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Evidence-Based Practice Screening Protocol to Integrate Physical Health Services into a Behavioral Health Center

Debra Bell

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EVIDENCE-BASED PRACTICE SCREENING PROTOCOL TO
INTEGRATE PHYSICAL HEALTH SERVICES INTO A BEHAVIORAL
HEALTH CENTER

by

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A Capstone Project
Submitted to the Graduate School,
the College of Nursing
and the Department of Systems Leadership and Health Outcomes
at The University of Southern Mississippi
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Nursing Practice

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ABSTRACT

Individuals aged 18 or older who suffer from a serious mental illness (SMI) often have coexisting chronic physical health problems such as diabetes, hypertension, obesity, and cardiovascular disease. Multiple providers in various settings provide care for individuals with co-morbid SMI and physical health problems. Early, effective and efficient screening leads to successful treatment and management of patients with both SMI and chronic physical health complications. The purpose of this DNP project was to develop and implement an evidence-based integrated screening protocol for adult males (18 and over) diagnosed with SMI and co-morbid physical health problems who presented for care in a community based mental health center. A practice protocol was developed and implemented as a key part of the community-based mental health center clinical pathway. The protocol focused on comprehensive care management and care coordination for health and clinical services to include early screening and referrals. Two registered nurses screened 35 adult males with a SMI diagnosis for physical health complications. The mean age for the individuals screened was 41.88 years; 40% (14) were smokers; 23% (8) had elevated glucose levels; 20% (7) had hypertension; and 17% (6) were obese. No referrals to a primary care provider were completed. The evidence-based screening protocol for identifying physical health problems in individuals with SMI was effective. The development of the protocol improved quality of care delivery through screening, to identify individuals who would necessitate a referral to a primary care provider.

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DEDICATION

First and foremost, I give reverence to the Almighty Father who has kept me all the way. Additionally, I would like to extend dedication to a very special man in my life, Mr. Michael Francis for his love and support given during this journey. Thanks to my daughter who has been inspired and impacted to advance her nursing education, my siblings who have encouraged me every step of the way, and my mother, and father. Lastly to my Pastor who always keeps me in his prayers, “thank you”.

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LIST OF ABBREVIATIONS

AACN	American Association of Colleges of Nursing
AHRQ	Agency for Healthcare Research and Quality
APRN	Advanced Practice Registered Nurse
BH	Behavioral Health
BHI	Behavioral Health Integration
BMI	Body Mass Index
CBMHC	Community Based Mental Health Center
CCM	Chronic Care Model
CDC	Center for Disease Control and Prevention
COPD	Chronic Obstructive Pulmonary Disorder
CVD	Cardiovascular Disease
DMH	Department of Mental Health
DNP	Doctor of Nursing Practice
EAP	Employee Assistance Program
FNP	Family Nurse Practitioner
FQHC	Federally Qualified Health Center
NAMI	National Alliance on Mental Illness
NASMHPD	National Association of State Mental Health Program Directors
NICE	National Institute for Health and Care Excellence
NIMH	National Institute of Mental Health
NP	Nurse Practitioner

PACT	Program of Assertive Community Team
PCPCC	Patient-Centered Primary Care Collaborative
PH	Physical Health
PD	Project Director
PMHNP	Psychiatric Mental Health Nurse Practitioner
RN	Registered Nurse
SAMSHA	Substance Abuse and Mental Health Administration
SMI	Serious Mental Illness
US	United States

CHAPTER I - INTRODUCTION

Individuals with serious mental illness (SMI) often experience significant gaps in quality primary health care, which result in poor health outcomes, including elevated risk of physical health conditions, shorter life expectancies, and increases healthcare costs (Agency for Healthcare Research and Quality [AHRQ], 2017; Lewin Group, 2012; Zeiss & Karlin, 2008). The mental health care and primary health care integration is a relatively new phenomenon that has shown promise in the delivery of primary health care for individuals, specifically with SMI (AHRQ, 2017; Substance Abuse and Mental Health Services Administration [SAMHSA], 2017).

The integration of primary care and behavioral care services is referred to as behavioral health integration (BHI) (Lewin Group, 2012). Providers typically deliver behavioral (BH) and physical health (PH) services separately, without considering the effects of the inevitable integration between them. Lack of integration is a problem for people that have SMIs because of the severity of their illness (Lewin Group, 2012). The problem this Doctor of Nursing Practice (DNP) project sought to address was the significant gaps in primary health care screenings of individuals with SMI in a behavioral care setting.

Background and Significance

SMI is defined by the SAMHSA (2017) as a diagnostic mental, behavioral, or emotional disorder (excluding development and substance use disorders) that lasts for a specific period, as stated in the mental disorder diagnostic statistics manual. According to the National Institute of Mental Health [NIMH] (2016), mental disorders are prevalent in

the United States (US); however, most individuals who are suffering from SMI are those who experience incapacities due to this disorder.

Serious Mental Illness

Serious mental illness includes schizophrenia, bipolar disorder, and other severe forms of maladies such as severe depression, post-traumatic stress disorder (PTSD), and obsessive-compulsive disorder (OCD) (Center for Behavioral Health Statistics and Quality, 2017). Moreover, people who suffer from SMI are often afflicted with other chronic health issues such as diabetes and hypertension requiring care and support from various healthcare providers and environments. It has been noted that those who experience SMI's face higher risk related to medical and social conditions, and most are likely to be chronic smokers, obese, homeless, and are generally exposed to violence. According to Lewin Group (2012), a primary concern for people with SMIs, regardless of gender, economic, and social status is the high rate of morbidity and mortality.

Morbidity and Mortality for SMIs

The symptoms of serious mental illness are manifested in individuals regardless of age, and lead to significant impairment and costs. In the US, about 18.6% of adults and 13% to 20% of children ages 8 to 15 years old have a mental disorder, while about one-fifth of adults with mental illness have a severe or serious mental illness (NIMH, 2016). In 2015, it was reported that in the US alone, the projected number of people aged 18 or older who suffered from a serious mental illness reached 9.8 million. About 4.0% of all U.S. adults and about 4 to 5 million (0.1%) children and adolescence suffer from a serious mental illness. Nevertheless, the projections used for children who suffer from SMI tend to be less accurate as diagnosing SMI in children and adolescents can be more

complex. Untreated chronic illnesses, such as hypertension, cardiovascular disease, and diabetes leads to the increased number of deaths in individuals with SMIs (SAMHSA, 2017).

Tsan et al. (2012) addressed the mortality and care according to standard guidelines of older individuals with schizophrenia from a sample across the US of almost 50,000 individuals including weight management, nicotine dependence, cardiovascular problems, infectious disease, vision, metabolic concerns, and mental health counseling. They found an average of four chronic diseases in the population including dyslipidemia (29%) and high blood pressure (43%). Trangle, Gary, Paul, and Christensen (2010) also addressed physical health concerns for people who suffer from SMIs in Minnesota. The morbidity and mortality rates for individuals with SMIs who had heart disease had mortality age 27 years younger than individuals in the general population. Trangle et al. (2010) found that people with SMIs were not getting appropriate attention and care for their physical health, which had a negative impact on their life expectancy.

In the past decade, mental illness has become more prevalent in the general population in the US due to higher incidence of alcohol/substance abuse and poor socioeconomic indicators. In most cases, adults often refrain from accessing or seeking medical care for their underlying mental/psychological health issue (Parcesepe & Cabassa, 2013). Lack of screening and early diagnosis has led to a significant increase in the overall prevalence of SMI (Rao, Raney, & Xiong, 2015). Also, individuals with SMI often have little or no access to high quality care because of socioeconomic factors such as poverty and accessibility of health care (Lewin Group, 2012). Limited access to primary care or appropriate medication management; therefore, leads to use of

emergency rooms and hospital admissions. Murphy et al (2015) proposed that many of these health problems and costs can be avoided with:

- Regular health campaigns
- Adopt intervention measures in various contexts
- Primary care, such as medication and non-medication support
- Outreach and community support activities

Integrated Care

Barriers to primary care and working through the intricate healthcare systems are primary obstacles to healthcare access. The answer is integrated care, the systematic coordination of general and behavioral health care (SAMHSA, n.d.). According to Pastore, Griswold, Homish, and Watkins (2013), the integration of care for health issues such as mental health, drug abuse, and primary care services results in better outcomes. That is, the integrated approach to health care can be considered as the most efficient and effective strategy to deliver quality care to patients who require the attention of multiple health care providers. Several states have successfully integrated behavioral and primary care, including Massachusetts, Washington, Vermont, and Utah (Patient-Centered Primary Care Collaborative [PCPCC], 2018). Mississippi is moving forward with integrated care and recent legislation may provide the solution to integrating physical health care in behavioral health care centers in the state.

Integrated Care in Mississippi

In Mississippi, the Department of Mental Health (DMH) is primarily responsible for the overall mental health system. The DMH along with other local and regional institutes and organizations monitor the mental health status of people in Mississippi

(Mississippi Department of Mental Health, 2018). In 2014, a law allowed for community based mental health centers (CBMHC) to provide primary care to persons receiving care at CBMHCs and to family members within the third degree (Regional Mental Illness and Intellectual Disability Commissions Define Services Act of 2014). In the past decade, Mississippi has witnessed a significant rise in several mental health conditions.

Needs Assessment

For this DNP project, the target stakeholders are the medically underserved patients of a CBMHC located in central Mississippi. This location is one of 14 regional CBMHCs in the state and provides comprehensive mental health services to adults, children and youth, families, elderly, and those with chemical dependence and substance use disorders. Prescribing providers include one full-time Psychiatrist, four part-time Psychiatrists, three full-time Psychiatric and Mental Health Nurse Practitioners (PMHNP). Other support staff members include seven Registered Nurses (RN), a Pharmacy Technician, 53 counselors, and 52 case managers and peer support staff.

Some of the services provided by this CBMHC include assessment and screenings, which may require pre-commitment. This mental health center further carries out activities such as crisis inventory, which is made available through the 24-hour crisis support and the provision of emergency services. This CBMHC further supports the delivery of outpatient, individual, group and other forms of therapy. In line with the goal to address serious mental illness, this Mississippi based center promotes psychiatric evaluations, and other community support services. Outpatient adult psychiatric and mental health services provided include: program of assertive community (PACT), a mobile psychiatric mental health treatment team; psychosocial rehabilitation program;

psychosocial program; nursing home; a program for individuals in treatment and recovery to help gain and maintain employment; and Employee Assistance Program (EAP). The CBMHC receives reimbursement for services provided by Medicare, Medicaid, private insurance, provider pay and uninsured who are billed on a sliding scale payment plan. A major component of the program is social work led integrated care teams that target SMI individuals to improve overall health and wellness.

The CBMHC supports integrating physical health services into the present behavioral health services and began the process of moving forward with integrated care. An assessment of the level of collaboration/integration was conducted and workflow design was implemented based on the level of integration, level zero, over a 9-month period. The organization is moving forward with integration at level four, reaching an agreement on specific screening based on the organization's ability to respond to the screening results (Heath et al., 2013). Currently, behavioral health (BH) and physical health (PH) services are delivered by different providers in separate settings, with little coordination or integration. The role of the RN is to complete the initial assessment form on all patients who are being seen. There is a universal assessment form completed on patients who are being seen for initial visits as well as follow visits.

A comprehensive assessment of medical problems in patients with SMI is often neglected in current behavioral care practices due to the lack of a consensus guideline or protocol. Nursing professionals need to understand the importance of clinical needs assessment and referral of patients with SMI with co-morbid medical problems. The overall development of a protocol would improve overall quality of care delivery. The information obtained through this DNP project has the potential to bring awareness to the

problems facing individuals with SMI, such as lacking access to quality primary health care. Improving access to and delivery of primary health care for individuals with SMI has been described as having the potential to decrease early death rates by improving the management of co-morbidities and increasing the quality of life (AHRQ, 2017).

Problem Statement

A comprehensive assessment of medical problems in patients with SMI is often neglected in current behavioral care practices due to the lack of a consensus guideline or protocol. Nursing professionals need to understand the importance of clinical needs assessment and referral of patients with SMI with co-morbid medical problems. The overall development of a protocol would improve overall quality of care delivery. The information obtained through this DNP project has the potential to bring awareness to the problems facing individuals with SMI, such as lacking access to quality primary health care. Improving access to and delivery of primary health care for individuals with SMI has been described as having the potential to decrease early death rates by improving the management of co-morbidities and eventually the quality of life (AHRQ, 2017).

PICOT Question

The key PICOT question for this DNP project is the following: In adult male patients with SMI that seek behavioral health care at a community based mental health center, does the development and implementation of a practice protocol for assessing and identifying physical health problems improve coordination of care?

Review of Literature

A search was conducted for peer-reviewed articles on the databases Proquest and EBSCO Host. In addition, relevant organizational and government web sites were

searched to ensure the inclusion of relevant documents. These sources included SAMHSA Center for Integrated Care Solutions (2017) and other online evidence-based protocols/guidelines on integrated care. Although initially reviewed, articles that focused on populations outside the United States were excluded, because this project focused only on US settings.

The search included the following keywords: *serious mental illnesses, primary care, physical health problems, assessment, identification, referrals, practice protocols, behavioral health care, and community-based mental health center*. PubMed and Google Scholar were used to access information on serious mental illness. Several government agency websites were utilized to obtain epidemiological and statistical information on mental illness among adults in the US. These agencies included the Centers for Disease Control and Prevention (CDC), Department of Mental Health (DMH), National Alliance on Mental Illness (NAMI), NIMH, and SAMHSA.

Integrated Care

It is predicted that people who suffer from mental illness and disorders due to substance abuse are likely to die decades sooner than the average individual. This phenomenon is associated with the occurrence of chronic diseases such as hypertension, diabetes, and other co-morbidities that remain untreated and most of which are aggravated by unhealthy lifestyle such as drug use, poor nutrition, and other poor health habits. Consequently, these health issues can be addressed with integrated care, which is the efficient coordination of different health care approaches. The integration of mental health care approach in addressing substance abuse as well as the provision of primary health care result in better outcomes and is considered an effective means to care for

patients who require a different form of health care services (Hoge, Morris, Laraia, Pomerantz, & Farley, 2014).

Recently, there has been a trend of integrating primary care with behavioral health care due to the support of the National Association of State Mental Program Directors (NASMHPD, 2005). Consequently, national, state, and local organizations are addressing the need to bridge the gaps between delivery of primary health care and behavioral health care. The National Strategy for Quality Improvement in Health Care (2012) believed that integration is a better approach in enhancing and improving access to quality health care. AHRQ developed and implemented the Academy for Integrating Behavioral Health and Primary Care which focused on using evidence-based practices and patient-centric care approaches to improve health outcomes among patients requiring mental health services. The academy is known as a credible and reliable resource for patients and their family members to access and utilize mental health services through an integrated healthcare system (AHRQ, 2017).

The SAMHSA-HRSA Center for Integrated Health Solutions advocated for the initiation of a national standard, wherein there are six collaboration and integration levels that range from the use of minimal to full collaboration. This form of a transformed or merged integrated practice is as shown in Table 1(Heath, Romero and Reynolds, 2013).

Table 1

A Standard Framework for Levels of Integrated Healthcare (Heath et al., 2013)

Coordinated Key Element: Communication	Co-located Key Element: Physical Proximity	Integrated Key Element: Practice Change
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LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5	LEVEL 6
Minimal Collaboration	Basic Collaboration: At a distance	Basic Collaboration: Onsite	Close Collaboration: Onsite with some system integration	Close Collaboration: Approaching an integrated practice	Full Collaboration Transformed merged integrated practice

In the framework, core descriptions of the six level are identified, key differentiators for each level (categorized as Clinical Delivery, Patient Experience, Practice/Organization and Business Model), and the advantages and weaknesses of each level are described. The key differentiator, clinical delivery, level four interventions addresses specific screening and collaborative treatment planning for specific patients with shared training based on the needs of the population of interest (Heath et al., 2013).

Integrated Primary Care in Behavioral Health

One of the most frequent ways for people with severe mental disorders to enter the healthcare system is through community mental health centers. Druss et al. (2010) conducted a study in an urban community mental health center with the objective of comparing a population-based medical care management intervention to usual care. At the time of the study, the community mental health center was not providing medical care management. The investigation was conducted with a random sample of 407 adults, age 18 years of age and older from a low socioeconomic background with a persistent mental illness. Individuals were randomized to either usual care or the medical care nurse management group. The investigators conducted a chart review of evidence-based medical and mental health indicators at baseline and at 12 months to compare preventive and cardio metabolic care to usual care. Nurses for the medical care management group

followed a protocol to address patient, provider, and system barriers including health education for the patients as well as facilitating communication and advocacy with the medical providers followed a protocol. Quality of care was measured at baseline, 6 months, and at 12 months. Improvements in the medical care management group were noted in mental health quality of life, cardiometabolic health services for hypertension, diabetes, coronary artery disease, and elevated cholesterol, and preventive services increased two-fold. At the end of the study, the authors suggested that medical care management appears to lead to better primary care (Druss et al., 2010)

When mental health professionals assess patients during treatment, they can also observe their physical conditions so the patients can receive the needed primary and specialized care (Carson, Katz, Gao, & Alegria, 2010). This conceptual understanding was the result of a study in which the assessments of 129 patients (done in 8 clinics by 47 mental health professionals) were taped then analyzed qualitatively using 21 physical illness items. Almost 9 times out of 10, the participants discussed physical conditions, including the side effects of medications—33 % of the time, it was the patients who had to bring the subject up. Another negative aspect was that the frequency of the assessments also varied. As a call to action, the investigators recommended that mental health professionals assess physical conditions during intakes and treatment observations, which may include some innovation regarding the education of physical problem management for the healthcare professionals.

The successful treatment and management of patients with both SMI and chronic health problems is based on effective and efficient screening. Nurses need to be trained, skilled, and competent to identify patients with physical health problems in behavioral

care settings. Additionally, assessment of physical health problems in patients with SMI is often neglected in current behavioral care practices due to the lack of a consensus guideline or protocol. Most nursing professionals need to understand the importance of clinical needs assessment and referral of patients with SMI with co-morbid medical problems.

Screening for Physical Health Problems in a Behavioral Health Setting

Patients presenting with major mental disorders such as schizophrenia, bipolar disorder, and depression often present with multiple physical health problems. Physical health conditions include: (a) severe cognitive impairment, (b) chronic obstructive pulmonary disease, (c) congestive heart failure, (d) stroke, (e) dementia, or (f) Parkinson's disease (Aschbrenner et al., 2012). In context to initial primary health screen, nurses would need to assess key lifestyle factors such as level of physical activity, alcohol consumption, smoking, diet, socioeconomic status, past and family medical history (Bahorik et al., 2017).

Based on a recent review, a team of experts indicated that patients with SMI in mental/behavioral health centers should be screened for obesity, hypertension, diabetes, and lipid profile prior to implementing treatment (Baller, McGinty, Azrin, Juliano-Bult, & Daumit, 2015). In most cases, patients with elevated blood pressure, uncontrolled diabetes, or cholesterol issues may have SMI. Thus, there is a need to identify such patients and provide appropriate treatment to these primary conditions. Patients need to be screened for respiratory conditions such as asthma or chronic obstructive pulmonary disorder (COPD). In some cases, nurses may need to evaluate patient's thyroid function and refer the patient for optimal treatment (Bahorik et al., 2017). In context to

hypertension, nurses need to evaluate if the patient had their blood pressure checked in the past 2 years. If yes, assess if the patient's pressure was low or high (Normal: 120/80 mmHg). In context to weight, the patient's body mass index and waist circumference should be measured to assess risk of cardiovascular or metabolic disease. In context to diabetes, nurses would need to evaluate the patient's fasting blood glucose levels and if needed an HbA1c test for precise details (Fracolli et al., 2014).

The National Guideline Alliance provides an in-depth guideline on assessment and management for bipolar disorder in adults, children, and young people and, psychosis and schizophrenia in adults (AHRQ, 2014a; 2014b). The National Institute for Health and Care Excellence (NICE) also published recent guidelines on assessment, treatment, and management of psychosis and schizophrenia. In addition to screening for bipolar disorder, schizophrenia, and psychosis commonly found in behavioral care settings, it is equally important to screen for physical health problems in a behavioral health setting.

Specifically, primary health screenings at minimum should include an assessment of weight, height, blood pressure, pulse, respiration, glucose, and tobacco use (AHRQ, 2014a; 2014b; 2017; NICE, 2014). The Primary and Behavioral Health Care Integration Health Indicator (H Indicator) guideline developed by Rosenberg and Galbreath (n.d.). The H indicator quick guide includes ranges of values for blood pressure, waist circumference, BMI, and fasting plasma glucose.

Patients in mental health centers may have underlying primary health issues such as obesity, hypertension, cardiovascular disease, diabetes mellitus, musculoskeletal disorders, vision issues among other, which warrant additional screening (Janssen, Gerhardus, Schröer-Günther, & Scheibler, 2015; SAMSHA, 2017). Nurses and allied

health professionals need to use specific screening tools to identify physical health problems. Advanced practice registered nurses (APRNs), nurse practitioners (NPs), can also assess, diagnose, and manage individuals with co-morbid SMI and physical health conditions.

Role of Nurse Practitioners in Integrated Care

Aside from identifying behavioral health and significant physical health problems, NPs play multiple roles in promoting integrated care. NPs are highly educated and trained clinical professionals who are competent to diagnose and prescribe medications to patients. In comparison to other nurses whose roles are limited to monitoring and reporting patient health, NPs can assess, diagnose, and manage complex health issues, including prescribing medications. NPs as APRNs are involved in health promotion and maintenance of patients in various primary care and behavioral health clinical settings. NPs can manage both acute and chronic health issues. However, NPs may require dual qualification, trained as a family nurse practitioner (FNP) and as a Psychiatric-Mental Health Nurse Practitioner (PMHNP) in transitioning an individual with a SMI from a behavioral health setting to a primary care setting (Theophilos, Green, & Cashin, 2015). In such cases, dual certified NPs are often preferred to handle patients with SMI and physical health problems in a behavioral health setting.

Dual-certification ensures that the NP is competent to understand patient needs and assess, diagnose, and manage underlying mental health disorders and co-morbid physical health problems. A NP with dual certification in family and psychiatric mental health focuses on 4 critical components during care delivery, (a) collaborative approach, (b) health promotion, (c) psychological and psychosocial integrity of patient, and (d)

provision of safe and comfortable clinical environment to the patient (Phoenix, Hurd, & Chapman, 2016).

Pastore et al. (2013) argued that obtaining primary care is difficult for those with SMI. It is in this instance, that NP, by means of their ability to handle multidimensional health cases, can contribute by developing an approach to address chronic care cases (Boville et al., 2007). The successful intervention by NPs includes the use of approaches to address critical physical, psychosocial, and lifestyle issues. Moreover, NPs face some barriers in their practice in the form of payment rates and their designation on whether they will serve as primary caregivers or as independent nurse practitioners (Iglehart, 2013). In general, NPs are trained and capable of prescribing medications to patients with chronic illnesses. The NP may also independently execute care plans for patients in various settings. These actions are made possible with the creation of evidence-based models of health care. The visits made by NPs can be paid back through the application of Medicare and other healthcare insurances, which makes it a motivator for nurses to engage in visitation practice. Moreover, the NP's compensation and other costs of employing them tend to be more affordable, in comparison to the prohibitive cost of receiving medical attention from physicians (Ezell, Siantz, & Cabassa, 2013).

The engagement of NP's in treating patients with chronic disorders is beneficial as it helps the nurse to gain an even broader experience while creating a more meaningful relationship with the patient. In addition, it is also advantageous because it allows the NP to gain more autonomy while maintaining a good working relationship with other medical practitioners. For example, patients who suffer from SMI are likely to suffer from other underlying health issues that require a closer medical assessment before the

implementation of medical interventions. It is in this instance that the NP must be adequately trained and have the competence to provide an assessment to the patient with a SMI (Ezell, Siantz, & Cabassa., 2013).

Literature Summary

The aim of this review of the literature focused on innovations and methods to enhance the physical health of individuals with serious mental illness. It is evident that it remains a challenge to deliver physical health care to people who suffer from serious mental health problems. Many different strategies were developed, which are designed to address the physical health of individuals with SMI (Appendix A). However, more scientific evidence needs to be translated into practice to identify physical problems among individuals with a SMI seen in community-based behavioral care settings and implement referrals for primary care. Tranter, Irvine, and Collings (2012) suggested that there are some indications that demonstrate the effectiveness of health assessments addressing the physical health problem among people with mental health issues.

This DNP project was designed to help nurses at a local behavioral health center in Mississippi decide on the best possible interventions to improve the physical health of those with SMIs. Based on a recent review, a team of experts indicated that patients with SMI in mental/behavioral health centers should be screened for obesity, hypertension, diabetes, and lipid profile prior to implementing treatment (Baller et al., 2015). In most cases, patients with elevated blood pressure, uncontrolled diabetes, or cholesterol issues may have SMI. Thus, there is a need to identify such patients and provide appropriate treatment to these primary conditions. Patients need to be screened for respiratory conditions such as asthma or chronic obstructive pulmonary disorder (COPD). In some

cases, nurses may need to evaluate patient's thyroid function and refer the patient for optimal treatment (Bahorik et al., 2017). As such, this DNP focused on translating scientific evidence to guide and support nurses in the improvement of the physical health of individuals with SMI.

Framework

The framework for this DNP project was based on Wagner's Chronic Care Model (University of Ottawa, 2017; Wagner, 1998; Wagner, Austin, & Von Korff, 1996). The overall outcomes through Wagner's Chronic Care Model (CCM) is the development of a prepared and proactive team that ensures the patient is informed, educated, and trained to perform key tasks and self-management activities (Miller et al., 2013). The CCM serves as a guide in the development of effective care for chronic diseases. The following outlines the six critical factors that should be addressed for the optimization of care:

1. Delivery system design. The structure of medical practice may need to be altered, creating practice teams with distinct roles for the physicians, nurses, dietitians, and pharmacists.
2. Self-management support. Support must be provided to assist patients with acquiring skills and confidence in self-management.
3. Decision support. Evidence-based practice guidelines should be integrated into daily practices through reminders and consultation with clinical experts.
4. Clinical information system. Computerized information systems should provide reminders of guidelines for care team members, performance quality indicators, and patient registry to facilitate population-based care.

5. Community resources and policies. Linkages are needed between the provider and various community.
6. Healthcare organization. The structure, goals, and values of an organization or health system should identify chronic care as a priority and support innovations for continuous quality improvement (Wagner, 1998).

Wagner's Chronic Care Model (University of Ottawa, 2017; Wagner, 1998; Wagner et al., 1996) describes the necessary mechanisms for an efficient delivery system, which help reassure the fostering of meaningful interactions between the patients and the healthcare providers. In designing the delivery system, there is a need to restructure and create teams that can accommodate diverse roles. Consequently, one of the major elements of designing a healthcare delivery system that is applicable for the current DNP project includes assurance in offering a competent team-based health care team. The focus of this project was geared towards the improvement of health, especially among patients who are suffering from chronic illness. This focus calls for the need to adopt a new system, from one that was reactive, where care was available only when absolutely needed, to a more proactive approach, where focus was to maintain the well-being of a person. This shift in approach means going beyond determining the needed form of care but also, providing a detailed description of the roles and tasks for each team member. Team engagement provides assurance that the patient receives their health care needs through the application of well-structured and planned interactions. The standard procedures call for the need to follow-up on the patient to prevent leaving the patient on their own after visiting the clinic (Wagner et al., 1996).

In alignment with the Delivery System Design, the FNP would play an integral role in managing the safety and well-being of a patients with SMI. The PMHNP and the FNP collaborators would need to work together to provide effective and efficient care to a patient with SMI. Since SMI is a chronic illness, an interprofessional team-based approach comprised of the FNP, PMHNP, other providers, nurses, and case managers is essential. The PMHNP and FNP would collaborate by developing and implementing an individualized care plan for the patient to understand the needs of the SMI population and the current standard of care. The DNP-prepared dual certified FNP/PMHNP would focus on addressing policies and resources that would benefit the patient with a SMI and medical diagnoses.

DNP Essentials

On completion of this project, the DNP essentials and competencies were fully met as listed in Appendix B (American Association of Colleges of Nursing [AACN], 2006). Use of evidence-based protocols to implement a change in the physical health screening and referral practices of providers who care for individuals with SMI that seek behavioral health care at a community-based mental health center, access to care was improved. Improved access to care positively impacted health outcomes.

Evaluation Plan

The Logic Model which served as a dual model that presented the outcomes to be measured and evaluation plans (Appendix C). The logic model depicted activities related to each of the PICOT question components. The activities presented were intended to lead to outcomes. Ultimately, the Logic Model guided this DNP project's development, implementation, and evaluation (AHQR, 2013).

Assumptions

The assumptions for the DNP project were that the development and implementation of a practice protocol in a behavioral care setting for identifying and referring patients with medical problems and SMI would increase the number of referrals to primary care centers for intervention. Increased number of referrals would translate to an increased number of patients with SMI to also receive appropriate primary care. Appropriate primary care would translate into improved health outcomes of the target population.

Project Purpose

The purpose of this DNP Project was to develop and implement an evidence-based integrated screening protocol for adult males (18 and over) diagnosed with SMI and co-morbid physical health problems who were also receiving care in a community based mental health center. The objective was to introduce physical health into a behavioral health setting and provide guidance and strategies for assessing and referring individuals for physical health care. Initially, there was no practice protocol established for clinic staff that outlined specifically how physical health screenings should be implemented, managed, or distributed. Uniform practices for integrated screenings were necessary to ensure continuity of care in how providers would receive the completed report. Staff involved in the integration process would be provided detailed information that could lead to a deeper understanding about implementation and management of mental and primary healthcare integration.

Summary

Chapter I introduced the phenomenon of interest, patients with SMIs.

Background and significance of the problem was introduced as well as the negative impact that lack of integration of behavioral and physical health care has on a population. The framework used to construct this project was discussed and evaluation, assumptions, and project purpose were defined.

CHAPTER II – METHODS

The purpose of the DNP project was to develop and implement an evidence-based screening protocol for physical health problems in a community-based mental health center and implement primary care clinic referrals for adult males (18 and over) with a serious mental illness (SMI) and co-morbid physical health problems. Serious mental illness for this project is defined as schizophrenia, psychosis, or bipolar disorder. The project was implemented after receiving approval from the Institutional Review Board (IRB) at The University of Southern Mississippi (Appendix D), and a letter of support from the organization where the project was completed.

Setting

The DNP project was conducted in one of Mississippi's regional CBMHC. This clinic provides behavioral care services (mental health and substance abuse services) to all individuals ages five and older. The CBMHC was located in an urban, underserved area in Central Mississippi that provides full spectrum, outpatient behavioral health services to residents in the county.

Population

The primary participants in this project were a convenience sample of two onsite registered nurses (RNs), responsible for completing the assessment and referral form on individuals with a SMI. A representative in the medical records department would provide a warm hand off by faxing the referral form to a primary care provider on all male patients over the age of 18 who had a SMI and physical health problem. RNs were chosen to participate in the project since the role of the RN is to complete the initial

assessment form on all patients who are being seen at the clinic. After conducting a needs assessment with key stakeholders at the CBMHC, it was determined that referrals would be sent and received by the medical records representative.

Design

The design of the project was mainly quantitative and descriptive in nature. After appropriate approvals the integrative model was introduced by protocol initiation. The procedures performed for this DNP project are discussed in the next section.

Procedures

The procedures and practice protocol were established as a key part of the CBMHC clinical pathway. The function of the written procedures and practice protocol is to ensure individuals receive comprehensive care management and care coordination.

The reasons for implementing the practice protocol were as follows:

- To promote greater consistency in the response to individuals in need of physical health services as well as behavioral health care;
- To help focus the prioritization of physical health services on those individuals with the greatest needs;
- To provide a basis for improved communication between physical health providers and mental health service providers;
- To provide a structured approach to recording outcomes of physical health assessments; and
- To provide a basis for monitoring of outcomes and identifying areas for physical health service and/or system improvement.

Informed Consent

After obtaining USM IRB approval, permission was obtained from the on-site RNs and medical records representative to participate in the DNP project. After developing an evidence-based protocol for screening and referral for physical health problems, the participants were requested to participate in an informational training on the screening protocol. All participants were informed on the purpose of the DNP project, how to administer a health screening tool targeted for specific physical health problems using a person-centered approach, and how to complete the referral form based on results of the health screening tool.

Develop a Practice Protocol

An evidence-based screening protocol was developed to implement a change in screening and referral practices so that identification and referral of physical health problems in adult male patients with SMI who seek care at a community-based mental health center will improve referrals to primary care clinics. The protocol focused on comprehensive care management and care coordination for health and clinical services to include: early screening and intervention; disease prevention (hypertension, diabetes, dyslipidemia, cardiovascular disease [CVD], obesity and substance use); and referrals. The evidence-based screening protocol was shared with the RNs through a formal presentation with handouts. A pre-test on components of the protocol was given to the RNs prior to informing the RNs of the best practices for screening for physical health problems in a behavioral health care setting. After presenting information in the screening protocol on comprehensive care management and care coordination, a post-test was administered to the RNs to assess increase in knowledge.

Implement Protocol

Screening

At first reception into the CBMHC, the RN completed a health assessment for every patient using the current assessment form for diabetes, hypertension, CVD, and obesity in adult male patients (18 and over) who had a SMI (schizophrenia, psychosis, and bipolar disorder). In addition, waist circumference and body mass index (BMI), was added to the assessment of weight, height, blood pressure, pulse, respiration, glucose, and tobacco use. The Primary and Behavioral Health Care Integration Health Indicator (H Indicator) guideline developed by Rosenberg and Galbreath (n.d.) was used to help the RN to understand physical health triggers for referrals. The H indicator quick guide includes ranges of values for blood pressure, waist circumference, BMI, and fasting plasma glucose.

The Project Director (PD) used evidence-based guidelines to create the protocol. The protocol was used to inform the RN of how to properly identify physical health triggers that lead to adequate referrals (AHRQ, 2014a, 2014b, 2017; NICE, 2014; Rosenberg & Galbreath, n.d.). The RNs were also informed of how to calculate a BMI and measure waist circumference, and document BMI and waist circumference on the current CBMHS assessment form.

Referral

If any physical health triggers for referrals were identified, appropriate patients had a referral form completed by the RN and provided to the medical record representative and the prescribing provider. The referral was made based on physical health problems identified on the assessment form (diabetes, CVD, hypertension, or

obesity). The RN carefully explained to the patient, using a patient-centered approach, why the referral was being initiated. The RN was also responsible for obtaining a signature from the patient on the referral form prior to sending information to the referring primary care provider.

The referral form was given to the designated medical records representative who was responsible for completing a warm hand off via fax to the primary care provider of the patient's choice. If the patient was unable to identify a primary care provider, the referral was made to a local Federally Qualified Health Center (FQHC) who has a common interest in integrated care services. Once a referral was completed, a copy of the referral form was placed in the patient's chart by the RN.

For the DNP project, health screening information was reported by the RN on an evidence-based screening and referral form/data collection tool developed by the PD. De-identified data on the screening and referral form included the date of visit, the age of the patient, reason for the referral, and if referral was completed. The age of the patient was documented on the data collection form by age at the time of the visit.

Ethical Protection of Human Subjects (IRB)

Appropriate measures to protect the rights and welfare of human research participants and their records were taken while completing the DNP project. There were no foreseeable or known risks for this project. Participants were informed of potential benefits from implementing a screening practice protocol including increase skills in identifying patients with physical health problems seen in a CBMHC. Patients with a SMI and physical health problems seen at the CBMHC received comprehensive care management and care coordination by the RN and medical record representative.

Potential benefits included improved health, improved quality of care, and improved access to care for the population served.

Voluntary informed consent was obtained from participants. The PD ensured participants had good understanding of the information throughout every phase of the DNP project process. During data collection, de-identified data was protected using coding and not associated with individual subjects. Data was recorded on the screening and referral data collection tool by the RN participants so subjects cannot be identified or be linked to the subjects through identifiers. To ensure confidentiality and anonymity, information was protected using codes assigned on the data collection tool. Data on the data collection tool was stored under lock in the office files of the RN data collector at the clinic. The RN data collector was the only person who had access to the locked office file. The screening and referral data collection tool was placed in an envelope by the RN data collector and was given to the PD on a weekly basis for analysis and completion of the project. The PD aided in ensuring efficacy of data collection.

Information on the data collection tool was entered in an Excel spreadsheet by the PD to maintain confidentiality. Data was recorded and summarized by the PD so that subjects could not be identified. Electronic data was stored on a password protected computer. Confidentiality was protected by placing all physical data collected in a locked file box kept by the PD, and only the PD had access to the locked file box and drawer.

Data Analysis

This project aims were to evaluate whether development and implementation of an evidence-based screening protocol for physical health problems in a community-based mental health clinic led to identification of physical health problems and referrals to

primary care clinic for adult males (18 and over) with a serious mental illness (SMI) and co-morbid physical health problems. The evidence-based screening protocol was evaluated by administering a short pre and post-test to the RN participants to assess knowledge on screening and referrals. Identification of and referrals for physical health problems was analyzed from data reported on the screening and referral data collection tool. The data was coded and put in an excel spreadsheet for and then exported into SPSS for descriptive statistical analysis. A measure of central tendency was done to include mean, median, and mode.

Summary

Chapter II introduced and discussed the methodology used for this DNP project. Information pertaining to the setting, population, and design were presented. Ethical considerations and data analysis were also defined.

CHAPTER III - RESULTS

Introduction

The purpose of this DNP project was to develop and implement an evidence-based screening protocol for physical health problems in a community-based mental health center and implement primary care clinic referrals for adult males (18 and over) with a serious mental illness (SMI) and co-morbid physical health problems. The function of the practice protocol was to ensure that individuals receive comprehensive care management and care coordination for health and clinical services to include: early screening and intervention; disease prevention (hypertension, diabetes, dyslipidemia, cardiovascular disease, obesity, and substance use); and referrals. The treatment, care, and management of patients with a serious mental illness and allied co-morbid health issues is a complex and challenging process. Data was collected over a four-week period.

Pre-Test/Post-Test

Prior to informing the two RN's of the best practices for screening for physical health problems in a behavioral health setting a pre-test on the components of the protocol was given and both RN's scored 80%. After, presenting information in the screening protocol on comprehensive care management and coordination, a post-test was administered to the RN's to assess increase in knowledge. There was a 20% increase in both scores with both RN's scoring 100% on the post-test.

Screening Protocol

The integration of primary care services within a community-based mental health center was possible through the development of an evidence-based screening protocol for

physical health problems. Three primary participants (two onsite registered nurses and one medical records representative) consented to participate in the project. All participants attended the informational training on the screening protocol to understand how to administer a health screening tool targeted for specific physical health problems using a person-centered approach and how to complete the referral form based on results of the health screening tool.

Assessment and Screening

RNs continued to use the completed health assessment for every patient using the current assessment form for diabetes, hypertension, CVD, and obesity in adult male patients (18 and over) who have a SMI. Additionally, waist circumference and BMI, was added to the assessment of weight, height, blood pressure, pulse, respiration, glucose, and tobacco use. Physical health triggers for 35 male adult patients (18 and over) with a SMI and physical health problems met the inclusion criteria based on the screening tool.

The screening tool was comprised of 9 major sections, (a) waist circumference, (b) body mass index (BMI), (c) weight, (d) height, (e) blood pressure, (f) pulse, (g) respiratory rate, (h) tobacco use, and (i) glucose. These sections were used to assess the physical health of individuals to determine the need for collaborative primary healthcare referral/services. The rationale for using the screening tool was to identify adult patients with co-morbid physical health problems.

Outcome

The mean age of the sample population was 41.88 years. Of the patient participants, 40% (14) were smokers. The next high-risk health issue observed was high glucose levels, 8 adults or 23% of the sample had elevated glucose levels. A total of 7

(20%) of adults with SMI were reported to have hypertension. There were 6 (17%) adults who were found to be obese. In this case, the screening tool helped in identifying such patients which would necessitate the need for a primary care referral.

Summary

Chapter III discussed results of the integrative protocol. Results included pre- and post-test scores of key clinic representatives as well as co-morbid conditions found in screened individuals. Chapter III also presented results that show the need for integrated behavioral and physical health care.

CHAPTER IV – DISCUSSION

Summary of Major Findings and Interpretation of Results

Assessment of physical health problems in patients with a serious mental illness (SMI) is often neglected in behavioral care practices due to the lack of a consensus guideline or protocol. This DNP project was implemented to develop and implement an evidence-based screening protocol for physical health problems in a community-based behavioral health center and implement primary care clinic referrals for adult male patients (18 and over) with a SMI and co-morbid physical health problems. A change in practice was implemented to screen for physical health problems, and screening improved identification of physical health problems.

Develop Screening Protocol

The successful treatment and management of individuals with a SMI and physical health problems is based on effective and efficient screening. An evidence-based protocol for screening and referral of targeted physical health problems in a behavioral health center was developed. The protocol included procedures for screening and referral, health indicators, physical health triggers for referrals, workflow for referrals, and a referral form.

Implement Protocol

Screening. The screening protocol and tool used in the project was helpful in identifying two of the most common physical health co-morbidities, diabetes, and hypertension, among adults with a SMI. In this case, comprehensive care management was implemented by the nurses through evidence-based physical health screening in adult

males with SMI in a behavioral health center. Based on physical health problems identified through screening in this project, the integration of primary care services in a behavior health center is potentially beneficial for this population and setting. The behavioral health center is currently operating at level four, close collaboration, of integration. Level four interventions at the clinical delivery key differentiator address specific screening and collaborative treatment with shared training based on the needs of the population of interest (Heath et al., 2013). The development and implementation of an evidenced-based screening protocol to identify physical health problems caters to the needs of individuals with SMIs. Integrated care is an essential aspect in caring for individuals with mental health issues such as SMIs (Pastore et al, 2013). Consequently, the results of the project revealed the importance of supporting measures to integrate primary care services in a behavioral health center. While integrating physical health services into a behavioral health center may prove challenging due to the shortage of health care professionals, the organization supported RNs gaining access to trainings related to the evidence-based screening protocol. For example, the RNs were able to execute screening and referrals with the support of an evidence-based protocol while caring for individuals with a SMI.

Findings from the project are further strengthened by the RNs who participated in the project demonstrating knowledge and skills in implementing the screening and referral protocol with individuals who have a SMI diagnosis and physical health problems. The use of an evidence-based screening protocol is essential in assessment and promotion of health for individuals with a SMI. Druss et al. (2010) found that care management by nurses at a community-based mental health center in an urban setting

improved diabetes, coronary artery disease, and cholesterol outcomes for individuals with a SMI. It is often difficult for patients with SMI to access primary care (Pastore et al., 2013); therefore, training RNs on an evidence-based protocol addressed the unique physical health needs of individuals with a SMI that require referral to a primary care setting. After training was implemented on the evidence-based protocol, the participating RNs scores increased 20% from pre-test to post-test. The RNs knowledge increased on the physical health intricacies associated with caring for individuals with SMIs. The RNs were able to identify screening tests to perform and at-risk ranges of physical health indicators that would require a referral.

Referral. The aim of the project was to identify physical health problems through screening and improve access to primary care by initiating referrals to a primary care provider. Although physical health problems were identified in individuals with a SMI, the referral form was not completed since an established primary care provider was providing care for physical health problems. Identification of physical health problems among individuals with a SMI also acknowledged the need for management of the physical health problems in a behavioral care setting.

Comprehensive care management of physical health problems among individuals seeking care at the behavioral health center at level 4, close collaboration, is onsite care with some integration (Heath et al., 2013). Consequently, co-located care through the adoption of evidence-based practice screening protocol with referrals onsite should be considered. Certified family nurse practitioners (FNP) and psychiatric and mental health nurse practitioners (PMHNP) have qualifications to care for physical health and behavioral health problems. According to Theopilos et al (2015), patients who suffer

from serious mental illness may face issues in transitioning from a different type of healthcare setting, such as the transition from a primary care to a behavioral care setting. There are barriers to practice in the role of a primary care provider or as an independent provider (Iglehart, 2013) and the barriers exist for the dual certified FNP and PMHNP professionals in behavioral healthcare centers. To meet the medical needs of individuals with a SMI, NPs must be trained and competent to conduct a medical assessment and provide interventions (Ezell et al., 2013).

Limitations

This project had several limitations. First, the data were collected within a short period, over 4 weeks. Likely a longer duration for completing the project would have allowed collection of additional and relevant data to support the project question. Second, the short duration of the project did not allow the project director to determine if all individuals with a SMI had an established primary care provider. Utilizing the referral form to implement referrals to primary care providers would assist in determining if access to primary care improved. The RNs stated that some of the reasons given for not completing the referral form by signature were: a) identified primary care provider, b) transportation constraints, and c) lack of trust. Future assessments should include obtaining a medical history to include the name of the primary care provider for physical health problems as well as information on last and next scheduled visits with the primary care provider to share screening results for physical health problems.

Implications

The levels of integrated care (Heath et al., 2013) and the chronic care model (University of Ottawa, 2017; Wagner, 1998; Wagner et al., 1996) were utilized to

develop and implement a physical health screening protocol for adult males over 18 with SMI. As an organizational and systems leader, the Project Director led care delivery approaches to screen for physical health problems in a behavioral care setting. Effective communication and collaborative skills were utilized in the development and implementation of a practice protocol. The evidence-based protocol was designed to improve patient and systems outcomes.

Changes in nursing practice occurred because of completion of this project. Nurses were educated on how to identify physical health problems in patients with SMIs and initiate nurse initiated appropriate referrals to a primary care provider. Implications for future practice are to establish the significance of an evidence-based screening protocol to identify physical health problems in patients with SMI who seek care at a behavioral health center. When sharing results with key stakeholders at the behavioral health center where the project was conducted, suggestions included developing policies and procedures to implement the evidence-based screening protocol. Additional training for nurses to prevent medical and social problems should be provided to assess and monitor social and physical health indicators over time. Training should focus on targeted health screening, disease prevention, health promotion, and health education interventions. Further education and information dissemination for the nurses about the screening protocol is a critical aspect to equip the nurses with required knowledge and skills.

Further evaluation on mechanisms to follow-up with established primary care providers identified by individuals with a SMI is warranted. The goal for the follow-up and referral is to track referrals and improve coordination of care between the primary

care and behavioral care providers. Additional training on person-centered care and utilizing the services of a case manager may improve completion of referrals to primary care services and address trust issues. Dually-certified FNP and PMHNPs who have the knowledge and skills to assess and manage SMI and comorbid physical health illnesses would be a consideration in additional evaluations. For those individuals with transportation problems and those without a primary care provider, NPs who are dually certified are fully competent and equipped to provide comprehensive care management for medical and behavioral health problems, thereby, increasing access to primary care in a behavioral care center. Potential long-term benefits from this project include primary and behavioral care systems will be integrated at the highest level of integration to reduce stigma, improve patient outcomes, eliminate barriers to care, and improved quality, cost-effective care.

Conclusions

This DNP project demonstrates that an evidence-based screening protocol for identifying physical health problems in patients with SMI was effective. The practice protocol was developed and implemented as a key part of the behavioral health center clinical pathway. The protocol focused on comprehensive care management and care coordination for health and clinical services to include screening to identify physical health problems that would necessitate a referral to a primary care provider. Through the implementation of the screening protocol, nurses were able to identify physical health triggers that prompted a referral to a primary care provider.

APPENDIX A – Literature Matrix

Author(s) Year	Goal/Aim	Sample Technique	Population	Data Collection	Findings Outcomes Recommendations
Agency for Healthcare Research and Quality (2014)	To find out the best treatment modality for psychosis and schizophre nia in adults	The sampling technique applied was the purposive approach. Only patients who were aged 18 years and above were sampled for the study.	N= 215	Data collection for the study is observation and by conducting a survey that assess the patient’s symptomatology.	A guideline was created by the NCCMH to improve the care and treatment for patients with psychosis and schizophrenia. The guidelines would be beneficial in managing patients with schizophrenia. The guideline can be used together with Service user experience in adult mental health. It can be used by people with schizophrenia and even the carers. This would provide hope and optimism to the patients. Treatment, help, and care would be properly given to them. The guidelines also adapt to the race, culture, and ethnicity of the patients. Even the minority groups would be ensured with proper psychological treatment.
American Heart	The aim of the	Purposive sampling	Total population	Clinical surveys of	Key screening tests to monitor

<p>Association (2017)</p>	<p>study is to examine the factors implicated in cardiovascular events</p>	<p>technique employed. Sample consisted of individuals who have predisposing factors for cardiovascular conditions.</p>	<p>under study= 135.</p>	<p>the patients under study.</p>	<p>cardiovascular health such as blood pressure, cholesterol, body weight, blood glucose, smoking, diet, and physical activity. The proper schedule of taking recommended screenings are also stated in the website. Screenings for blood pressure, body mass index, waist circumference, blood glucose, and smoking are provided. It is recommended that individuals who are 45 years old and above to take the prediabetes screening.</p>
<p>Bahorik, A., Satre, D., Kline-Simon, A., Weisner, C., & Campbell, C. (2017)</p>	<p>To assess the patients with SMI</p>	<p>Random-controlled sampling.</p>	<p>25,090 patients with ICD-9 SMI diagnosis. Those with bipolar disorder are 20,308 while 4782 for schizophrenic patients. 25,090 for controls who do not have SMI but with the same age,</p>	<p>Secondary analysis of electronic health data</p>	<p>Patient with SMI are more likely to have medical comorbidities such as chronic and severe conditions. There was no significant association between musculoskeletal disease and schizophrenia. SMI patients are recommended to have outreach strategies that would address disease prevention, early diagnosis.</p>

			gender, and medical home facility.		Treatments that would address comorbidities would be given if screening tests are done early.
Baller, J., McGinty, E., Azrin, S., Juliano-Bult, D., & Daumit, G. (2015)	To investigate the health screening tools for cardiovascular events.	Retrospective method	N= 205 A total of 10 articles reviewed.	Secondary analysis of peer-reviewed journals on cardiovascular screening tools.	Time periods vary in checking the screenings tests of the study population. There are various screening tests for cardiovascular risk for patients with mental illness. Improvements are still recommended. Standard screening tests can be beneficial in detecting serious mental illnesses. Ranges vary depending on what is being tested. For lipid test, 6-85%. For hypertension, 79-88%. There were no measures identified that would meet the criteria.
Benjamin, D., Silke, A., von Esenwein, Compton, M., Rask, K., Zhao, L., & Parker, R. (2010)	To assess the benefit of care management in mental health conditions.	Random sampling technique.	407 individuals with severe mental illness in urban areas	Data collection process achieved by administration of questionnaire and observation.	Care management can improve care for patients with mental health illnesses.

Heath, B., Romero, P., & Reynolds, K. (2013)	To investigate the relationship between levels of healthcare and the outcome	Random sampling technique.	N= 153 patients recruited into the study	Cross-sectional study design and administration of in-depth interviews for data collection.	There are different levels of health care and frameworks should be based on these various levels. There should be a standard classification of integrated settings so it would be precise and clear. A functional standard framework is proposed to classify the sites.
Janssen, I., Gerhardus, A., Schroer-Gunther, M., & Scheibler, F. (2015)	To identify those studies which evaluated preferences for outcomes in health conditions	Eligible studies on patients' preferences, their families, health care professionals	Patient population = 127	Data collection achieved by conducting surveys. Search strategy done on various databases such as Medline Plus, PubMed and CINAHL.	There is no specific method obtained that could be most suitable in evidence syntheses. Further studies are recommended.
SAMHSA (2017)	To evaluate the health indicators.	Purposive sampling technique	N=190	Observation and clinical surveys adopted for the study.	The health indicators reveal whether patients are at risk and need further care. At risk range levels include those of high blood pressure, HDL or high density lipoprotein, pre-diabetes
Tranter, S., Irvine, F., & Collins, E. (2012)	To evaluate the health assessment	Random sampling was applied to identify papers on	N=38	Review method of Whittmore and Knafel was adopted.	Although health assessments were proven to be effective when diagnosing health

	procedures employed in healthcare	health education, assessment, and multimodal interventions		Three themes were used	problems, evidence for health education is still not conclusive. There are not enough evidence for multimodal and health education interventions. There should be innovations implemented to improve the physical health of patients with mental illnesses.
Fracolli, L., Gomes, M., Nabao, F., Santos, M., Cappellini, V., & de Almeida, A. (2014)	To find out the extent of use of primary healthcare tools.	Random sampling	N=3,048 results from various countries	National and international databases from 1979-2013	Most primary health care assessment tools were used internationally. PCAT was most commonly used in Portugal while PCAT and EUROPEP in Brazil.
Rosenberg, L. & Galbreath, L. (n.d.)	To assess the efficacy of the physical health indicators and RAND Criteria and PBHCI Multisite Evaluation	Purposive sampling for the research subjects	N=72	Health indicator database that had use of questionnaires	Physical health indicators are in the 'at risk' range when values exceed the limit.

Agency for Healthcare Research and Quality (2012)	Analysis of the benefits of evidence-based research	Random sampling of the available Evidence-based studies	N=129	Data obtained by conducting surveys.	Evidence based research can provide sound recommendations
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APPENDIX B – DNP Essentials

Essential	DNP Project
Scientific underpinning for practice	The project integrated nursing science with knowledge from organizational science as the highest level of nursing practice. The levels of integrated care and the chronic care model were utilized to develop and implement a screening protocol for adult males over 18 with SMI.
Organizational and systems leadership for quality improvement and systems thinking	Developed, implemented, and led care delivery approaches to screen for physical health problems in a behavioral health clinical setting.
Clinical scholarship and analytical methods for evidence-based practice	Critically appraised existing literature and evidence-based guidelines to implement the best practice for screening and referrals.
Information system/technology for the improvement and transformation of health care	Developed and executed a practice protocol and evaluation plan involving existing practice databases.
Health care policy for advocacy in health care	Critically analyzed health policy related to integrated care delivery from the perspective of consumers, nurses, and other health professions.
Interprofessional collaboration for improving patient population and population outcomes	Employed effective communication and collaborative skills in the development and implementation of a practice protocol.
Clinical prevention and population health for improving the nation's health	Analyzed scientific data related to individuals with SMI in order to improve health status and access to care.
Advance nursing practice	Demonstrated advanced levels of clinical judgment, systems thinking and accountability in implementing evidence-based practice protocols to improve patient outcomes.

APPENDIX C – Evaluation Plan

The Logic Model promotes the development of integrated primary and behavioral health services to better address the primary health care needs of adult males with SMI.

Input	Activities	Short-term Outcomes	Mid-term Outcomes	Long-term Outcomes
Educational materials Prescriber Staff Support staff (RN's and MR's) Time Research base	<p>Educate staff on how to effectively communicate with patients, using a patient-centered approach, about physical health conditions</p> <p>Implement evidence-based physical health screening in adult male patients with a SMI after protocol is developed.</p> <p>Send a strong message to patients about the importance of all aspects of their health care</p> <p>Refer patients identified as having a physical health problem to a primary care provider.</p> <p>.</p>	<p>Early identification of physical health problems</p> <p>Staff will initiate appropriate referrals for primary care</p>	<p>Assess and monitor physical health indicators over time</p> <p>Treatment and/or referral of physical health conditions become the norm rather than the exception in the behavioral health setting.</p> <p>Increased levels of collaboration and integration between primary care and behavioral care providers.</p> <p>Providers understand the different roles of team members and initiate change in practice and the structure of care to improve patient outcomes.</p>	<p>Primary care and behavioral care systems will be integrated at the highest level of integration to reduce stigma, improve patient outcomes, eliminate barriers to care, and provide quality, cost-effective care</p>

APPENDIX D – IRB Approval Letter



INSTITUTIONAL REVIEW BOARD

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NOTICE OF COMMITTEE ACTION

The project has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services (45 CFR Part 46), and university guidelines to ensure adherence to the following criteria:

- The risks to subjects are minimized.
- The risks to subjects are reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered regarding risks to subjects must be reported immediately, but not later than 10 days following the event. This should be reported to the IRB Office via the "Adverse Effect Report Form".
- If approved, the maximum period of approval is limited to twelve months.
Projects that exceed this period must submit an application for renewal or continuation.

PROTOCOL NUMBER: 17112001

PROJECT TITLE: Evidence-Based Practice Screening Protocol to Integrate Physical Health Services into a Behavioral Health Center

PROJECT TYPE: New Project

RESEARCHER(S): Debra Evon Bell

COLLEGE/DIVISION: College of Nursing

DEPARTMENT: Leadership and Advanced Nursing Practice

FUNDING AGENCY/SPONSOR: N/A

IRB COMMITTEE ACTION: Exempt Review Approval

PERIOD OF APPROVAL: 12/07/2017 to 12/06/2018

Lawrence A. Hosman, Ph.D.

Institutional Review Board

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