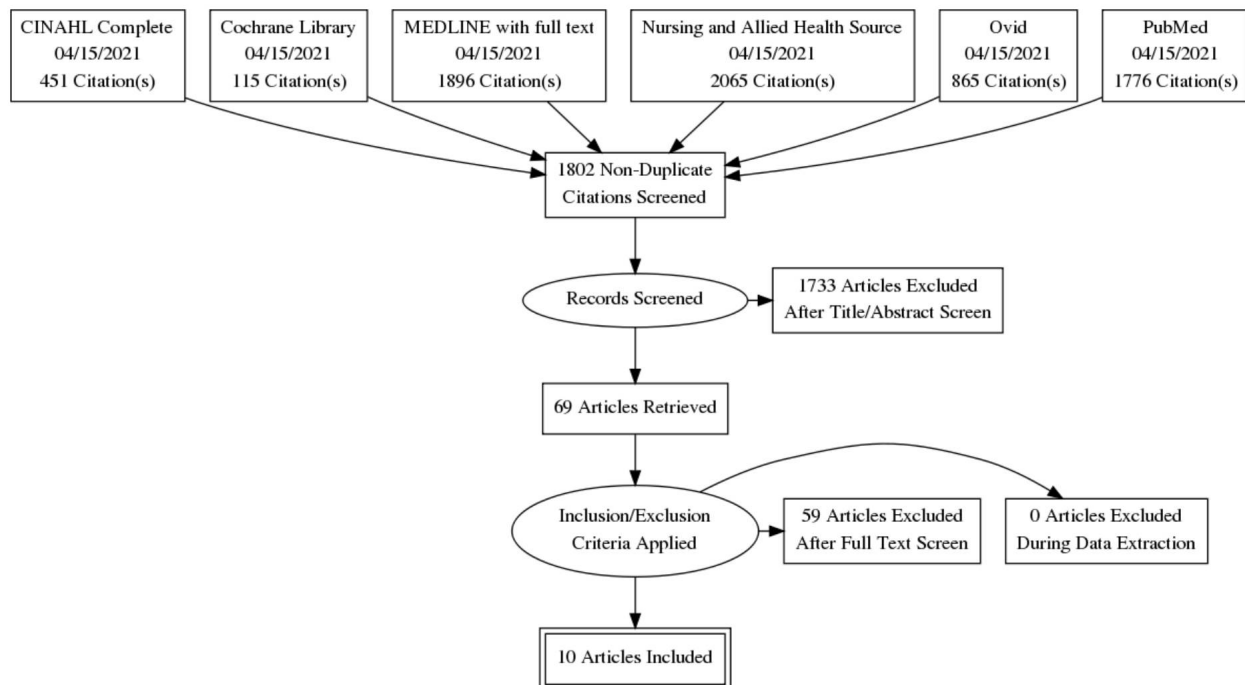
Appendix C

Organizational structure

| | | |
|--|--|---|
| Founder, Co-Owner, Medical Director | Medical Director, Behavioral Health Director | Founder, Co-Owner, Behavioral Health Director |
| Medical Team | Office Manager | Mental Health Team |
| Medical providers, dietician, physical therapy | Support staff | Mental health providers |

Appendix D

Research flow diagram



Appendix E

Consent Form

IT IS WELL Mobile App*What is this?*

A provider at The project facility site is in a doctoral program and has developed an application that pulls together Christian content in hopes of providing support for depression or simply uplifting people in times of need. It is a free application available on the Apple Store or the Google Play Store. Just search for “It Is Well” on Google Play or “It Is Well!” on the Apple Store and download. I would be honored for you to be involved as a part of the study of whether this is helpful.

Are there any strings attached?

There are no hidden strings. There are a few things that I ask of you. One is that you **complete the pre-surveys** when you start using this. The second is to **complete the post-surveys** about a month after you begin using this. Push notifications will be sent as reminders. That is it! There will be no personal information recorded. The survey is completely transparent. The information on it is what will be used for the study and we will not collect any personal identifiers.

What you should know.

This application is not fully developed so it only contains Christian content for English-speaking people. This is also not intended to replace treatment or advice from a licensed professional but should serve as a support tool only.

*About the study***The role of religion and technology in the treatment of depression**

Major depression is second only to low back pain in leading causes of disability in the United States. Only 51-71% of those suffering with depression receive treatment. Mobile technologies and religion have been found through research to be immensely impactful in treating depression. In patients with diagnosed depression, this study aims to describe what the effect is of adding Christian support in a technology-based format to the current treatment regimen for at least a month on the severity of depression compared with the severity prior to implementation of the application.

Risks and Benefits

The risks associated with this study are minimal and include potential loss of confidentiality and psychological distress due to completing a screening questionnaire for depression. Potential benefits include religious psychological support, improvement in mood, and exposure to more religious content.

Eligibility and Compensation

You must be 18 or older to participate.

You will not receive any payment for your participation in this study.

Consent and Rights

If you have read this form and have decided to participate in this project, please understand your participation is voluntary and you have the right to withdraw your consent or discontinue participation at any time without penalty or loss of benefits to which you are otherwise entitled. The results of this research study may be presented at professional meetings or published in research journals. However, identifying information about you will not be collected without your knowledge or shared. For written response questions, if you feel that a question doesn't apply to you, or you prefer not to respond, please indicate this by entering in "N/A."

Contact

If you have any questions about this study, please feel free to send the researcher an email directly:

Alison Stoughton

DNP student

Spring Arbor University Nursing

itiswellmobileapp@gmail.com

If you are not satisfied with the way this research is being conducted, please contact the Spring Arbor University Institutional Review Board chair at bethany.ulrich@arbor.edu

★ Thank you in advance for giving your time and consideration to assisting with this project!

Appendix F

Pre-Survey

Part 1: Demographic Information

1. Please select your age category
 - a. 18-35
 - b. 36-50
 - c. 51-65
 - d. Over 65
 - e. None of these or Prefer not to say
2. Please select your Gender
 - a. Male
 - b. Female
 - c. Non-binary
 - d. None of these or Prefer not to say
3. Please select your Race/Ethnicity
 - a. Black or African American
 - b. Hispanic or Latino
 - c. White or Non-hispanic
 - d. American Indian or Alaskan Native
 - e. Asian
 - f. Native Hawaiian or Pacific Islander
 - g. Other
 - h. None of these or Prefer not to say
4. Please select your Religion
 - a. Agnostic
 - b. Atheist
 - c. Christian (of any denomination)
 - d. Buddhist
 - e. Jewish
 - f. Islam
 - g. Spiritual but not religious
 - h. I haven't made my mind up yet
 - i. In spiritual crisis
 - j. Other
 - k. None of these or Prefer not to say
5. Have you been diagnosed with depression now or in the past?
 - a. Yes
 - b. No
 - c. I'm not sure
 - d. None of these or Prefer not to say
6. Are you currently using one or more medications for depression?
 - a. Yes

- b. No
 - c. I'm not sure
 - d. None of these or Prefer not to say
- 7. Have the events surrounding the past year and COVID-19 had an effect on your mental health?
 - a. Yes
 - b. No
 - c. It hasn't been noticeable one way or another
- 8. Has anything occurred that has negatively affected your mood during the time that you have been using this application?
 - a. Yes
 - b. No
 - c. Unsure
- 9. Are you now or have you ever been a patient at The project facility site?
 - a. Yes
 - b. No

Appendix G

PHQ-9

PATIENT HEALTH QUESTIONNAIRE (PHQ-9)

NAME: _____ DATE: _____

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 | 0 | 1 | 2 | 3 |

add columns + +

(Healthcare professional: For interpretation of TOTAL, TOTAL:
please refer to accompanying scoring card).

| | | |
|---|----------------------|-------|
| 10. If you checked off <i>any</i> 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 | _____ |

Appendix H

Post-survey

1. Did you feel any benefit or improvement in your mood while using this application?
 - a. Yes
 - b. No
 - c. Not much if any
 - d. None of these or Prefer not to say
2. Would you use a similar application on an ongoing basis?
 - a. Yes
 - b. No
 - c. Probably
 - d. Probably not
 - e. None of these or Prefer not to say

Appendix I

IRB Approval

**Spring Arbor University
Institutional Review Board**

Decision Sheet for Stoughton, Hengen; *The role of religion and technology in the treatment of depression*

Project Category:

☒ New

Assigned IRB#: 03230702-070921

☐ Renewal

Funding Agency, (if applicable):

Project Timeline:

Start Date: 07-09-21

End Date: 07-09-22

Committee Decision:

☐
Approved as an exempted review, no further review needed unless protocol changes.

☒
Approved as an expedited review, no further review needed unless protocol changes.

☐
Approved as a full review, no further review needed unless protocol changes.

☐
Denied due to:

Comments:

We understand the nature of this study is an expedited level study and give approval to conduct data collection, provided that subjects complete an informed consent statement.

Date of Decision: July 09, 2021

Signature of IRB Designate: Bethany J Ulrich