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Evidence-Based Strategies for Improving Medication Adherence Among Psychiatric Patients: A Systematic Review

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This is to certify that the doctoral study by

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has been found to be complete and satisfactory in all respects,
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Walden University
2020

Abstract

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MS, Herzing University, 2016

BS, Southwestern Adventist University, 2012

Project Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

Nonadherence to psychotropic medications among patients with serious and persistent psychiatric disorders, including bipolar disorder and schizophrenia, is approximately 70%. Nonadherence is a common barrier to the treatment of individuals with mental health disorders. However, there is limited awareness of evidence-based interventions and strategies to address this problem. Therefore, the question for this project asks whether a systematic review can identify strategies to improve adherence of psychotropic medications among individuals with serious and persistent mental illness. The purpose of this systematic review was to explore the evidence-based strategies that can aid in increasing medication adherence in patients with mental health disease. Sources of evidence included online databases such as Walden University Library, PubMed, Cochrane Collaboration, PsychINFO, ProQuest, EBSCOHost, Google Scholar, and Joanna Briggs Institute. The health belief model provided foundation for this project by supporting awareness and self-efficacy of medication adherence. Preferred Reporting Items for Systematic Reviews and Meta-Analyses was used to analyze the evidence. Findings revealed that a healthcare staff collaborated education approach targeted toward the patient or to the patient and family members was the most effective strategy to support medication adherence. Other evidence-based interventions such as home-based physical exercise programs, cognitive-behavioral and motivational strategies, blister packaging, financial incentives, and cost sharing were also found to improve adherence. This systematic review elicits positive social change in practice by facilitating adherence to psychotropic medications; thus, reducing hospitalization and comorbidity.

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Dedication

This doctoral project is most dedicated to the Lord Almighty, who has been my guide from the beginning of this journey until its completion. I want to thank, first of all, my husband, Tony Tsikada, who has always been my pillar, support, spiritually, emotionally, and financially. My children Pastor Malvern, Lynn, Lynda, and Shumirai, your prayers were answered. You allowed me to lead you by example as I balanced family life, work, and school. You were my cheerleaders. I also dedicate this doctoral study to my late mother, Mirriam Coine, who started this journey with me but taken away last year without witnessing this success, she prayed for me daily. My in-laws Patson and Constance Tsikada, you never got tired of praying for my success, thank you for your unconditional love. My siblings Octavia, Farai, and Tarisai, the phone calls and love you gave me. I want to thank you, Pastors Eilex and Dr. Everjoice Muzvondiwa, Pastors Leo and Agnes Huvaya, Pastors O.J. Kuye, and Bisi Kuye, Pastors Michael and Mary Oyenia, Pastors Godfrey and Nomsah Jowah, for your tireless prayers and being my role models. My advice to the young generation is that if I have done it, it means you can all succeed and achieve your set goals. If you fall, do not give up, get up, and keep moving.

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Thank you all for your continued support as I work towards making a difference to the population and community I serve, and this will bring a social change and will continue working as an agent for change.

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Section 1: Nature of the Project

Introduction

Medication nonadherence is a significant challenge for psychiatric clinicians because it increases the possibility of complications and readmissions, thus, increasing healthcare expenditure for patients with serious and persistent mental illness (SPMI; Cutler et al., 2018). Nonadherence to psychotropic medications takes place at the initial, implementation, and persistent stages of clinical therapy for this population (Torres-Robles et al., 2018). The Centers for Disease Control and Prevention (CDC) has also identified medication nonadherence as a global problem, especially in long-term therapies (Neiman et al., 2017). Nonadherence to psychotropic medications has also been associated with various adverse outcomes, including suicidal tendencies, deterioration of prognosis, and lower quality of life among psychiatric patients (Cutler et al., 2018). For example, nonadherence is linked to mortality, violence, and hospital readmission among patients with schizophrenia (Steinkamp et al., 2019; Torres-Robles et al., 2018).

Medication nonadherence among individuals with mood disorders such as bipolar disorder and major depressive disorder has also been linked with slower initial recovery, high suicide risk, and hospitalizations (Jawad, Watson, Haddad, Talbot, & McAllister-Williams, 2018; Steinkamp et al., 2019). These studies highlight the importance of medication adherence across various mental health disorders.

The advent of more effective psychotropic medications has ushered in an era in the management and treatment of SPMI, improving the ability of many patients to live independently (Montejo, Montejo, & Baldwin, 2018). However, to attain maximum benefit,

patients with mental health disorders have to take all medications and therapies as prescribed by their clinicians (Montejo et al., 2018). Studies have indicated that nonadherence to psychotropic medications can result from socioeconomic-, treatment, condition, patient, and health system-related factors (Cutler et al., 2018; Semahegn et al., 2018; Steinkamp et al., 2019; Torres-Robles et al., 2018). Mental health disorders pose significant challenges for patients, making it difficult to adhere to prescribed medications (Cutler et al., 2018).

In this systematic review, I sought to identify evidence-based strategies that are employed to improve medication adherence among patients with SPMI. This project has the potential to identify positive social changes in practice that could increase adherence to psychotropic medication therapies, improving quality of life, and decreasing hospitalization.

Problem Statement

Despite the ability of psychotropic medications to minimize the severity of mental health disorders, many patients still abandon prescribed medications prematurely (Montejo et al., 2018). The prevalence of medication nonadherence among mental health patients is considerably high and varies based on disorders (Semahegn et al., 2018). For patients with schizophrenia, nonadherence rates range from 41-50%, while for those with depression, it is between 13% and 52% (Steinkamp et al., 2019). Also, individuals with opioid dependence and anxiety disorders have nonadherence rates of 68% and 57%, respectively (Steinkamp et al., 2019). According to Chakrabarti (2016), the rate of medication nonadherence among patients with mental health conditions could reach 70%. These statistics provide a glimpse of how severely the problem of nonadherence affects psychiatric clinicians in the United States.

In the United States, hospitalizations resulting from medication nonadherence cost over $100 billion every year (Shafrin et al., 2017). In addition, the annual cost of nonadherence to psychotropic medications among patients with mental health illnesses is approximately $1.5 billion (Shafrin et al., 2017). A recent study by Cutler et al. (2018) also indicated that the estimated cost of nonadherence to psychotropic medication is $3,252-$19,363 for every patient. Given that about 46.6 million adults in the United States are affected by mental health disorders annually, there is a need for more effective interventions to improve medication adherence in this population (Substance Abuse and Mental Health Services Administration [SAHMSA], 2017). These figures highlight the extent of nonadherence to prescribed treatment regimen aimed at managing psychotic symptoms among patients with SPMI.

According to Harrison, Kats, Williams, and Aziz-Zadeh (2019), persistence or maintaining adherence to psychotropic medications is difficult, and the nonadherence rate worsens over time. Nonadherence to psychotropic medications is a significant challenge because it increases the patients' risk of readmission, suicide, and deterioration, and reduces their quality of life (Borba et al., 2018). Research has indicated that nonadherence can also affect the patients' health negatively; thus, increasing the overall healthcare costs for managing mental health disorders (Cutler et al., 2018; Joe & Lee, 2016). In addition, some patients with SPMI lack adequate support and access to medications, and others have a misconception about the effectiveness of antipsychotics, which increases the likelihood of nonadherence (El-Mallakh & Findlay, 2015). Therefore, there is a need for psychiatric facilities to adopt new and more effective strategies for promoting adherence to psychotropic medications.

Over the past few decades, health practitioners have been trying to address the problem of medication nonadherence by designing various educational, therapeutic, technological, and pharmacological interventions (Martin, Feig, Maksoudian, Wysong, & Faasse, 2018). An increase in awareness of the most effective strategies for improving adherence to psychotropic medications can be applied in practice to improve patient outcomes (Jawad et al., 2018). Reducing nonadherence can reduce morbidity and minimize the cost of care for mental health patients, thus decreasing the burden for families and psychiatric facilities (Cutler et al., 2018; Joe & Lee, 2016; Rao, George, Sudarshan, & Begum, 2017)

Purpose

The purpose of this systematic review was to explore the evidence-based strategies that can aid in increasing medication adherence in mentally ill patients. The guiding practice-focused question was, "What evidence-based strategies can be implemented by healthcare providers to improve adherence to antipsychotics among individuals with SPMI?" There is a gap in the literature regarding evidence on the improvement of medication adherence among patients with mental health disorders (Kleinsinger, 2018). The project has the potential to address the gap-in-practice relating to the most effective strategies and interventions for improving adherence to antipsychotics among individuals with SPMI. The systematic review facilitated the synthesis of relevant evidence regarding the most effective strategies for improving medication adherence among patients with SPMI.

Nature of the Doctoral Project

For this project, I employed a systematic review design to explore the most recent and relevant literature on evidence-based strategies for increasing medication adherence among

patients with SPMI. The rationale behind the use of a systematic review design is because of its principles of replicability, rigor, and transparency that increase the strength and quality of evidence (Booth, 2016).

Viswanathan et al. (2018) indicated that systematic reviews are reliable because they facilitate broader research while maintaining focus on empirical evidence as opposed to preconceived knowledge of a given problem. A primary advantage of systematic reviews is that they help in reducing implicit researcher bias by employing broad literature search strategies, uniform inclusion-exclusion criteria, and predefined search terms (Booth, 2016). Additionally, systematic reviews facilitate the careful evaluation of research problems and questions from the onset, including the analysis of interventions, populations, associated comparisons, and findings (Sturm & Sunyaev, 2019). The focus improves the investigators' likelihood of addressing the research questions more objectively and clearly (Viswanathan et al., 2018).

The primary sources of evidence included peer-reviewed studies on evidence-based strategies for improving medication adherence among patients with SPMI. The studies were obtained through a comprehensive literature search on reliable online databases, including Walden University Library, Cochrane Collaboration, PubMed, PsychINFO, EBSCOHost, ProQuest, Google Scholar, and Joanna Briggs Institute.

Systematic reviews have various benefits over traditional literature reviews. For example, the investigators' increased focus is an advantage over traditional literature reviews, which are based on results from previous research without consideration of the study design, analytical methods, data collection, sample size, and data (Sturm & Sunyaev, 2019). In addition, systematic reviews focus on validity, impact, and strength of evidence (Sturm & Sunyaev, 2019).

Synthesizing information on the research designs, causality, and analytical methods used in the selected studies allowed the DNP student to evaluate the robustness and reliability of the collected evidence (Booth, 2016). Systematic reviews are also more reliable compared to traditional literature reviews because they follow a clear protocol that guides the investigator throughout the project and improves transparency (Munn et al., 2018).

However, the systematic review design also has several limitations that could influence the quality of the findings (Munn et al., 2018). For example, systematic reviews are sophisticated and require access to several databases and peer-reviewed studies, which can be challenging and expensive for students (Sturm & Sunyaev, 2019). Another potential limitation of systematic reviews is that literature searches on institutional databases can undermine the objectivity and introduce bias (Munn et al., 2018). As indicated by Viswanathan et al. (2018), the search strings in different databases can be discarded or adapted altogether because the websites are designed using specific search functions. As a result, investigators can miss a potentially large number of relevant studies.

The inclusion-exclusion criteria of systematic reviews may also introduce bias during screening and may result in research team members having different interpretations (Sturm & Sunyaev, 2019). According to Munn et al. (2018), systematic reviews have a high likelihood of subjectivity when screening studies and when a large project team is involved. Because every team member interprets the inclusion-exclusion criteria differently, there is a high likelihood of subjectivity that may negatively influence the findings (Sturm & Sunyaev, 2019). In addition, systematic reviews are affected by resource and time constraints, which can be another source of bias (Viswanathan et al., 2018). The systematic review was aimed at addressing the gap in

research on effective evidence-based strategies for improving adherence among patients with SPMI. It was anticipated that the findings of this systematic review would improve the understanding of evidence-based practices for improving adherence to psychotropic medication among SPMI patients and improve their health outcomes.

Significance of the Project

Nonadherence to psychotropic medications is a significant public health problem in the United States. Recent studies have associated nonadherence to psychotropic medications with increased recidivism and emergency department visits, higher costs of care, and higher mortality rates among individuals with mental health disorders (Cutler et al., 2018; Goldstone et al., 2015; Joe & Lee, 2016). Adherence to psychotropic medication is an essential concern, especially for patients with severe mental health issues, including bipolar disorder, schizophrenia, and posttraumatic stress disorder (Penninx & Lange, 2018). Wide variations in nonadherence rates among individuals with SPMI have been reported over the recent past. For example, Fiszdon, Kurtz, Choi, Bell, and Martino (2015) found that the adherence rates for schizophrenic individuals ranged from 25-75%. However, a similar study by Ibrahim, Yahya, Pindar, Wakil, Garkuwa, and Sale (2015) indicated that the adherence rate for the same population is approximately 50%.

The significance of the systematic review is based on the need to explore the problem of medication nonadherence among patients with mental health disorders in the United States. Recent statistics indicate that clinicians report cases of nonadherence for up to 70% of the mental health patients (Chakrabarti, 2016). The systematic review improved the understanding of the evidence-based strategies for promoting adherence among patients with SPMI. The findings of

this systematic review could significantly influence mental patients' outcomes if applied in practice. In addition, the insight provided by the findings of this systematic review could influence the type of strategies employed by psychiatric clinicians to improve medication adherence among patients with mental disorders. The systematic review also has the potential to elicit positive social change in practice by facilitating improvement in adherence to psychotropic medications; thus, reducing hospitalization and comorbidity. The systematic review could have a significant influence on all stakeholders in psychiatric care facilities by introducing change in medication adherence among patients with SPMI. Improved medication adherence would reduce hospitalizations among patients with mental illnesses such as bipolar disorder and schizophrenia (Steinkamp et al., 2019). The systematic review would facilitate the synthesis of evidence-based strategies for improving adherence among patients with SPMI.

The systematic review can facilitate a positive change in practice by enhancing psychiatric clinicians' understanding of evidence-based strategies for improving adherence to psychotropic medications among patients with SPMI. As a result, clinicians can educate patients and implement the most appropriate interventions to each patient; thus, enhancing patient outcomes (Borba et al., 2018). The systematic review also has the potential to introduce positive change in practice by improving adherence to psychotropic medications, hence decreasing the risk of comorbidities and subsequently reducing healthcare costs for adult individuals with mental health disorders (Borba et al., 2018). Improved health outcomes among psychiatric patients would also reduce the rate of rehospitalization and increase the amount of CMS reimbursements.

Summary

Despite the effectiveness of psychotropic medications in reducing the symptoms of psychiatric disorders, a large proportion of mental health patients still fail to fully comply with prescribed regimens (Steinkamp et al., 2019). Estimates indicate that nonadherence to psychotropic medications among individuals with mental health disorders can reach up to 70%, highlighting the need for effective evidence-based practices to address the problem (Chakrabarti, 2016). The purpose of this systematic review was to explore the evidence-based strategies that can aid in increasing medication adherence in mentally ill patients.

This section has provided a comprehensive overview of the background of the problem involving nonadherence to psychiatric medication among adults with SPMI. The guiding practice-focused question was, "What evidence-based strategies can be implemented by healthcare providers to improve adherence to antipsychotics among individuals with SPMI?" A systematic review was conducted to synthesize the most relevant and recent evidence on strategies for improving adherence to psychotropic medications among adult patients with SPMI. The benefits of using a systematic review design include enhanced objectivity and transparency, broader literature search, and minimization of the chance of implicit researcher bias (Ahn & Kang, 2018). Findings from this systematic review are significant because they can improve awareness of evidence-based strategies for improving medication adherence among patients with SPMI. An increase in adherence would improve the patients' health outcomes, improve their quality of life, and reduce the healthcare burden of this population on their family and psychiatric institutions (Jawad et al., 2018). The systematic review also has the potential to effect positive social change in practice because it could minimize comorbidities and reduce the patients'

frequency of rehospitalizations. Section 2 presents a comprehensive review of the background and context of the problem, the Iowa model of evidence-based practice, the relevance of the systematic review to nursing practice, and the role of the DNP student.

Section 2: Background and Context

Introduction

Nonadherence to psychotropic medications is a serious public health issue in the United States because of its consequences for the patients, their family members, and the healthcare sector (Gebeyehu et al., 2019). As a result, various evidence-based interventions have been adopted to help improve mental health patients' adherence to prescribed medications (Costa et al., 2015). The purpose of this systematic review was to explore the evidence-based strategies that can aid in increasing medication adherence among individuals with SPMI. Despite the effectiveness of psychotropic medications in reducing the severity of mental health disorders, the majority of mentally ill patients still fail to optimally adhere to prescribed drugs (Montejo et al., 2018). The prevalence of medication nonadherence in mentally ill patients is significantly high despite the implementation of various therapeutic, pharmacological, educational, and technological interventions by health practitioners (Martin et al., 2018). There is also a lack of adequate literature on the most effective strategies for improving adherence among individuals with SPMI. The goal of conducting this systematic review was to address the practice-focused question, "What evidence-based strategies can be implemented by healthcare providers to improve adherence to antipsychotics among individuals with SPMI?"

This section involves a discussion of the concepts, models, and theories relevant to the problem of nonadherence to psychotropic medications among patients with SPMI. Furthermore,

I describe the relevance of the systematic review of nursing practice and how the findings could be applied to improve health outcomes among patients with SPMI. Section 2 provides background of the problem of nonadherence to psychotropic medications in the United States and explains the role of the DNP student in the systematic review.

Concepts, Models, and Theories

Nonadherence to prescribed psychotropic medications is among the major behavioral risk factors among individuals with SPMI (Cutler et al., 2018). Nonadherence to psychotropic medications is usually common among patients with low socioeconomic statuses, minorities, and those from communities with scarce resources (Torres-Robles et al., 2018). Patients with SPMI need appropriate and timely behavioral modification and long-term maintenance to avoid deterioration and adverse complications that may even lead to death (Borba et al., 2018). Thus, the theoretical foundation of the current systematic review was based on Becker's (1974) health belief model (HBM) to help improve the understanding of the importance of adherence to psychotropic medications among individuals with SPMI.

The HBM

The HBM was developed by psychologists in the 1950s with the goal of improving the use of preventive programs by the public (Becker, 1974). The model is based on six concepts, including perceived susceptibility, perceived benefits, perceived usefulness, cues to action, perceived barriers, and self-efficacy (Jones et al., 2015).

Perceived susceptibility involves people's beliefs regarding the likelihood of contracting a disease or condition (Jeihooni, Hidarnia, Kaveh, Hajizadeh, & Askari, 2016). The effectiveness of any program or initiative aimed at promoting the adherence to psychotropic medications is

dependent on how individuals perceive the consequences and risk of SPMI in their lives (Jones et al., 2015). Improving the understanding of evidence-based strategies for increasing medication adherence in mental healthcare is important among individuals with SPMI as it reduces the risk of complications and adverse health outcomes. Conducting a systematic review of the evidence-based strategies for improving adherence to psychotropic medications would improve awareness of the negative health outcomes resulting from the deterioration of patients' conditions.

Perceived barriers refer to people's beliefs regarding the psychological and tangible costs of the interventions or actions (Jones et al., 2015). Thus, the patients' participation in improving their behaviors is inhibited by physical, psychosocial, or financial barriers (Jeihooni et al., 2016). Individuals with SPMI are faced with various barriers in their desire to maintain optimal adherence to psychotropic medications, including lack of adequate knowledge, health illiteracy, and financial issues. The systematic review could provide ideas on evidence-based interventions for improving adherence that is less susceptible to some barriers.

Perceived benefits involve people's beliefs about the efficacy of the interventions to minimize the severity of the impacts (Jeihooni et al., 2016). An individual's perception of engaging in health-promoting behavior influences the risk of severity and susceptibility (Jones et al., 2015). To control SPMI and prevent complications resulting from nonadherence, individuals suffering from these conditions must adopt effective evidence-based interventions. Thus, it is essential to synthesize high-quality empirical evidence on evidence-based strategies for improving medication adherence among individuals with SPMI.

Cues to action or triggers to health-related behavioral change are influenced by people's ability to act readily (Jones et al., 2015). The cues can result from internal and external sources,

or both (Jeihooni et al., 2016). I applied this concept in the systematic review to identify strategies that allow providers to identify and address the causes or triggers of nonadherence behaviors among mental health patients. A potential strategy could be improving mental health patients' knowledge of the importance of adhering to psychotropic medications.

Self-efficacy involves individuals' confidence in their ability to act towards changing their health behaviors (Jones et al., 2015). With adequate information on evidence-based strategies, individuals with SPMI would develop confidence in their ability to maintain and take their medications as prescribed by psychiatrists (Jeihooni et al., 2016). This systematic review added to the existing body of literature on evidence-based strategies for improving adherence among individuals with SPMI. Individuals with SPMI may share information from the systematic review with others in society. This review may enhance the understanding of different evidence-based strategies for preventing nonadherence among SPMI patients. For example, providers would have an increased knowledge of provider-targeted strategies, such as training and education. Additionally, the systematic review can enhance providers' experience of patient-targeted strategies such as compliance therapies, cognitive-behavioral therapy, and motivational interviewing (Kondo et al., 2015).

The HBM is suitable for this systematic review because it provides a foundation for improving awareness of the importance of adherence to psychotropic medications among individuals with SPMI. The evidence-based interventions that were the focus of this systematic review involved strategies for reducing nonadherence to psychotropic medications. The HBM model also addresses individuals' belief systems and cultural backgrounds.

The Iowa Model

Titler et al.'s (2001) Iowa model is mainly used to translate empirical evidence into practice to improve care quality. The Iowa model is comprised of seven primary steps that describe the collection of relevant data to provided evidence on a given problem. The Iowa model can help psychiatric clinicians and other practitioners to apply research findings into practice to improve patient outcomes.

The first stage of the Iowa model aims to identify a knowledge-based or problem-focused trigger that necessitates evidence-based practice change (Brown, 2014). Knowledge-based triggers occur when new research findings are produced or when there is a need for new practice guidelines. Conversely, problem-based triggers involve the identification of clinical problems or arise from risk management information and financial data (White & Spruce, 2015). It has been documented that nonadherence to psychotropic medications is a major problem in the United States, with significant impacts on patients, their families, and the health industry in general (Steinkamp et al., 2019). In this stage, the team determines whether the target problem is a priority. As indicated by White and Spruce (2015), organizations are more likely to prioritize problems with higher costs or those that are voluminous.

The second step in the model involves the formation of a team to develop, implement, and evaluate evidence-based practice change. According to Lloyd, D'errico, and Bristol (2016), the composition of the team is dependent on the problem and should preferably include interdisciplinary stakeholders. The team should be interested and preferably include internal and external stakeholders.

The third step involves collecting and analyzing research related to the identified problem and practice change (White & Spruce, 2015). This stage includes the formation of appropriate research questions and searching for literature on related studies. In addition, the investigator is required to collect and review existing studies on the target clinical problem.

The fourth stage involves the critiquing and synthesis of evidence gathered during the literature search (White & Spruce, 2015). In this step, the team reviews the collected research to critically appraise the evidence. The appraisal process is aimed at determining whether there is adequate high-quality evidence to address the research questions.

The fifth step involves the synthesis of evidence and making recommendations for clinical practice (Brown, 2014). If there is adequate evidence, the change is implemented.

The sixth step involves the implementation of the systematic review after approval and ensuring that all the procedures and policies are consistent with organizational guidelines (Lloyd et al., 2016). The establishment of an effective communication plan for disseminating the findings is essential. The findings can be disseminated using posters, manuscripts, and presentations in conferences and workshops.

The final step involves evaluating whether the change is feasible and if the results can improve patient outcomes (Lloyd et al., 2016). The evaluation phase yields feedback on the systematic review that allows for revisions if needed. The selected studies were evaluated to determine whether there was adequate high-quality evidence on evidence-based strategies for improving adherence among SPMI patients.

The Iowa models provided clear frameworks for performing the systematic review. The Iowa model also provided a systematic process of applying evidence-based literature into

practice. Medication nonadherence among individuals with SPMI is a major problem in the United States that needs to be addressed to improve health outcomes and minimize health care expenditure on this population. Conducting a systematic review is a positive step in identifying effective evidence-based strategies for improving medication adherence among SPMI patients. Figure 1 provides the conceptual framework based on the Iowa model.

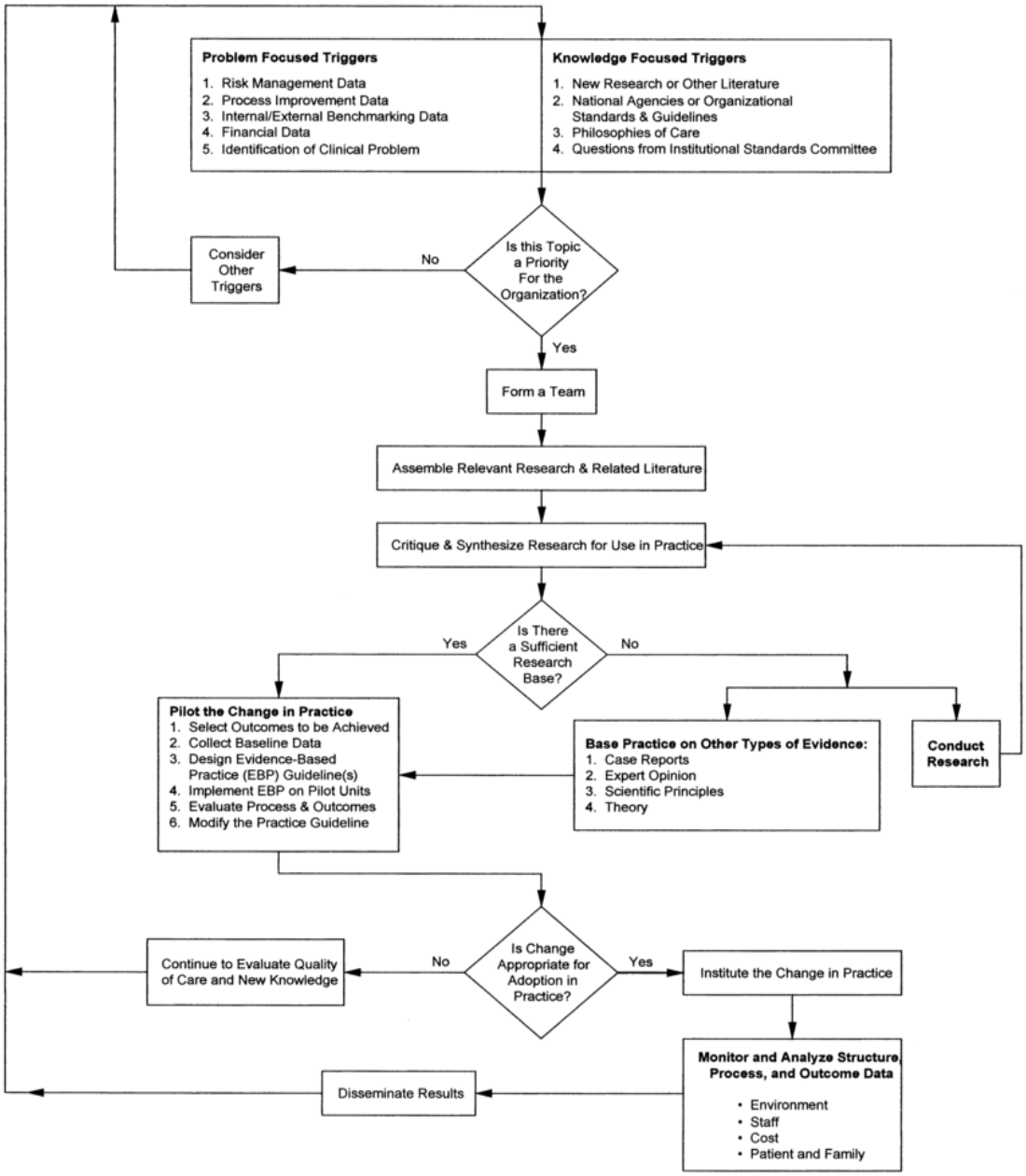

Figure 1. The Iowa Model for Evidence-Based Practice. Source. Titler et al. (2001).

Key Terms

Medication adherence: Medication adherence involves the extent to which an individual's behavior corresponds with care providers' recommendations and prescriptions McQuaid & Landier, 2018).

Systematic review: A systematic review is a study that summarizes the findings of existing healthcare research that provides highly reliable evidence on the effectiveness of specific strategies or interventions (Robinson & Lowe, 2015).

Antipsychotic: Antipsychotic medications are treatments for addressing delusions, hallucinations, and manic symptoms in the short-term (Martino, Karnik, Osland, Barnes, & Pringsheim, 2018).

Evidence-based interventions: Evidence-based interventions refer to peer-reviewed strategies, programs, or practices that are published in the empirical literature of effectiveness (Hailemariam et al., 2019).

Serious and persistent, mentally ill. SPMI comprises severe mental health disorders, including schizophrenia, bipolar disorder, borderline personality disorder, and major depression (Kinter, 2017).

Relevance to Nursing Practice

There is an increase in the rate of nonadherence among individuals with SPMI in the United States (Torres-Robles et al., 2018). Mental health disorders affect over 46 million adult Americans annually (National Institute of Mental Health [NIMH], 2019). Although psychotropic medications are the primary form of treatment used for preventing relapse and severe

deterioration among psychiatric patients, nonadherence is still prevalent in this population (Torres-Robles et al., 2018).

Nonadherence to psychotropic medications has been linked to various factors, including socioeconomic status, stigma, substance abuse disorder, care fragmentation, cultural influences, psychopathology, issues relating to treatment, and lack of awareness (Phan, 2016; Steinkamp et al., 2019). The growing prevalence of nonadherence among individuals with SPMI results in increased financial burden on healthcare institutions, families, and the society in general (Joe & Lee, 2016; Rao et al., 2017). In addition, various studies indicate that noncompliance with prescribed psychotropic medications is a significant driver of suboptimal health outcomes among individuals with mental health issues (Borba et al., 2018; Cutler et al., 2018; Steinkamp et al., 2019). As indicated by Jawad et al., (2018), nonadherence to psychotropic medications can have significant negative impacts on patients because it can cause suicidal tendencies, relapse, delayed remission, and readmission.

The purpose of psychotropic medications among individuals with SPMI is to manage symptoms and reduce the risk of relapse, suicidal tendencies, readmission, and longer remission times (Borba et al., 2018). Implementing interventions that aid in promoting medication adherence among individuals with SPMI can positively impact health outcomes and the society. Lack of knowledge and insight of evidence-based strategies for improving adherence to psychotropic medications has been identified as a major contributor of nonadherence (Phan, 2016). Studies have suggested various behavioral and psychoeducational interventions for minimizing the prevalence of nonadherence among individuals with SPMI (Borba et al., 2018; Steinkamp et al., 2019). Conducting a systematic review would improve health practitioners'

knowledge of evidence-based strategies for improving medication adherence among individuals with SPMI. Increase in clinicians' knowledge and understanding of these interventions could translate into improved patient outcomes.

Current State of Adherence to Psychotropic Medication

Nonadherence to psychotropic medications continues to be a significant problem among adult Americans who have SPMI; thus, clinicians need to apply their expertise to identify and design effective interventions to address the problem (Semahegn et al., 2018). This systematic review investigated effective evidence-based strategies that can be implemented to increase adherence to psychotropic medication among individuals with SPMI. The systematic review has the potential to improve psychiatric clinicians' awareness of the most appropriate and effective interventions for improving adherence to psychotropic medications among patients with SPMI. The systematic review facilitated the synthesis of the knowledge from the latest and most relevant peer-reviewed evidence. An increase in awareness of evidence-based strategies for improving adherence can be translated into practice to help improve clinical outcomes among patients with SPMI. Consequently, an increase in adherence to psychotropic medications would reduce the likelihood of readmission and minimize healthcare costs; thus, decreasing the financial burden of this population. The standard practice for addressing nonadherence to psychotropic medication involves designing a treatment plan that is consistent with the patients' rehabilitation and recovery (Galletly et al., 2016). Over the past three decades, new psychotropic drugs have been consistently supplied to clinicians to treat the various mental health disorders (Lister, 2016). The U.S. Food and Drug Administration has approved nine antidepressant agents, two classes of psychotropic drugs, and five antipsychotic medications since 1988 (Soria Saucedo

et al., 2018). Recent empirical evidence indicates the effectiveness of various interventions in improving medication adherence rates among adult patients with mental health issues (Steinkamp et al., 2019). For instance, a recent study by Hughes, Vess, and Johnson (2018) demonstrated the effectiveness of motivational adherence therapy in improving adherence to psychotropic medications among veterans living with severe mental illnesses. After implementing Motivational Interviewing Style Adherence Therapy (MISAT), Hughes et al. (2018) found a clinically significant improvement in the participants' adherence to psychotropic medications. In addition, there was an increase in the participants' average refill history by 3% (Hughes et al., 2018).

A study by Trujillo (2015) also indicated that mobile reminder applications and coaching sessions could effectively increase adherence to psychotropic medication among adult patients with SPMI. The study included 15 participants and indicated a significant increase in the participants' medication adherence rates after two months. A similar study by Spoelstra, Schueller, Hilton, and Ridenour (2015) also supported the effectiveness of cognitive-behavioral interventions and motivational interviewing in improving adherence to psychotropic medications. Spoelstra et al. (2015) concluded that a combination of motivational interviewing and cognitive-behavioral interventions could effectively improve medication adherence among patients with SPMI.

Though the nonadherence rate among mental health patients differed nationwide because of varying definitions and measurements, it is estimated that about 13-56% of all individuals with psychiatric illnesses do not comply with prescribed medication regimen (De Las Cuevas, de Leon, Peñate, & Betancort, 2017). The level of nonadherence among patients with different

mental health illness has been found to vary based on the condition. For example, the rate of nonadherence among schizophrenia patients is approximately 50-61%, while for those with bipolar disorder, the noncompliance rate varies from 20-60% (De Las Cuevas et al., 2017).

Nonadherence to Psychotropic Medications

Nonadherence to psychotropic medications is a significant predictor of adverse health outcomes for mental health patients, including rehospitalization, suicide, relapse, premature death, delays in remission, and aggression (Steinkamp et al., 2019). In addition, the positive association has been found between nonadherence to psychotropic medications and healthcare costs for mental health disorders with higher noncompliance rates causing higher treatment costs (Cutler et al., 2018). The availability of psychotropic medications has improved with drugs playing a significant role in the treatment of patients with severe psychiatric illness (Smith et al., 2017).

Effective management of mental health disorders involves various complex medication regimens that require a daily intake of multiple drug combinations (Smith et al., 2017). The high rate of nonadherence to psychotropic medications among adults is associated with various patient, systemic, and environmental factors (Gebeyehu et al., 2019). However, no factor can thoroughly explain the reasons for nonadherence among adult patients with SPMI. For example, older adults with mental health issues are predisposed to medication nonadherence by deficits in cognitive processes, which impair their ability to plan and manage the intake of psychotropic drugs effectively (Smith et al., 2017). Other reasons for nonadherence to psychotropic medications include poor insight, stigma, distressing side effects, negative attitudes towards medication, and ineffective therapeutic alliance (Velligan et al., 2017).

In a recent study, Novick et al. (2015) found that increased baseline insight and an improved therapeutic alliance was associated with higher adherence to psychotropic medications. Therapeutic alliance involves the partnership and cooperation between mental health patients and healthcare professionals to achieve improved outcomes (Novick et al., 2015). Conversely, insight involves individuals' awareness of their psychological condition (Novick et al., 2015). Insight The primary goal of the study was to evaluate the relationship between medication adherence and medication insight among 903 schizophrenic adult patients. The study was observational and set in Europe, focusing on adherence to oral olanzapine medication over 12-months. The participants used the Scale to Assess Unawareness of Mental Disorder, Global Assessment of Functioning, Working Alliance of Functioning, Working Alliance Inventory, Medication Adherence Rating Scale, and Clinical Global Impression. The results indicated that patients with schizophrenia had a significantly lower insight and higher unawareness compared to those with bipolar disorder ($p < 0.001$). The authors also found a significant association between higher adherence to psychotropic medications and improved insight ($p < 0.0001$). Besides, there was a strong relationship between a stronger therapeutic alliance and higher insight ($p < 0.0001$). Novick et al. (2015) concluded that insight has a significant-close relationship with adherence to psychotropic medication.

A recent systematic review by Smith et al. (2017) explored the association between nonadherence with various domains among individuals with cognitive impairment and dementia. The authors indicated that the adherence rates in most of the studies ranged from 10.7% to 38%, with individuals not suffering from cognitive impairment having better compliance rates. However, the results indicated an inconsistent variation in the definitions of adherence. Smith et

al. highlighted that executive functioning, memory, and new learning was linked to improved adherence to psychotropic medications. The authors concluded that there is a gap in knowledge of some domains may contribute to medication nonadherence among mental health patients with SPMI.

Strategies for Improving Medication Adherence

Investigators have designed various interventions that can be implemented to improve adherence to psychotropic medications. For example, El-Mallakh and Findlay conducted a review to evaluate interventions, notably support service, employed by clinicians to improve medication adherence among schizophrenia patients. The study involved a comprehensive review of the literature published over ten years period from CINAHL, Medline, PubMed databases. The key terms used in the study included "support services," "medication adherence," and "schizophrenia." Based on the findings, 22 studies focused on support-service strategies, including financial incentives, adherence therapy, cognitive-behavioral and motivational strategies, and technological interventions such as the use of electronic reminders through telephones or text messages. El-Mallakh and Findlay indicated that interventions involving support services should be adapted to address the specific needs of patients with schizophrenia. In addition, El-Mallakh and Findlay recommended further investigation of effective support-service interventions that can be applied to enhance long-term medication adherence among patients with mental illness.

Moran and Priebe (2016) also conducted a randomized controlled trial to evaluate how financial incentives influence the intake of psychotropic medications. The study involved a comparison of patients who were provided with financial incentives varying from £75 to £735, to

encourage intake of antipsychotic medications and a control group who received no incentives. Compared to the control, the intervention group demonstrated improved adherence and better quality of life. There was an estimated 19.59 % (*SD* = 17, 52 %) average increase in the participants' adherence to antipsychotic medications. The regression model indicated that improvement in adherence to psychotropic medications significantly predicted increased subjective quality of life ($p < 0.014$). Moran and Priebe concluded that adherence to anti-psychotropic medication is associated with improved quality of life; thus, the need for clinical relevance for improved adherence resulting from financial incentives.

Kondo et al. (2015) also conducted a qualitative study exploring interventions aimed at improving adherence to pharmacological medications among patients with bipolar disorder, psychotic spectrum disorders, and posttraumatic stress disorder. The authors indicated that there are various interventions for improving pharmacological adherence and are focused on patients, providers, ad organizations. Patient-targeted interventions are mainly behavioral and psychosocial and may include motivational interviewing, cognitive-behavioral therapy, customized adherence enhancement, shared decision-making, and adherence and compliance therapies. Conversely, provider-targeted interventions include training and education on motivational interviewing. Organizational level interventions include financial incentives, care coordination, blister packaging, and minimizing economic barriers through cost-sharing. Other organizational level interventions for improving medication adherence include communication technologies such as short message service (SMS), refill reminders, and e-monitoring.

Kreyenbuhl, Record, and Palmer-Bacon (2016) conducted a study to evaluate the behavioral tailoring interventions that are used to improve medication adherence among patients

with severe mental disorders. Kreyenbuhl, et al. identified the need for effective behavioral interventions for improving adherence to help 60% of patients who do not take medications as prescribed. Some of the non-technology-based behavioral interventions included environmental supports in the individuals' homes such as Cognitive adaptation training (CAT), pharmacy-based and telephone reminders, and financial incentives (Kreyenbuhl et al. 2016). Conversely, technology-based behavioral interventions for improving adherence included computerized relational agents and electronic medication monitors.

Pauly et al. (2015) conducted a prospective clinical trial to evaluate the effects of an inter-sectoral and multi-dimensional intervention on medication adherence among patients with mental illnesses. The multi-dimensional component in the intervention included individualized patient education and therapy simplification, while the inter-sectoral aspect involved subsequent phone calls post-discharge. The study involved 269 patients from a hospital setting in Germany, who were grouped into control and intervention groups. The authors measured the participants' adherence using the Drug Attitude Inventory (DAI) and the Medication Adherence Report Scale (MARS). The MARS and DAI were used to measure the participants' adherence and attitudes towards drugs, respectively. The results indicated an increase in the patients' MARS and DAI scores three months post-discharge by 1.33 and 1.93 points, respectively. Pauly et al. concluded that inter-sectoral and multi-dimensional interventions could significantly increase medication adherence among patients with mental health issues.

Steinkemp et al. (2019) also conducted an extensive systematic review to evaluate the technological interventions employed by clinicians to improve medication adherence among adults with mental health issues (Steinkamp et al., 2019). Relevant peer-reviewed articles from

the Cochrane Central Register of Controlled Trials, MEDLINE, PsycINFO, EMBASE, Web of Science, ClinicalTrials.gov, and Engineering Village were critically appraised to provide reliable evidence for the study. The findings indicated that most technological interventions involve the integration of reminders, data feedback, contingency management, support messages, care team contact abilities, secure medication storage, psychoeducation, and social support engagement (Steinkamp et al., 2019). The authors found that the main strategies for measuring adherence include remote direct visualization, pill counts, biosensors, self-reports, automated compute algorithms, ingestible sensors, and utilization measures. The intervention modalities applied include mobile phone apps, interactive voice response, SMS, and websites (Steinkamp et al., 2019). The authors concluded that the majority of technology-based interventions for monitoring and improving medication adherence among mental health patients could also be applied to other disorders.

A recent focus group by Blixen et al. (2018) evaluated how participation in a tailored mental health intervention influences medication adherence among patients with hypertension and bipolar disorder. The study involved 13 participants and focused on the facilitators and perceived barriers of adherence to bipolar disorder and hypertension adherence and feedback relating to the use of a bidirectional SMS system for medication reminders. The results indicated that the most common barrier to medication adherence was mood fluctuations. The participants' feedback on the effectiveness of the SMS system in improving medication adherence for bipolar disorder was positive. Blixen et al. concluded that the implementation of mental health could significantly improve medication adherence among patients with mental health disorders.

Local Background and Context

The current project was focused on the Stats of Texas. According to the National Alliance on Mental Illness (NAMI; 2019), about 19%, representing one in five, adult Americans experienced at least one psychiatric illness in 2018. Of this population, about 4.6% experienced severe mental illnesses. Statistics also indicate that approximately 3.7% of adult Americans experience co-occurring psychiatric disorders annually (NAMI, 2019). The adult population affected by mental health disorders in Texas is relatively consistent with the national prevalence, with over 5 million Texas having mental health illnesses, which necessitate appropriate psychotropic medications (Mental Health Texas, 2019). Of this figure, approximately 2 million have persistent or severe psychiatric disorders such as major depression, bipolar disorder, and schizophrenia (Mental Health Texas, 2019).

Psychiatric disorders account for approximately 14% of the disease burden and have significantly increased over the past decade (Torres-Robles et al., 2018). In the United States, over 46.6 million adults aged 18 years and over have a mental health issue (NIMH, 2019). This population depends on psychotropic medications and therapy to manage their conditions and achieve improved health outcomes and quality of life (Borba et al., 2018). However, the uncertainty surrounding the adherence to psychotropic medications has led to mixed results on the effectiveness of treatment (Torres-Robles et al., 2018). Studies indicate that mental health patients can only get full benefits of psychotropic medications if they reasonably adhere to the prescribed treatment regimens and therapy (Borba et al., 2018). The World Health Organization (WHO) estimates that only half of patients with chronic conditions adhere to recommended treatment regimens in developed countries (Addo, Sencherey, & Babayara, 2018). In the United

States, the rate of nonadherence to psychotropic medications among patients with mental health is approximately 70% (Chakrabarti, 2016). However, some researchers provide varying estimates because of the different data collection and measurement methods (Velligan, Sajatovic, Hatch, Kramata, & Docherty, 2017).

Statistics indicate that the cost of nonadherence per patient ranges between $3,252 and $19,363 (Cutler et al., 2018). With approximately 46.6 million American adults who have mental illness annually, there is a need for effective interventions to address nonadherence among this population (NIMH, 2019). As highlighted by Kleinsinger (2018), there is a gap in the literature on the improvement of medication adherence among mental health patients. The systematic review addressed this gap by exploring the evidence-based strategies that can enhance mental health patients' adherence to psychiatric medications and regimens.

Medication nonadherence is a crucial barrier to positive health outcomes among patients with mental health disorders, including schizophrenia, depression, and bipolar disorders (Borba et al., 2018; Cutler et al., 2018). Various studies have indicated that suboptimal adherence to psychotropic medications can lead to relapse, low life satisfaction, increased suicidal tendencies, poor mental functioning, more rehospitalizations, and increased visits to the emergency department (Cutler et al., 2018; Steinkamp et al., 2019; Velligan et al., 2017). However, there is a high rate of nonadherence to psychotropic medications in the United States, with statistics varying from 10-77% (Cutler et al., 2018). Some researchers have also established that nonadherence to psychotropic medication is caused by limited awareness or insight, short illness duration, negative attitudes towards medications, substance abuse, lack of family support, and poor therapeutic alliances (Jawad et al., 2018). Approximately 75-90% of mental health patients

who are discharged relapse and are readmitted (Donisi, Tedeschi, Wahlbeck, Haaramo, & Amaddeo, 2016). Other factors that have been linked to suboptimal adherence to psychotropic medications include reduced medication efficacy, personality traits, prescribers' characteristics, medication unavailability, long home-hospital distance, spirituality, preference for alternative and complementary medications, adverse drug reactions, and displeasure with treatment (Borba et al., 2018; Iseselo & Ambikile, 2017).

Because of the high rate of nonadherence to psychotropic medications among mental health patients and severe consequences, various interventions have been introduced and implemented to help address this problem (Martin et al., 2018). Medication adherence interventions for individuals with psychiatric disorders include and not limited to cognitive behavioral therapy, adherence and compliance therapies, technological interventions, behavioral and psychosocial strategies, and shared decision-making (D'Rozario, Galgut, & Bartlett, 2016). Interventions focusing on clinicians and family members have also been found to be effective in improving adherence to psychotropic medications among individuals with psychiatric disorders (El-Mallakh & Findlay, 2015). Medication adherence interventions targeting psychiatric clinicians include training and education on motivational interviewing (Dobber et al., 2018). Conversely, interventions targeted at the psychiatric facilities include financial incentives, installation of electronic reminder systems, phone follow-up, communication technology strategies, adoption of e-Health, and reducing potential economic barriers (WHO, 2019).

Adherence to psychotropic medication is dependent on various factors, which are mainly related to the patients' environment, community setting, socioeconomic status, medications, and specific disorders. For instance, patients with high socioeconomic status are likely to be more

adherent to psychotropic medication compared to those who live below the federal poverty threshold (Miasso et al., 2016). African Americans and Latinos have also been found to have lower adherence to psychotropic mediations compared to their White counterparts (Lê Cook et al., 2017). In addition, patients with major psychiatric conditions have a higher likelihood of nonadherence compared to those with less severe disorders (Semahegn et al., 2018). Homeless patients and those without insurance coverage also have a high risk of nonadherence to psychotropic medications (Rezansoff, Moniruzzaman, Fazel, Procyshyn, & Somers, 2016). The prevailing regulatory environment also plays a significant role in promoting adherence among patients with SPMI. Some states have adopted aggressive regulations such as Kendra's Law in New York State, which allows for mandatory treatment of SPMI; thus, improving adherence rates. California and Michigan also have similar laws in "Laura's Law" and "Kevin's Law," respectively that facilitate a form of assisted outpatient treatment for individuals with mental health issues (Swartz, Bhattacharya, Robertson, & Swanson, 2017). Under these preventive outpatient commitment laws, mental health patients can be ordered to involuntary outpatient civil commitment (OPC). This is if their conditions (a) would worsen if not treated, (b) impaired their ability to adhere to treatment regimens, or (c) increase the risk of physical harm to themselves and others if not treated (Saya et al., 2019).

Role of the DNP Student

There has been an increase in the rate of nonadherence to psychotropic medication among patients with mental health disorders over the past few decades (Torres-Robles et al., 2018). For this systematic review, I conducted a comprehensive systematic review of the literature on evidence-based practices for improving adherence to psychotropic medications

among adults with mental disorders. As the DNP student, I was tasked with performing all the phases of the systematic review. In addition to seeking approval from Walden University's institutional review board (IRB), I developed a literature search plan to collect relevant primary studies on effective evidence-based strategies for promoting adherence to psychotropic medications. I also conducted the literature search in reliable online databases and retrieved the studies into a personal database. I then used the retrieved articles to synthesize relevant and current evidence-based interventions for promoting adherence. I then provided recommendations based on the findings and develop plans for dissemination. The motivation to pursue this systematic review was to improve awareness of evidence-based practices for improving medication adherence among patients SPMI.

Various aspects can cause biased consideration of the systematic review's research questions. Though bias is highly prevalent in published studies, their prejudices should be carefully considered to ensure ethical design and implementation of a project (Noble & Smith, 2015). A potential bias in this systematic review may result in the subjective inclusion of studies in the systematic review. However, this bias can be avoided by using a strict inclusion-exclusion criterion.

Summary

The purpose of this systematic review was to explore the evidence-based strategies that can aid in increasing medication adherence in mentally ill patients. This section has provided an overview of the background and context of nonadherence among mental health patients, a brief description of the Iowa Model of evidence-based practice, the relevance of the systematic review to nursing practice, and the role of the DNP student. The Iowa Model was selected because it can

facilitate the evaluation and translation of empirical evidence into practice in order to improve care quality. The Iowa model of evidence-based practice facilitated the identification of problem-focused and knowledge-based triggers for nonadherence among mental health patients. In addition, the Iowa model allowed the DNP student to determine whether the identified problem is a priority and create a team to help in the implementation and evaluation of the systematic review. Thus, I was able to develop research questions and conduct a comprehensive literature search.

The HBM is used to help improve the understanding of the importance of adherence to psychotropic medications among individuals with SPMI. The focus of the systematic review included studies on evidence-based interventions for improving adherence to psychotropic medications among individuals with SPMI. The HBM model also helped in synthesizing evidence involving the individuals' beliefs and cultural backgrounds in relation to the evidence-based strategies.

Mental health issues affect approximately 47 million adult Americans (NIMH, 2019). Approximately two million Americans experience severe or persistent or psychiatric disorders, including schizophrenia, major depression, and bipolar disorder (Mental Health Texas, 2019). Medication nonadherence has been linked to various negative health outcomes, including relapse, suicidal tendencies, and even death (Cutler et al., 2018). Nonadherence to psychotropic medications is still a major issue affecting individuals with SPMI (Semahegn et al., 2018). However, the implementation of system-, provider-, and patient-targeted interventions can significantly promote adherence levels in this population (Kondo et al., 2015).

After conducting the literature search, I critiqued and synthesized evidence from the selected studies and determined the feasibility of the proposed change. The systematic review has significant implications for nursing practice, especially in reducing the rate of nonadherence and improving health outcomes. The systematic review was expected to improve the understanding of evidence-based strategies for reducing medication nonadherence among adult patients with mental health disorders. Reducing nonadherence to psychotropic medications can minimize the rate of adverse health outcomes among patients with psychiatric illnesses, including suicidal tendencies, relapse, and even death (Steinkamp et al., 2019).

The systematic review could also improve the understanding of evidence-based strategies that can be adopted to reduce the barriers to optimal adherence to psychotropic medications, including substance abuse disorder, cultural influences, and lack of awareness (Phan, 2016). The systematic review has the potential to address the gap in the literature on evidence-based interventions that can be implemented to improve adherence to psychotropic medications. I played a significant role in the systematic review, including seeking IRB approval, data collection, literature search and synthesis, and evaluation. I also developed various recommendations for change in practice aimed at improving adherence to psychotropic medications. Section 3 presents a comprehensive discussion of the methods that were used to conduct a systematic review.

Section 3: Collection and Analysis of Evidence

Introduction

Nonadherence to psychotropic medications has been a significant public health issue in the United States for the past few decades (Semahegn et al., 2018). Given that mental health disorders affect approximately 46.6 million Americans, there is a need to identify the most effective interventions for addressing the problem of nonadherence (SAHMSA, 2017). The lack of valid and reliable evidence regarding the most effective medication adherence interventions for mental health patients makes it difficult for stakeholders to adopt these strategies (Torres-Robles et al., 2018). The purpose of this systematic review was to explore the evidence-based strategies that can aid in increasing medication adherence in mentally ill patients. The target problem was the high rate of medication nonadherence among individuals with SPMI. There is also a lack of adequate evidence of effective strategies for improving adherence among individuals with mental health disorders. This section provides a comprehensive discussion of the practice-focused question that guided the systematic review, sources of evidence, and the process of analyzing and synthesizing evidence from the systematic review.

Practice-Focused Question

The number of adult Americans with mental health disorders who do not adhere to their psychotropic medications' regime is alarming. Previous studies have indicated that nonadherence to psychotropic medications can cause adverse health outcomes increasing the cost of health care and the rate of rehospitalization of mental health patients (Joe & Lee, 2016; Steinkamp et al., 2019). There is a gap in literature relating to evidence-based strategies for promoting adherence to psychotropic medications among adult individuals with mental health disorders (Vita &

Barlati, 2019). This project was, therefore, aimed at conducting a systematic review of current and relevant evidence to summarize existing evidence-based strategies for improving adherence to psychotropic medications among adult mental health patients. The guiding practice-focused question was, "What evidence-based strategies can be implemented by healthcare providers to improve adherence to antipsychotics among individuals with serious and persistent mental health issues?" The question was addressed using evidence from the systematic review of current and relevant studies on evidence-based strategies for promoting adherence to psychotropic medications. The approach of this project included a systematic review of recent studies on effective evidence-based interventions for promoting adherence to psychotropic medications among adult individuals with mental health disorders. I used reliable online databases such as Google Scholar, PubMed, and EBSCOHost.

Sources of Evidence

The sources of evidence include journal articles from online databases, including Walden University Library, PubMed, Cochrane Collaboration, EBSCOHost, PsychINFO, ProQuest, Joanna Briggs Institute, and Google Scholar. For this systematic review, I focused on primary studies relating to evidence-based strategies that are used to improve medication adherence among patients with mental.

The literature search strategy and appraisal of collected studies facilitated the synthesis of high-quality evidence to address the practice-focused question. As recommended by Booth (2016), I conducted the literature search process for this systematic review in five stages: (a) formulation of the research question, (b) collection and classification of evidence, (c) critical appraisal, (d) evidence synthesis, and (e) presentation of limitations and recommendations.

Step 1: Research Question

The practice-focused question was, "What evidence-based strategies can be implemented by healthcare providers to improve adherence to antipsychotics among individuals with serious and persistent mental health issues?" The practice-focused question is essential because it focuses on the scope of the systematic review of evidence-based interventions for promoting adherence to psychotropic medications among mental health patients. The systematic review had minimal risk because it did not include human participants; thus, there was no need for adherence to associated ethical considerations (Noble & Smith, 2015). Before conducting the systematic review, I sought authorization from the Walden University IRB. All the ethical concerns involving copyright were followed by appropriately citing all journal articles used in the systematic review.

Step 2: Collection and Classification of Evidence

The second step involved the collection and categorization of collected evidence using a comprehensive literature search strategy (Booth, 2016). The literature search strategy was conducted transparently to ensure that the studies can be evaluated appropriately and facilitate future reproduction (Viswanathan et al., 2018). I conducted a comprehensive literature search to ensure the inclusion of the most relevant studies while also minimizing the likelihood of selection bias.

The literature search involved locating previous studies conducted to evaluate evidence-based strategies for promoting adherence to psychotropic medications among adult mental health patients. The primary keywords used in the literature search include intervention, evidence-based, nonadherence, and psychotropic medication. However, I also used various combinations

of keywords to minimize the scope of the systematic review. I also employed Medical Subject Headings (MeSH) to refine the literature search further. The scope of the systematic review involved studies on evidence-based interventions for improving medication adherence among psychiatric patients published over the past 5 years. The primary sources of literature I focused on were peer-reviewed clinical journal articles. Despite using keywords, I found that the literature search to yielded studies that extend beyond the scope of the systematic review and research questions. The search was further refined using an inclusion-exclusion criterion. The inclusion criteria included selecting only articles that (a) were published between 2015 and 2019, (b) are peer-reviewed, (c) involve evidence-based interventions for promoting adherence to psychotropic medications, and (d) are published in English. The exclusion criteria include the elimination of studies that (a) were published later than 2015, (b) are not peer-reviewed, (c) do not involve evidence-based interventions for promoting adherence to psychotropic medications, and (d) are not published in English. The literature search strategy was applied with supervision from experts at Walden University

The selection process first involved screening the abstracts and titles of the studies to ensure that they met the inclusion-exclusion criteria before accessing the full texts. After reading the titles and abstracts of the studies, I selected those sources that appeared to satisfy the inclusion-exclusion criteria. From these studies, I identified studies that contain evidence-based practices for improving medication adherence to psychotropic medication. I maintained accurate documentation of relevant studies throughout the literature search process, including the total number of results yielded by every combination of keywords and those that were excluded. The reasons for excluding studies in the findings were also provided.

St ep 3: Critical Appraisal

The third step involved the critiquing of every selected study to produce evidence for addressing the research question (Booth, 2016). A critical appraisal also allowed for evaluation of the validity and applicability of the relevant studies to practice and future research. I first evaluated the quality of the selected primary studies. The studies were critically appraised for credibility, validity, and reliability

Step 4: Evidence Synthesis

After critically appraising the selected primary studies, I summarized the evidence to provide a comprehensive overview of the quality and essential findings. I focused on the methodology, sample size, and primary findings of the studies. The evidence was arranged in the form of universal themes from the primary findings of the selected studies.

Step 5: Presentation of Limitations and Recommendations

The final step involved a detailed presentation of the limitations of the evidence and the recommendations. The limitations allowed stakeholders to evaluate the strengths of the evidence while also considering potential weaknesses. Based on the findings of the review, I presented recommendations for practice, future research, theory, and policy.

The literature search focused on peer-reviewed primary studies published over the past 5 years, between 2014 and 2019. The studies needed to involve evidence-based strategies that have been employed to improve adherence to medications among patients with mental health disorders. The journal articles which must be published in English were critically appraised to synthesize the most reliable evidence on effective strategies for improving medication adherence among psychiatric patients. I developed a few key terms in addition to utilizing Medical Subject

Headings (MeSH) to refine the literature search. I also accessed statistics on medication adherence from reliable websites such as the WHO, National Mental Health Association (NMHA), the American Psychiatric Association, the NAMI, the American College of Sports Medicine, and the SAMHSA. The systematic review was aimed at addressing the gap in the literature on evidence-based strategies that can be adopted to increase medication adherence among mental health patients. Conducting the systematic review provided reliable evidence on the most effective strategies for improving medication adherence and health outcomes among patients with SPMI.

Analysis and Synthesis

The literature search was conducted exhaustively with strict adherence to the inclusion and exclusion criteria. I recorded the total number of articles yielded by every search combination while also documenting studies that did not meet the inclusion criteria. The resulting journal articles were critically evaluated to synthesize evidence supporting interventions for promoting adherence among mental health patients with SPMI. I also aimed to develop various recommendations based on the findings of the literature search.

The journal articles were organized and ranked using the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) method (Selçuk, 2019). The primary keywords included *intervention, nonadherence, evidence-based*, and *psychotropic medication*. The literature search involved various combinations in reducing the scope and producing the most relevant studies. Evidence collected from the selected studies were used to develop reliable recommendations for the implementation of evidence-based strategies to improve adherence to psychotropic medications.

The analysis process mainly involved the documentation of the online databases, the literature search strategy, abstraction of relevant content from selected studies, and detailed synthesis of findings from the studies. The analysis procedures involved the evaluation of the evidence from the selected studies in relation to their strength of evidence. The entire systemic review followed the Iowa and HBM. The Iowa model mainly guided the translation of empirical evidence into practice to improve medication adherence among individuals with SPMI. Conversely, the HBM helps in improving the awareness of the perceived benefits and usefulness of medication adherence among individuals with SPMI.

Summary

The purpose of this systematic review was to explore the evidence-based strategies that can aid in increasing medication adherence in mentally ill patients. This section has provided a detailed overview of the methods and procedures used to conduct a systematic review. The practice-focused question, sources of evidence, and analysis and synthesis process have been explicitly discussed in the section. The goal of the systematic review was to synthesize the most relevant and current evidence on interventions for promoting adherence to psychotropic medications among adults with mental health disorders. The findings of the systematic review were used to provide recommendations for positive change in practice to reduce the rate of nonadherence to psychotropic medications. Section 4 provides a comprehensive discussion of the findings of the systematic review, together with the recommendations. I also present the implications of the results, strengths, and limitations of the systematic review in Section 4.

Section 4: Findings and Recommendations

Introduction

Despite the effectiveness of antipsychotics in the management of mental disorders, many patients still fail to maintain optimal adherence (Montejo et al., 2018). It is estimated that the rate of medication nonadherence among patients with mental health disorders could reach 70% (Chakrabarti, 2016). Given that mental health disorders affect about 47 million Americans annually and the high cost of managing depression, there is a need to adopt more effective interventions to improve adherence in this population (SAHMSA, 2017). These figures highlight the extent of nonadherence to prescribed treatment regimen aimed at managing psychotic symptoms among patients with mental health illnesses. Harrison et al. (2019) indicated that adherence to psychotropic medication is challenging and continues to worsen in the United States. Nonadherence has been linked to high suicide risk, deterioration, rehospitalization, and low quality of life (Borba et al., 2018). Thus, there is a need for psychiatric clinicians to design and adopt more effective interventions to improve adherence to psychotropic medications in mental health patients. The problem addressed in this systematic review was the high rate of nonadherence among individuals with SPMI. There is also inadequate literature on the most effective strategies for improving adherence among individuals with mental health disorders.

The purpose of this systematic review was to explore the evidence-based strategies that can aid in increasing medication adherence in mentally ill patients. This section provides a detailed discussion of the findings and implications of the systematic review, its strengths and implications, and recommendations based on the findings. The sources of evidence included PubMed, Walden University Library, Google Scholar, ProQuest, Cochrane Collaboration,

EBSCOHost, and Joanna Briggs Institute. The systematic review was conducted using the PRISMA strategy.

Findings and Implications

For this project I employed systematic review to examine and analyze studies conducted between 2015 and 2019, recording a total of 15,092 journal articles, reduced to 13,540 after the duplicates were removed. However, 110 counted for eligibility, and 102 were excluded because they did not meet the inclusion criteria. The key terms used for the journal article search included *medication adherence, antipsychotics, and medical interventions***.** This DNP project did not involve human subjects; however, it adheres to rules and regulations set forth by Walden University and the IRB. The project, therefore, aligned with the requirements of Walden University *Manual for Systematic Review* and may enhance nurses, and the organization in promoting medication adherence.

The PRISMA flow diagram (see Figure 2) presents important information pertaining to procedural steps that were utilized for this DNP project in terms of screening, identification, eligibility, inclusion, and exclusion.

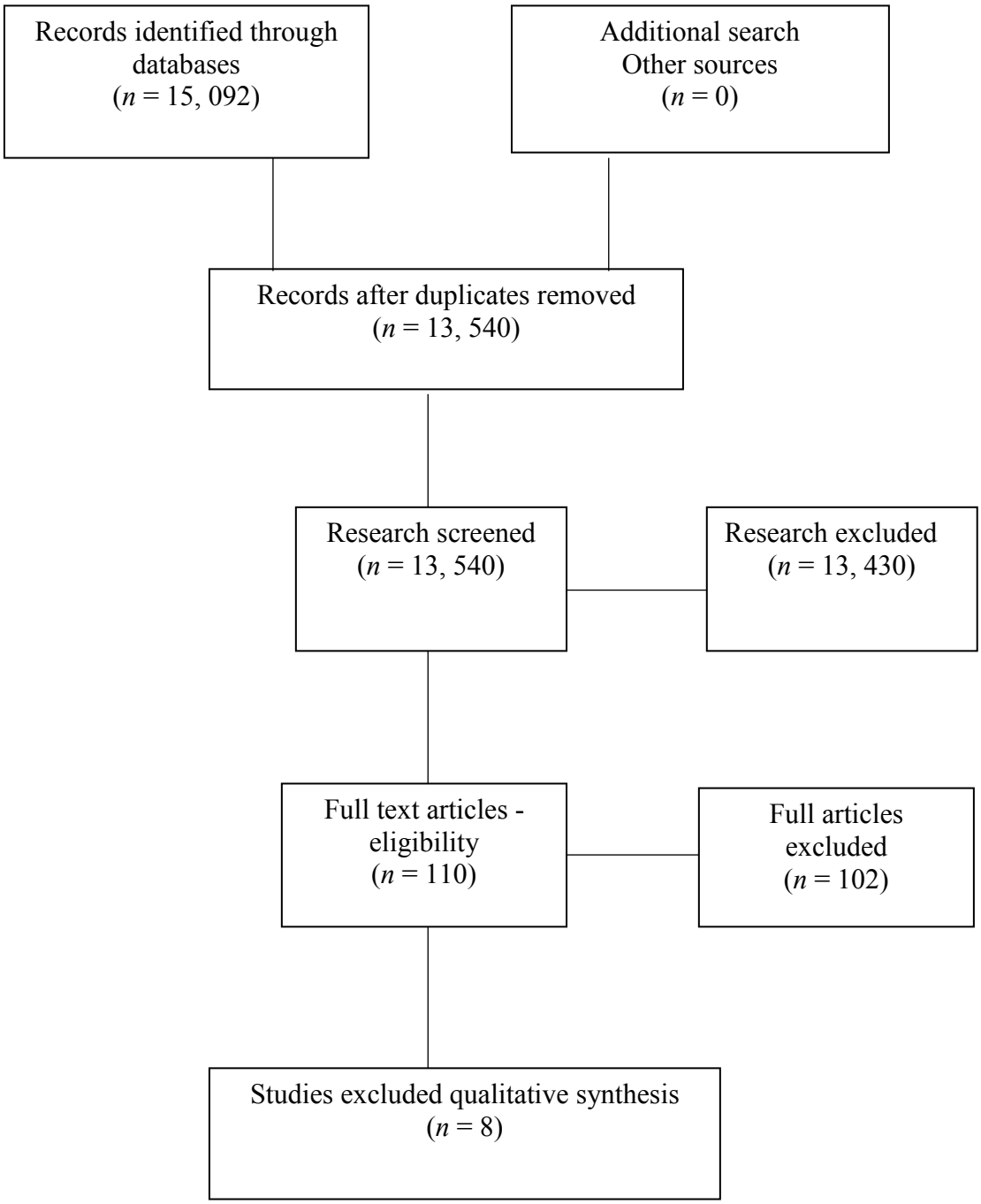

Figure 2. PRISMA flow diagram

Table 1

Summary Table of Analyzed Articles

Citation	Main findings	Research method	Strengths	Weakness	Level of Evidence
Blixen, C., Sajatovic, M., Moore, D. J., Depp, C., Cushman, C., Cage, J., … Levin, J. B. (2018). Patient participation in the development of a customized m-health intervention to improve medication adherence in poorly adherent individuals with bipolar disorder (BD) and Hypertension (HTN). International Journal of Healthcare, 4(1), 25–35.	Bixen (2018) study aimed at gathering information that would be useful in developing an intervention for client identification who did not demonstrate medical adherence Findings included: Forgetfulness as the most frequent barrier to taking antihypertensive medications. Decisions about taking medications are influenced by BD mood fluctuations and the burden of having to take "too many pills" for the illnesses. There was positive feedback on the use of a text-messaging system to help with medication adherence for BD and HTN.	Qualitative methods were used to obtain information. A purposeful sampling of 30 participants was invited via telephone 13 focus group consented. Focus groups of 3 – 5 were conducted debriefings were audiotaped and later transcribed by an expert. Data collected was tranquilized by comparing focus group sessions discussion and noted collected by an observer.	The study used unique approaches, for example collecting information directly from the participants using text messages. Furthermore, the high presentation of African Americans will be considered a strength for the study because they are very scarce studies using African Americans as the highest number of participants in the given study.	There was an indication of weakness in the study in terms of age, gender, and ethnicity. The population was purposefully sampled mainly, African American females.	Level IV
El-Mallakh, P., & Findlay, J. (2015). Strategies to improve medication adherence in patients with schizophrenia: The role of support services. Neuropsychiatric Disease and Treatment, 11, 1077-1090.	It is recommended that prescribers should educate patients on the importance of adherence to psychiatric medications as a priority and then address adherence to medications for medical illnesses as a secondary goal since PWS have reported that stable psychiatric symptoms are an essential precursor to the effective management of medical illnesses.	Literature review of 22 studies.	An improvement in the positive symptom rating subscale of the Positive and Negative Syndrome Scale was the strongest predictor of treatment adherence, regardless of the medication that was prescribed.	Problems with medication adherence due to financial constraints and affordability of medications were not addressed in these studies, which is a noteworthy gap that warrants further research.	Level V
Kreyenbuhl, J., Record, E. J., & Palmer-Bacon, J. (2016). A review of behavioral tailoring strategies for improving medication adherence in serious mental illness. *Dialogues in clinical neuroscience*, *18*(2), 191.	Novel technologies for improving adherence are being developed and have undergone preliminary feasibility testing. mHealth applications and text messaging are effective in changing health behaviors, including medication adherence, as well as improving clinical outcomes for a number of nonpsychiatric medical conditions. mHealth AEIs seem helpful in people for whom nonadherence is unintentional, that is, related to forgetting.	Systematic literature review with meta-analysis.	Adherence-enhancing interventions (AEIs) utilizing the platforms have the potential for widespread dissemination to a broad range of individuals with serious mental illness. Mobile phones, in particular are relatively low cost and have the potential for replacing face-to-face contact with health care professionals.	Experience is more limited in mHealth applications involving mobile phones and similar technologies. Formal economic evaluations of AEIs employing these technologies are still needed to obtain maximum benefit.	Level I

(Table Continues)

Citation	Main findings	Research method	Strengths	Weakness	Level of Evidence
Montejo, A. L., Montejo, L., & Baldwin, D. S. (2018). The impact of severe mental disorders and psychotropic medications on sexual health and its implications for clinical management. *World Psychiatry*, *17*(1), 3-11.	Sexual dysfunction is common during short□and long□term treatment with antipsychotics. It is associated with an impact on the quality of life in adult and adolescent patients. Erectile problems with antipsychotic drugs are related to endothelial dysfunction linked to decreased nitric oxide production. Depressive symptoms are associated with sexual difficulties and dissatisfaction. Patients with bipolar disorder tend to have more stable sexual partners and more intense sexual activity than those with schizophrenia.	Randomized placebo-controlled trial.	Treatments with fewer adverse sexual effects should be considered as potential first□line options in patients with severe mental illness interested in maintaining a sexual life.	It seems difficult to perform systematic inquiries in all patients about previous and current sexual life needed to assess potential sexual dysfunction. There is little evidence about the management of sexual dysfunction associated with mood stabilizers.	Level I
Moran, K., & Priebe, S. (2016). Better quality of life in patients offered financial incentives for taking anti-psychotic medication: Linked to improved adherence or more money? *Quality of Life Research*, *25*(8), 1897-1902.	Improvement in medication adherence was found to be a significant predictor of better subjective quality of life whilst the amount of incentives received was not. Improved medication adherence is associated with a more favorable SQO.	Quality improvement. A secondary analysis was performed using data of the experimental group in the trial. Regression models.	Use of audits to ensure correct data is analyzed.	There was no analysis of data regarding the amount incentives received.	Level II
Pauly, A., Wolf, C., Mayr, A., Lenz, B., Kornhuber, J., & Friedland, K. (2015). Effect of a multi-dimensional and **inter-**sectoral intervention on the adherence of psychiatric patients. PloS one, 10(10), e0139302.	Adherence in psychiatric patients is strongly affected by their attitude towards their medication. Increasing age contributes to a more adherent behavior until a threshold of about 75 years when forgetfulness and frailty impede adherence.	Two hundred sixty-nine patients from a German university hospital were included in a prospective, open, clinical trial with consecutive control and intervention groups 269 patients from a German university hospital were included in a prospective, open, clinical trial with consecutive control and intervention groups.	It was determined that the implementation of a multi-dimensional and inter-sectoral program enhances the patients' adherence significantly up to three months after discharge.	A patient's self-report is an indirect and subjective approach, and thus a less valid way of measuring adherence compared to direct methods. Seasonal fluctuations and rotating physicians influence the patients' behavior and lead to a possible over- as well as under-estimation of the intervention's effect size. The study time was too short for measuring relapse and subsequent readmission to the hospital.	Level III

(Table continues)

Citation	Main findings	Research method	Strength	Weakness	Level of Evidence
Rolving, N., Brocki, B. C., Mikkelsen, H. R., Ravn, P., Bloch-Nielsen, J. R., & Frost, L. (2017). Does an 8-week home-based exercise program affect physical capacity, quality of life, sick leave, and use of psychotropic drugs in patients with pulmonary embolism? Study protocol for a multicenter randomized clinical trial. Trials, 18(1), 245.	A home-based exercise program improves the physical capacity and quality of life for the patients in the intervention group.	Multicenter, randomized, controlled, assessor-blinded, superiority trial, investigating the effect of a low-cost home-based exercise program for acute pulmonary embolism.	The implementation process was interdisciplinary and standardized. The study time allotted was adequate.	The implementation period was too short.	Level II
Steinkamp, J. M., Goldblatt, N., Borodovsky, J. T., LaVertu, A., Kronish, I. M., Marsch, L. A., & Schuman-Olivier, Z. (2019). Technological interventions for medication adherence in adult mental health and substance use disorders: A systematic review. Journal of Medical Internet Research Mental Health, 6(3), e12493. doi:10.2196/12493	Despite the differences in the mental state between different disorders, and perhaps even different primary reasons for nonadherence, there is still much to be learned and transferred from one domain to the others. The most commonly studied method for measuring medication adherence is patient self-report Multicomponent interventions, including comprehensive disease management apps, have been studied in the majority of psychiatric disorders.	A systematic scoping review of technological interventions designed to improve medication adherence in mental health and substance use populations Qualitative synthesis of themes in the literature.	The strengths of our study included the breadth of the topic area and the comprehensive coverage of all types of interventions, as well as the literature-guided taxonomic framework. Tables of multicomponent interventions showed the utility of this transdiagnostic framework to decompose and categorize interventions across all adult mental health and substance use disorders.	The study was limited by this breadth; researchers were unable to conduct a quantitative synthesis or formal meta-analysis of all included studies given the wide variety of interventions, populations, and outcomes.	Level I

All selected articles were critically evaluated by examining each study, goals, design, methodology, results, sample size, and conclusions. I consulted the chair to ensure reliability and validity. All of the selected studies indicated evidence-based interventions that are employed to improve medication adherence among individuals with mental health issues. Three studies addressed the effectiveness of financial incentives (El-Mallakh & Findlay, 2015; Kreyenbuhl et al., 2016; Moran & Priebe, 2016). In addition to financial incentives, Kondo et al. (2015) evaluated other system-targeted interventions, including care coordination, blister packaging, and

cost-sharing. Five studies addressed technological interventions for improving medication adherence (Blixen et al., 2018; Kondo et al., 2015; Kreyenbuhl et al., 2016; Steinkamp et al., 2019). Only two studies evaluated the effectiveness of non-technological behavioral interventions (Kreyenbuhl et al., 2016; Pauly et al., 2015). In addition, one study addressed the use of a home-based physical exercise program to improve medication adherence (Rolving et al., 2017).

El-Mallakh and Findlay (2015) found that interventions that incorporate support services should be adopted to help in addressing special needs among mental health patients. Similarly, Kreyenbuhl et al. (2016) recommended the adoption of effective cognitive-behavioral interventions to improve medication compliance. Moran and Priebe (2016) indicated that improving medication compliance among mental health patients would enhance their quality of life. Kondo et al. (2015) recommended the adoption of psychosocial and behavioral interventions, including motivational interviewing, shared decision-making, compliance therapies, customized adherence enhancement, and cognitive-behavioral therapy. Rolving et al. (2017) found that physical exercise programs can improve adherence to psychotropic medication, patients' quality of life, and physical capacity.

Data Analysis

A descriptive statistical analysis approach was utilized to statistically analyze this doctoral project specifically to analyze studies conducted between 2015 and 2019. Analysis of the selected articles was conducted using quantities approaches. Initially, I read all the referenced articles. Although all the articles had been searched with the keywords and retrieved from professional databases, I was able to identify some studies that were generally highly

methodological. For instance, those articles had frequent and thorough descriptions of how patients fail to adhere to medication, never followed through with the health care providers especially after discharge from the hospital, and while in other environments including nursing homes, or under care and supervision of family members as well as on their own personal setting. After that, I independently assessed the methodological quality using a systematic review approach. For instance, in each study, I counted the number of times/frequencies of specific parameters that included the following: mental health, medication adherence, and interventions were mentioned. The findings of this present DNP analysis were tabulated and are presented in the Table 2.

Table 2

Frequencies

Articles	Hospital			Nursing home			Family care			Personal setting			Total
	Mental health	Heath adherence	Intervention	Mental health	Heath adherence	Intervention	Mental health	Heath adherence	Intervention	Mental health	Heath adherence	Intervention	
Blixen et al. (2018).	✓	✓	✓	✓	✓		✓			✓			7
Hartung, Low, Jindai, Mansoor, Judge, Mendelson, & Kondo (2017).	✓	✓	✓	✓	✓				✓		✓	✓	8
Kreyenbuhl, Record, & Palmer-Bacon (2016).	✓	✓	✓	✓			✓			✓			6
Moran & Priebe (2016).	✓	✓	✓			✓	✓		✓				7
Pauly, Wolf, Mayr, Lenz, Kornhuber, & Friedland (2015).	✓		✓	✓				✓					5
Rolving, Brocki, Mikkelsen, Ravn, Bloch-Nielsen, & Frost, (2017).	✓	✓	✓	✓	✓			✓					6
Steinkamp et al. (2019).	✓	✓	✓			✓							4
Total number of each factor in the method, results, and discussion sections.	7	6	7	5	3	2	3	2	2	2	1	1	41

Note: *Number of frequencies of the variables under investigation*

Findings

I employed both qualitative and quantitative approaches to interpreting findings. The overall number frequencies were based on the total number of each factor that was mentioned in the method, results, and discussion of the journal articles. In general, the total number of frequencies was 41. The results revealed that the majority of patients could demonstrate medication adherence as a result of interventions and could significantly affect positive improvement in their quality of life. Four out of the eight articles yield higher frequencies compared to other articles. Those specific articles (Blixen, et al., 2018; Kondo et al., 2017; Kreyenbuhl et al., 2016; Rolving et al., 2017) presented thorough descriptions of factors analyzed when compared to other studies. On the other hand, limited intervention frequencies based on low raw scores were documented under family care and personal settings (Pauly et al., 2015; Steinkamp, et al., 2019). Arguably, these findings indicated the need for health care staff to establish more collaboration approaches that could support mental health patients' medical adherence while working with family members, or on their own.

Numerous studies regarding this study were conducted by (El-Mallakh & Findlay, 2015; Kreyenbuhl et al., 2016; Montejo et al., 2018; Moran & Priebe, 2016; Rolving et al., 2017; Steinkamp et al., 2019) in different settings. However, their general goal was the advocacy for mental health patients in terms of medication adherence and innovative approaches, including interventions that can potentially motivate mental health patients to adhere to medication and improve their quality of life. Steinkamp et al.'s (2019) qualitative study targeted at populating a comprehensive framework by generating themes from the literature review, and the results were graphically presented using graphic organizers that included concept maps. The study classified

components understudy into interventions, medication adherence, mental health, and substance use populations. In support, Kreyenbuhl et al. (2016) pointed out the need for health care workers to emphasize and stress medication adherence after patient discharge. Kreyenbuhl et al. also advocated for innovative approaches such as integrating electronic technology monitors and mobile phones to monitor and strengthen compliance policies in support of patient's medication adherence. Recent studies (Montejo et al., 2018.) postulate that management of mental health treatment offsite the hospital setting is indeed crucial.

Furthermore, Rolving et al. (2017) advocated for a home care program that could vitally enhance the physical ability and quality of life among mental health patients. Other studies examined for this study attest that home visit programs with a well-designed schedule, providing daily living skills training, could enable mental health patients to follow through with health care providers and thus medication adherence (El-Mallakh & Findlay, 2015). Also, Moran and Priebe (2016) linked good adherence to antipsychotic medication.

Unanticipated limitations/outcomes. A primary limitation of the systematic review was the use of a single reviewer, which limited the number and rigor of the review process. The inclusion of more reviewers would facilitate in-depth and more extensive evidence appraisal. In addition to the time-consuming, nature of systematic review, investigators may also experience various difficulties in combining studies when conducting systematic reviews. Another limitation of the systematic review is that the selected studies employed different designs, thus making it challenging to combine the findings. In addition, the review process yielded a limited sample of studies; thus, the research goals and objectives may not have been addressed adequately.

Implications from Findings

The findings of this systematic review have a significant impact on individuals with mental health disorders, communities, psychiatric institutions, and the healthcare system in general. For example, mental health patients can apply knowledge from this systematic review to select the most effective evidence-based interventions for improving adherence to psychotropic medications. Also, psychiatric clinicians apply the findings to design interventions that meet the specific needs of individual mental health patients. Enhanced awareness of evidence-based strategies for improving adherence to psychotropic medications can significantly benefit patients' family members and the community in general. For instance, clinicians can design specific interventions for individual populations, depending on their needs. The current systematic review can also be used by psychiatric institutions as a reference when designing interventions for improving adherence to psychotropic medications.

Also, the findings have significant implications for positive social change in psychiatric care in the United States. Increased awareness of evidence-based interventions for medication adherence can be translated into practice to improve health outcomes among this population. Improvement of health outcomes among mental health patients can result in a reduction in healthcare costs and the rate of readmission.

Recommendations

Based on the comprehensive literature review, the selected articles identified various studies that indicated the effectiveness of evidence-based interventions for improving mental health patients' adherence to psychotropic medications. A recommendation for psychiatric clinicians was to address the current gap in knowledge by conducting further research on

technological interventions for improving medication adherence among patients with mental illnesses. In addition, more qualitative studies involving interviews or focus groups should be conducted to understand patients' perceptions and attitudes regarding specific evidence-based interventions for improving adherence to psychotropic medications.

Strengths and Limitations of the Project

A primary strength of the systematic review was the use of a systematic review design, which allowed for the usage of detailed inclusion-exclusion criteria. Systematic reviews also facilitate a comprehensive and exhaustive study of current, ongoing, and unpublished literature to address a given problem (Selcuk, 2019). Findings from systematic reviews can also be generalized to broader populations; thus, it can be used as reliable and accurate sources of evidence (Robinson & Lowe, 2015). The systematic review also employed the HBM and Iowa models that allowed the application of concepts, including perceived self-efficacy and usefulness of the evidence-based strategies for improving medication adherence. Another strength of this systematic review is that the knowledge, skills, and evidence that I gained throughout the process are transferrable into practice.

In relation to the methodologies, there is still a need for more qualitative studies to explore mental health patients' perceptions of the most effective evidence-based interventions for improving adherence to psychotropic medications. An in-depth understanding of patients' preferences, needs, and attitudes regarding specific interventions can aid in enhancing adherence because of improved willingness. Thus, future studies need to incorporate qualitative approaches, including face-to-face interviews, focus groups, and case studies to address the existing gap in knowledge of evidence-based medication adherence interventions.

Section 5: Dissemination Plan

Introduction

The current systematic review provided an opportunity for psychiatric nurses to understand the various evidence-based interventions for improving medication adherence among mental health patients. Thus, the dissemination of the findings can play an essential role in addressing the knowledge gap and facilitating the translation of evidence into practice. This section provides a comprehensive overview of how the systematic review findings were disseminated and the analysis of self in different professional roles.

Dissemination of Findings

The primary audience for the dissemination of the systematic review includes psychiatric clinicians, nurse managers, and adult mental health patients. A practical method for disseminating the findings of the systematic review is the development of a manuscript that was published in nursing journals and websites of psychiatric facilities. The manuscript can also be presented in future conferences and workshops. I also developed a poster and PowerPoint presentation that will be made available to psychiatric clinicians. The advantage of developing posters and PowerPoints presentations is that they can be presented to wide audiences in open forums. Because of the nature of the systematic review, the ideal audience is psychiatric nurses, physicians, and associated health care providers. The potential avenue of dissemination of this evidence-based systematic review is by conferences, workshops, and manuscripts that include journals such as the Journal of Psychiatric Research and The American Journal of Psychiatry. The available resources will be compiled together in a mini folder and be made available at the clinic as well as handing them to the healthcare providers for quick reference when needed.

Analysis of Self

My doctoral journey and the process of developing this systematic review has equipped me with immense knowledge and skills necessary to succeed in my practice area. First, the DNP project has strengthened me with leadership skills as a project leader and facilitator. As a project manager, I was able to enhance my planning and resource management skills by ensuring all project deliverables were met. I planned and executed every part of the project within the scheduled timeframe. As a nurse practitioner, I used knowledge from the DNP program to design the systematic review and conduct a comprehensive systematic review to identify the most effective interventions for improving medication adherence. Nurses who work in complex settings have the responsibility of identifying gaps in practice and designing or recommending effective interventions.

As a scholar, the systematic review strengthened my research, data collection, and analytical skills as I was able to access different libraries and appraised relevant studies. The primary goal of the systematic review was to address the gap in knowledge on evidence-based strategies for improving adherence to psychotropic medications. My educational background as a scholar prepared me adequately for the data collection, systematic review, and evaluation processes. One challenge I experienced was the limited number of studies evaluating the effectiveness of specific interventions for improving adherence to psychotropic or antipsychotic medications. There is a lack of practice guidelines regarding the implementation of evidence-based interventions for improving mental health patients' adherence to psychotropic medications.

Summary

The purpose of this systematic review was to explore the evidence-based strategies that can aid in increasing medication adherence in mentally ill patients. The target problem was the lack of adequate evidence of effective interventions for improving mental health patients' adherence to psychotropic medications. The systematic review yielded various interventions focused at patients, psychiatric clinicians and family members, and other health care professionals. The systematic review yielded eight studies that have addressed evidence-based strategies targeted at patients, psychiatric clinicians, and systems. Specifically, the studies addressed interventions such as financial incentives, care coordination, blister packaging, and cost-sharing. Also, the studies evaluated technological interventions and a home-based physical exercise program. The systematic review is an essential addition to existing evidence on effective strategies for improving medication adherence among individuals with mental health issues. However, there is a need for further qualitative studies to address patients' preferences of the most effective evidence-based interventions that meet their needs.

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