EDUCATING PATIENTS ON LONG ACTING INJECTABLE ANTIPSYCHOTICS TO IMPROVE MEDICATION ADHERENCE

by

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DEDICATION

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ABSTRACT

Purpose: The purpose of this quality improvement (QI) project was to provide education for simulated patients at the Telehealth Learning Center (TLC) with psychotic disorders on the advantages and disadvantages of utilizing long-acting injectable antipsychotics (LAIAs).

Background: Despite the critical importance of medication in managing psychotic disorders, nonadherence with routine medication regimes continues to be a major issue in mental healthcare. Due to its negative impact on patients and the healthcare system, this problem has created the need for a method of administering medication that requires less maintenance. Alternative treatment options such as long-acting injectable antipsychotics can increase medication adherence but are infrequently discussed with patient taking oral antipsychotics.

Methods: Standardized patients were recruited for this quality improvement project by the TLC coordinators using informational flyers. The project intervention was a 30-minute educational Zoom presentation. Participants were asked to complete a pre- and posttest to determine if the intervention increased patient knowledge about the use of LAIAs to manage psychotic symptoms.

Results: There were 10 total participants; each participant completed the pre- and posttest and reported that the intervention was informative. The pre- and posttest findings indicate education regarding LAIAs increased participant willingness to utilize this treatment modality.

Conclusions: Educational presentations provide an opportunity to improve patient knowledge. The educational presentation in this quality improvement project increased participant knowledge and acceptance of LAIAs. Due to the COVID-19 pandemic, a major limitation in this study is the use of standardized patients in a virtual clinic versus an in-person presentation with

patients diagnosed with a serious mental illness. It is unknown if any of the standardized patients had psychotic disorders themselves; however, they offered valuable feedback about the effectiveness and feasibility of the project intervention.

INTRODUCTION

Schizophrenia, a lifelong disease that requires ongoing treatment, affects about seven per 1,000 adults globally (Higashi et al., 2013). The exact cause of schizophrenia is unknown; however, research suggests that an increase in dopamine plays a significant role in emotional regulation and is critical to the pathogenesis of schizophrenia (Kesby et al., 2018). Individuals with schizophrenia develop symptoms that lead them to misinterpret reality (Mayo Clinic, 2018). These symptoms are most effectively managed with the use of medications, and health care providers commonly prescribe antipsychotics to help their patients manage the disorder (Higashi et al., 2013); however, 40% to 50% of patients diagnosed with schizophrenia have been found to be nonadherent with their routine medication regimens (Bimbaum & Sharif, 2008). Despite the critical importance of medication in managing the disease, nonadherence continues to be a significant problem. This issue has created the need for alternative methods of administering medication that allow it to remain in the system for longer periods of time than oral medication would. One such method is long-acting injectable antipsychotics (LAIAs).

LAIAs are intramuscular medications used monthly to treat individuals who have barriers to taking daily oral medication or who prefer a less frequent medication regimen. LAIAs are one of the most viable treatment options to increase medication adherence in patients with psychotic disorders (Biagi et al., 2017). Despite their effectiveness, long acting injectables remain underutilized in clinical practice. The literature suggests that providers are hesitant to utilize LAIAs for several reasons. Correll et al. (2016) state that most providers lack knowledge surrounding the use of long-acting injectable, including pharmacokinetics, dosage, and management of the medication. Another common misconception about LAIAs is that they have

greater side effects than oral medications (Correll et al., 2016). However, Morris and Tarpada (2017) report similar side effects between both administration routes. The primary goal of LAIAs is to decrease the daily need for medication, improve medication adherence, and optimize patient outcomes.

Background Knowledge

About 117 million Americans live with one or more chronic illnesses requiring the use of medication to manage the disease (Brown et al., 2016). Despite the abundance of medication available to treat chronic conditions, nearly 50% of individuals are nonadherent to medicine, and approximately 125,000 individuals with treatable ailments pass away due to poor adherence to treatment (Scarlett & Young, 2016). Medication adherence is defined as the extent to which patients take medication as prescribed by their provider, and individuals are considered adherent when the number of pills absent in a given period divided by the number of pills prescribed by the physician in that same period is greater than 80% (Brown et al., 2016).

Medication nonadherence is a global health concern and is extremely common and difficult to resolve (Kvarnström et al., 2018). It is the most common cause of therapeutic failure in general practice and specialty areas (Lucca et al., 2015). Poor medication nonadherence is closely associated with poor outcomes, overuse of acute healthcare services, and increased healthcare costs and accounts for $100-$300 billion of avoidable healthcare costs yearly in the United States (U.S.) (Scarlett & Young, 2016).

Patients do typically not disclose nonadherence to medication; therefore, improving adherence is closely related to enhanced provider-patient communication, finding ways to identify individuals who are nonadherent with treatment plans, and understanding reasons for

nonadherence (Brown et al., 2016). Measuring adherence can be difficult due to providers having to rely on patients for accuracy (Kvarnström, Airaksinen, & Liira, 2018). Most physicians believe that lack of access to treatment and forgetfulness are the main contributors to nonadherence; however, nonadherence can be a deliberate decision made by the patient (Brown et al., 2016). Nearly 83% of individuals report that they would not inform a provider if they plan not to fill new prescriptions due to uncertainty on how the provider would react, increasing the need to establish open provider-patient relationships (Brown et al., 2016). Provider-patient partnerships are essential to achieve optimal outcomes in treatment. It is best practice for providers to give individuals adequate education regarding their disease process and it is the patients responsibility to be involved in their care and understand treatment options as well as the consequences of being nonadherent to medication (Scarlett, & Young, 2016).

Medication adherence is a multifaceted and dynamic process influenced by various factors. Approximately 43% of individuals with psychiatric disorders are nonadherent to prescribed medications, making this one of the biggest obstacles in treating patients with serious mental illness (SMI) (Lucca et al., 2015). When patients are not compliant with treatment plans, there can be severe clinical consequences such as relapse, rehospitalizations, and death. Health risk, cost, lack of insight regarding mental health diagnosis, and side effects contribute to medication nonadherence in individuals with SMI.

Health Risk and Life Expectancy

Individuals diagnosed with schizophrenia, bipolar disorder, and major depressive disorder have a 10- to 25-year shortened life expectancy, with the most common cause of death being physical diseases (Correll et al., 2015). Poor diets, obesity, smoking, and sedentary

lifestyles, coupled with decreased access to medical care, contribute to poor health outcomes in people with SMI (Correll et al., 2015). These factors increase the risk of cardiovascular disease, which is 3.6% greater in individuals with schizophrenia than in people without a psychiatric diagnosis (Ilay et al., 2017). Increasing access to health care and education regarding healthy diets, smoking cessation, and active lifestyles is necessary for disease prevention and management to improve overall outcomes to at-risk populations. In patients with SMI, suicide is also a leading cause of death (Ventriglio, 2016).

Failure to comply with treatment for SMI often leads to a relapse of symptoms; paranoia, delusions, hopelessness, command hallucinations, and substance abuse are closely associated with suicidal ideations (Ventriglio, 2016). Suicide is the leading cause of death in individuals with a psychotic disorder, and suicide risk increases with each psychiatric diagnosis. In individuals without mental disorders, the risk is 0.3%, but the risk rate increases to 3.4% in individuals affected by one mental disorder to 6.2% for those with more than one psychiatric disorder (Ventriglio, 2016). Medication is the cornerstone of treatment in psychotic disorders and increasing the use of LAIAs may help decrease negative symptoms and prevent future relapse.

Cost

Medication nonadherence has serious consequences for individuals as well as the economy. Baigi et al. (2017) and Stevens et al. (2016) point out that each relapse increases the financial burden on the patient as well as the health care system. In the U.S., about $1.5 billion is spent annually on hospitalizations due to nonadherence of antipsychotic medication (Shafrin et al., 2017). Poor adherence to treatment increases the risk for relapse and rehospitalization in individuals with psychotic disorders, which disrupts daily. Within two years after discharge, 74%

of patients diagnosed with schizophrenia become nonadherent with prescribed medication and were more likely to be hospitalized than those who comply with medication regimens (Bimbaum & Sharif, 2008). Marcus et al. (2015) found rehospitalization to be 33% lower in patients who received LAIAs compared to those receiving oral medication. Utilizing medications that remain in the system for a longer period of time eliminates the routine demands associated with oral medications (Correll et al., 2016).

Education

Proper education regarding psychotic disorders and its treatment modalities should be discussed with patients and their families to maximize acceptance and improve adherence, leading to optimal outcomes (Chien et al., 2013). Long-acting injectable antipsychotics (LAIAs) are not discussed with over 50% of patients who are taking oral antipsychotics, which results in patients not being involved in determining a medication regimen to fit their needs best (Brissos et al., 2014). It is vital to evaluate current knowledge and attitudes surrounding the use of long-acting injectables in patients with SMI to address potential barriers and increase use in clinical practice. It is the clinicians' responsibility to create ways to decrease negative thinking associated with taking medication and create partnerships with patients and families that encourages education, promotes shared decision-making, and increases patient accountability in managing illness (Kane, Kishimoto, & Correll, 2013).

Side Effects

Antipsychotic medications are the first line of treatment in patients with psychotic disorders (Stroup & Gray, 2018). Every drug has the potential for side effects ranging from minor issues to severely intolerable problems. In patients with schizophrenia, adverse effects are

closely associated with lower adherence (Dibonaventura et al., 2012). Common side effects of antipsychotic medications include mild sedation, dry mouth, and gastrointestinal symptoms (Stroup & Gray, 2018). Extrapyramidal side effects (EPS) are serious reactions to antipsychotic medications and have been identified as the main cause of poor adherence due to difficulty reversing unwanted symptoms (Stroup & Gray, 2018). More than half of all patients treated with first-generation antipsychotics experience EPS within several days after the initial treatment (Divac et al., 2014). Tardive dyskinesia, acute dystonias, and akathisia are abnormal movements associated with antipsychotic medications. These unusual movements interfere with a person's ability to function normally (Stroup & Gray, 2018). Unpleasant symptoms may be relieved after a person stops taking the medication; however, tardive dyskinesia may be irreversible and persist after the medication has been discontinued (Divac et al., 2014). Despite adverse reactions to medications, proper assessment can prevent drug-induced movement disorders from worsening, and they can be treated with medication prescribed by a healthcare professional.

Local Problem

Arizona has a population of 7.17 million individuals (Data USA, n.d.). From 2015 to 2016, more than 20% of individuals age 18 to 25 reported having a mental illness in the past year (Arizona Department of Health Services [AzDHS], 2019). According to the Substance Abuse and Mental Health Services Administration (SAMHSA), of those diagnosed with an SMI, only 40% of adults living in Arizona received treatment. Cost and accessibility to medical services continue to be a major challenge. In 2016 about 13.6% of residents reported not seeing a provider in over one year due to financial barriers (Data USA, n.d.).

Intended Improvement

Project Purpose

Nonadherence with medication regimens in mental health patients pose potential problems such as decompensation, rehospitalization, increased use of emergency services, and increased risk of death (Phan, 2016). The purpose of this QI project is to provide education for patients at the Telehealth Learning Center (TLC) with psychotic disorders on the advantages and disadvantages of utilizing long-acting injectable antipsychotics (LAIAs).The primary outcome for this project is to increase patient knowledge of LAIAs and to promote their use to manage psychotic disorders and improve quality of life.

Project Question

In patients with psychotic disorders, how does education regarding long-acting injectable antipsychotics impact their knowledge and acceptance of this treatment modality?

Project Objectives

There are four objectives for this project:

1. Evaluate TLC patient knowledge and acceptance regarding LAIAs to manage psychotic disorder utilizing a pretest.
2. Provide patients at the TLC with relevant information on the risks and benefits of LAIAs.
3. Evaluate TLC patient knowledge and acceptance of LAIAs to manage psychotic disorder post intervention.
4. Develop recommendations for the TLC on how to educate patients on the use of LAIAs to increase acceptance of this treatment modality.

Theoretical Framework

The transtheoretical model (TTM) (Appendix F) developed by Prochaska and Diclemente (1983) recognizes that change can be complicated and provides an explanation of how individuals perceive new ideas. It also provides supporting strategies on ways to facilitate and maintain change. According to Prochaska and Diclemente (1983), the model describes five stages of change: *precontemplation*, *contemplation*, *preparation*, *action*, and *maintenance*.

Precontemplation

During the precontemplation stage, individuals are unable to recognize they have a problem, which makes them resistant to new ideas (Levesque et al., 2001). For many years, oral medications have been utilized as the treatment option to manage patients with mental illness. Studies show that patients with a psychotic disorder are likely to become nonadherent with treatment regimens due to alterations in thought process, perception, and emotions (Kane et al., 2013). To address this issue, long-acting injectable antipsychotics (LAIAs) were developed to simplify medication regimens by allowing less frequent administration (Morris & Tarpada, 2017).

Contemplation

Individuals in the contemplation stage are considering changing habits within six months (Levesque et al., 2001). During this stage, individuals examine the pros and cons of modifying their habits but due to uncertainty, people remain reluctant to change (Levesque et al., 2001). Bringing awareness to the advantage and disadvantages associated with LAIAs may offer a new perceptive to a longer lasting treatment modality to assist with medication adherence. Individuals in the precontemplation and contemplation phases should be given time to process information

because they can become more resistant if they are forced to act before, they are prepared to do so (Prochaska et al.,2001).

Preparation

In the preparation stage, actions are in place to move toward the goal (Levesque et al., 2001). Individuals in this phase are ready to accept changes in the next 30 days (Levesque et al., 2001). During this phase, leaders must educate, train, and support individuals by maintaining consistent communication; providing an accurate timeline on when the change will occur; and stating clear goals and expectations (Levesque et al., 2001). Following an educational webinar participant will have the opportunity to ask questions and discuss concerns regarding LAIAs.

Action

During the action stage, individuals are focused on altering old behaviors and adopting new ones (Levesque et al., 2001). Individuals should be encouraged to keep their goals at the forefront of their health care. The objective of increasing the use of LAIAs is to improve medication adherence in patients who experience barriers that may prevent them from taking daily oral medication. The overall goal is to improve the quality of life in patients with psychotic disorders.

Maintenance

The maintenance stage is when patients are able to sustain change for at least six months (Levesque et al., 2001). Patients are expected to keep scheduled follow up appointments and should continually work to maintain new behaviors and focus on maintaining engagement in treatment plans.

TTM can be utilized to create a fluid transition from current practices to ones that are focused on improving the quality of care in patients with psychotic disorders. This level of change will require not only a change in the way providers currently practice but also a mental shift and buy-in from patients. See Appendix F for a diagram that shows how each phase relates to steps in this project.

Literature Synthesis

Evidence Search

A literature search was conducted for studies on the utilization of LAIAs as a treatment modality for patients diagnosed with psychotic disorders. PubMed was utilized to search for relevant articles using the following search strategy: (compliance[Title/Abstract] OR adherence[Title/Abstract]) OR ("Medication Adherence"[Mesh]) AND ("Antipsychotic Agents"[Mesh]) OR (antipsychotic[Title/Abstract]) AND ("Delayed-Action Preparations"[Mesh]) OR (long acting[Title/Abstract]) produced 650 results. Filtering these articles to the past five years produced 251 results.

Including the key term “patient education” in the initial search limited the number of articles for this topic; therefore a separate PubMed search was completed using the following strategy: ("Patient Education as Topic"[Mesh] OR "Patient Education Handout" [Publication Type]) OR (patient education[Title/Abstract]) AND (compliance[Title/Abstract] OR adherence[Title/Abstract]) OR ("Medication Adherence"[Mesh]) AND ("Antipsychotic Agents"[Mesh]) OR (antipsychotic[Title/Abstract]) which resulted in 135 results. Filtering these articles to the past five years resulted in 12 articles (Appendix H).

The inclusion criteria for each search included: research studies in peer-reviewed journals, the English language, and published between 2015 and 2020. Exclusion criteria included studies, articles not in the English language, those that are not within the past five years, and those that focused on all other psychiatric diagnoses. After duplicates and other articles irrelevant to the topic were removed from the first search, 113 articles were reviewed, and 10 articles closely aligned with this topic. After duplicates and other articles irrelevant to the topic were removed from the second search, 17 articles were reviewed, and two articles closely aligned with this topic. See Appendix I for a flow diagram of how the search was conducted. Twelve articles from both searches were used in this project. See Appendix H for the literature review grid of the articles mention in the literature synthesis.

The following three themes were identified in the literature synthesis: 1) medication adherence is a common issue across all specialties; however, it is higher in patients diagnosed with mental illnesses, 2) LAIAs have the ability to reduce relapse and rehospitalization, and 3) the metabolic advantages of LAIAs.

Comprehensive Appraisal of Evidence

Non-adherence to medication is a common issue in medical practice across all specialties (Boyce et al., 2018; Grover et al., 2019; Pacchiarotti et al., 2019; Wu et al., 2016). Medication is an essential component to preventing future episodes and managing unwanted symptoms in patients with mental illness; however, adherence to treatment is a major problem (Boyce et al., 2018; Pacchiarotti et al., 2019). Nearly half of patients prescribed medications to treat psychotic disorders are not compliant with treatment plans, and 10% to 60% of individuals diagnosed with bipolar disorder and schizophrenia are nonadherent to medication regimens (Grover et al, 2019;

Pacchiarotti et al., 2019). Poor adherence is a serious issue, as it is closely associated with a lower quality of life, higher risk of relapse, rehospitalizations, and suicide (Grover et al., 2019; Pacchiarotti et al., 2019).

Relapse and Rehospitalization Reduction

A significant burden of psychotic disorders comes from poor adherence to treatment leading to higher relapse rates requiring multiple rehospitalizations (Baigi et al., 2017; Pilon et al., 2017; Stevens et al., 2015; Wu et al., 2016). Patients who receive early intervention and treatment tend to have better outcomes compared to those who experience delays in treatment (Aggarwal et al., 2019). Pilon et al. (2017) found that patients receiving second generation LAIAs, specifically paliperidone palimate, were at a significantly lower risk of rehospitalization than those receiving oral antipsychotics. Additionally, there were fewer emergency department visits and reduced inpatient costs in individuals receiving paliperidone palimate compared to risperidone LAIAs (Pilon et al., 2017). Individuals who are adherent with treatment plans are at a lower risk of being hospitalized for a mental health reason (Baigi et al., 2017). LAIAs are an ideal treatment modality for patients who are have barriers with daily dosing as well as those who prefer a simpler treatment plan and can be used as a first line treatment in patient with psychotic disorders (Aggarwal et al., 2019). The use of LAIAs in patients who have barriers to daily dosing gives providers the opportunity to closely monitor patient adherence, progression, identify early signs of relapse and provide appropriate interventions when necessary (Aggarwal et al., 2018; Baigi et al., 2017; Boyce et al., 2018; Chan et al., 2016; Yeo et al., 2017).

Metabolic Advantages of LAIAs

Unlike oral antipsychotics, LAIAs avoids first pass metabolism, which creates a stable relationship between the drug dose and blood level of medication (Baigi et al., 2017; Boyce et al., 2018). Abilify once monthly 400 mg (AOM 400) provided sustained mean plasma concentrations of aripiprazole comparable to those achieved with multiple consecutive daily doses of oral aripiprazole 10–30mg/day at steady state, without any clinically meaningful changes in adverse events, laboratory values, vital signs, or electrocardiogram measurements (Baigi et al., 2017). AOM 400 is well tolerated and has been shown to be as effective as a first-line treatment option in patients 35 years and younger (Baigi et al., 2017).

Patients who have barriers to daily dosing may overcome adherence issues by simplifying treatment and using LAIAs (Boyce et al., 2018; Yeo et al., 2017). Social stigmas as well as self-stigmas towards medication use in patients with mental illnesses creates barriers and can delays care (Boyce et al., 2018). LAIAs are underutilized in current practice, research suggest perception and attitudes from health care providers contributes to underuse more than hesitancy from patients (Baigi et al., 2017). Grover et al. (2019) identified a common misconception among providers that patients would not accept LAIAs as a treatment modality; however, when given the option to take LAIAs, patients often preferred this treatment method over oral medications (Brissos et al., 2014).

Strengths of Evidence

Strength of the literature includes two studies that evaluated the attitude and acceptance of LAIAs in patients with SMI (Grover et al., 2019; Yeo et al., 2017). By getting the client's

perspective, clinicians can explore patient knowledge and determine what education is needed to increase buy-in of LAIAs use.

Many of the studies were retrospective observational studies and mirror-image studies, which are said to have advantages over randomized controlled trials (RCT) when evaluating medication adherence (Maestri et al., 2018). A major strength in the study by Abdel-Baki et al. (2020) is the naturalistic design which rendered results based on participants in a 'real life' setting versus those closely monitored in an RCT, making the data more applicable to more individuals.

Weaknesses of Evidence

A major weakness was the recruitment process of participants. In various trials, individuals were recruited from a single setting in a controlled environment; therefore, the representativeness of the samples was restricted, and it is unclear how patients outside of these sample groups would benefit from this treatment modality (Baigi et al., 2017; Yeo et al., 2017). There were many RCT studies mentioned in numerous critical review articles. Greene et al. (2018) state RCTs are usually short; therefore, they may not be the best source of information when making decisions for someone who will be on the medication indefinitely. Another weakness in the literature involved participant selection. Typically, patients who are nonadherent with treatment are less likely to consent to participate in randomized controlled clinical trials (Greene et al., 2018). They often meet exclusion criteria because of numerous failed treatments and difficulty stabilizing (Boyce et al., 2018; Yeo et al., 2017). Therefore, it is difficult to determine how LAIAs will benefit high-risk populations.

Gaps and Limitations

Identified gaps in this literature synthesis include limited research on patient education pertaining to the use of LAIAs. It is apparent that more research is needed to better guide clinicians on when to discuss the use of LAIAs in patients with psychotic disorders to optimize their use in current practice. A significant limitation of the literature in this synthesis is that very few studies clearly outline the advantage of LAIAs over oral antipsychotics in preventing relapse and rehospitalization (Baigi et al., 2017). Further studies are needed to explore the patient preference and acceptability of LAIAs versus oral medication.

METHODS

Project Design

This DNP project utilized the framework of a quality improvement (QI) to implement an educational intervention aimed to improve knowledge and attitudes towards the utilization of LAIAs in patients with diagnosed with a psychotic disorder to manage their symptoms. Pre- and post-engagement surveys were completed by participants to determine if interventions lead to measurable improvements as evidenced by an increase in patient knowledge and willingness to use LAIAs to increase medication adherence. Studies show that pre- and posttests offer insight into the successful delivery of content (Luetsch & Burrows, 2016).

Model for Implementation

The plan-do-study-act (PDSA) is a four-step cycle that is used to improve processes or implement change (Taylor et al., 2014) (Figure 1).

Plan

In the first step, the ‘Plan’ phase, the researcher identified a need for change and developed a plan to test the change (Taylor et al., 2014). In this QI project, the project manager has identified medication adherence as a major problem in patients with psychotic disorders. LAIAs can be utilized to treat patients with psychotic disorders that may experience barriers to taking daily medications. An educational presentation (Appendix E) was approved for use by the IRB on October 1, 2020. Standardized participants were recruited based on inclusion criteria and availability. The TLC coordinator scheduled the project intervention for October 15, 2020, at 1000. The TLC coordinator sent a link to access the Zoom meeting to participants on October 8, 2020, and again on October 14, 2020, the night before the intervention.

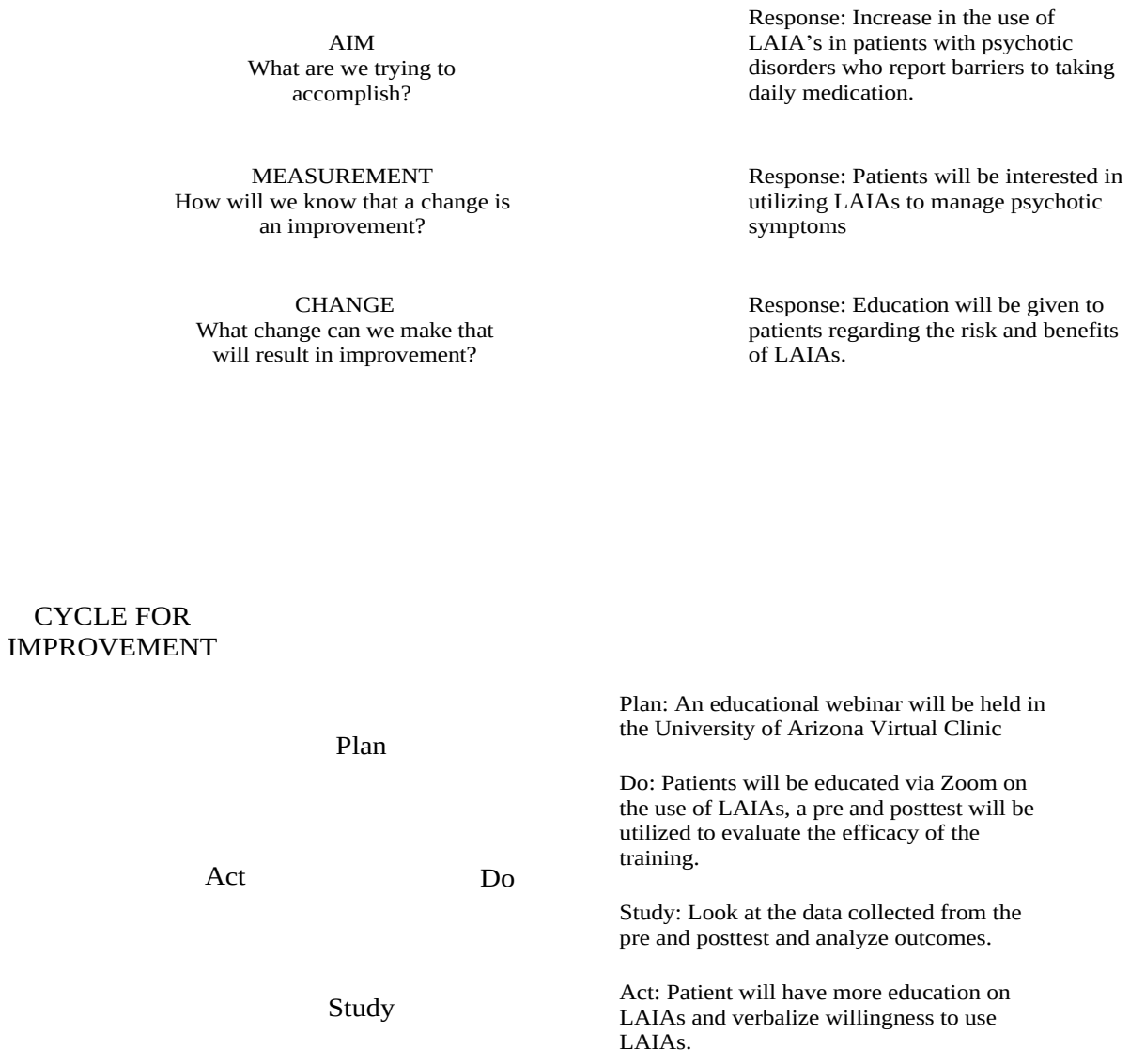
Do

In the second step, the ‘Do’ phase, the change is implemented on a small scale and problems and unexpected findings are documented about the process (Taylor et al., 2014). Participants were given a pretest (Appendix D) to assess current knowledge and willingness to use LAIAs to increase medication adherence. The intervention included an educational presentation (Appendix E) given to eligible participants. During the presentation, participants were provided with education on medication adherence and the use of LAIAs to manage psychotic symptoms. See Appendix E for presentation slides. Information for the presentation was gathered from various scholarly articles. Participants were given a posttest to evaluate the efficacy of the intervention (Appendix D). On October 15, 2020, at 1000, all participants logged into the educational presentation via Zoom. Participants were sent a link in the chat box to complete a Qualtrics pretest survey. There was 100% compliance. The project manager gave a

30-minute education presentation to 10 participants that had no previous knowledge of LAIAs. Participants were sent a link in the chat box to complete a Qualtrics posttest survey.

Figure 1

Plan-Do-Study-Act (PDSA) Diagram



Study

During the third step, the 'Study' phase, collected data was analyzed and outcomes were compared to predicted outcomes (Taylor et al., 2014). In this QI project, data was collected

utilizing pretest/posttest surveys (Appendix D) to determine if the intervention lead to measurable changes in willingness to utilize LAIAs to manage psychotic symptoms. The project manager expected 100% compliance, and this was achieved. After comparing the pre and posttest surveys, patients reported increased knowledge of LAIAs and were able to discuss ways to be active participants in their treatment.

Act

Lastly, if necessary, in the final step, the 'Act' phase, researchers adopt the change, or use the data collected to identify other potential interventions that will result in improvement and start the cycle again (Taylor et al., 2014). Following the presentation, participants were able to verbalize the importance of medication adherence, the advantages and disadvantages of LAIAs; they were also able to list ways to converse with their mental health provider regarding their needs to improve medication adherence. I recommend additional PDSA cycles in an outpatient clinic utilizing patients who have been diagnosed with a psychotic disorder and currently taking oral antipsychotics.

The PDSA cycle (Figure 1) is a flexible model that is well known for its simplicity and applicability to numerous situations (Reed & Alan, 2015). The PDSA allows researchers to identify a problem, implement an intervention, analyze the outcomes, and decide if interventions led to improvement. If interventions do not lead to improvement, researchers have the opportunity to make changes and go through the cycle again (Reed & Alan, 2015). See Figure 1 for the PDSA model for this QI project.

Setting and Stakeholders

Due COVID-19, the project manager was unable to access patients at the originally identified clinical site; therefore, the project took place at the Telehealth Learning Center (TLC) virtual clinic. The TLC is located in Tucson, Arizona, on the campus of the University of Arizona. The University of Arizona is one of the largest universities in Tucson (DataUSA, n.d). As of 2018, Tucson has a population of about 545,987 residents with a median age of 33.5 (DataUSA, n.d). The population of Tucson is 43.6% White, 26.2% Hispanic or Latino, and 5.25% Black or African American (DataUSA, n.d).

Key stakeholders in this project were standardized patients portraying individuals with psychotic disorders. Some 40% of patients with psychotic disorders are nonadherent with daily oral agents (Baigi et al. 2017). Studies show that when patients are compliant with a routine medication regimen, the risk for deterioration decreases (Baigi et al., 2017). LAIAs decrease the need for daily medication and when administered monthly or quarterly can increase adherence leading to fewer relapse and rehospitalizations (Baigi et al. 2017).

Planning the Intervention

The director of the Telehealth Learning Center (TLC) has agreed to implement this project in the virtual clinic at the University of Arizona. See Appendix G for a project timeline. The first 10 minutes of the session was utilized to gather data on participants' knowledge regarding the use of LAIAs to manage psychotic symptoms. Participants were sent a link for a Qualtrics online survey in the Zoom chat box to complete the pretest. Following the completion of the pretest (Appendix D), an educational presentation (Appendix E), the project manager, utilizing Zoom, conducted lasting approximately 30 minutes. The content included in the

presentation is information retrieved from various scholarly articles in peer-reviewed journals. Participants were sent a link for a Qualtrics online survey in the Zoom chat box to complete the posttest (Appendix D). The purpose of the posttest was to evaluate knowledge gained from the intervention and assess participants willingness to use LAIAs to manage psychotic symptoms. Patients were instructed not to make any changes to their current treatment plan without consulting with their provider. Participants were encouraged to follow up with their mental health provider for questions about this treatment modality.

Participants and Recruitment

A convenience sample was utilized to recruit participants for this QI project. Inclusion criteria included: a) 18 years of age and older, b) English speaking, c) standardized patients at the TLC, and d) with reliable access to the internet. Exclusion criteria included individuals under the age of 18. The TLC provided 8-10 standardized patients for this quality improvement project.

Participants for this project were recruited using informational flyers (Appendix C). Due to the current COVID-19 pandemic, these flyers were given to the director of the TLC at the University of Arizona and standardized patients were utilized in the virtual clinic. See Appendix A for site authorization. Individuals who wanted to participate in this QI project expressed interest by notifying the director of the TLC. The TLC director provided participants with specific instructions for this DNP project intervention. Standardized patients portrayed individuals who have been diagnosed with a psychotic disorder, not currently experiencing symptoms, and are prescribed oral antipsychotic medication. An educational presentation was conducted via Zoom at a time agreed upon by the project manager, participants and the director

of the TLC. No compensation was offered for participation. See Appendix C for recruitment flyer.

Consent and Ethical Considerations

Before the project intervention, participants were given a disclosure form. Consent was implied if participants continued and participated in the project. Participants were given sufficient time to review the participation correspondence, which describes the expectations, purpose and significance of this QI project. Inclusion criteria included standardized patients who were willing to portray individuals who have a psychotic disorder, over the age of 18, English speaking, and internet accessibility. Exclusion criteria included individuals under the age of 18 and all other mental health diagnoses. See Appendix B for disclosure form.

A determination of human research form was completed and submitted to the Institutional Review Board (IRB) (Appendix A) and permission to proceed was obtained prior to implementation. All data collected was anonymous.

Data Collection

The online survey software Qualtrics was utilized to disperse the pretest and posttest to participants. The project manager to collect data (Appendix D) created a 12-item pretest and an 8-item posttest.

Data Analysis

Descriptive statistics was utilized to summarize and analyze the data collected in this QI project to identify patterns that may appear. Demographic data was evaluated using descriptive data. Baseline data obtained from the pretest survey was compared to the posttest survey, and changes in responses was utilized to evaluate the effectiveness of the intervention utilizing

descriptive data. Responses to free text questions were summarized and used to determine if participants found this presentation advantageous. A table was used to compare the data obtained in this intervention.

RESULTS

Participant Characteristics

The project manager requested 8-10 participants for this intervention. The TLC provided 10. The inclusion criteria for participants included 18 years of age and older, English speaking, standardized patients at the TLC, and with reliable access to the internet. All participants met the inclusion criteria and agreed to participate in the QI project. The majority of the participants were females, and each reported being 55 years of age or older. Participant education ranged from some college to master's prepared. Participant demographics are depicted in Table 1.

Table 1

Participant Demographics

Gender of Participants (N=10)	**Males** 10% (N=1)	**Female** 90% (N=9)	**No Response** 0% (N=0)	
Highest Level of Education Completed	**Some College** 10% (N=1)	**Associate degree** 10% (N=1)	**Bachelors' Degree** 50% (N=5)	**Master's Degree** 30% (N=3)
Employment	**Part-time** 50% (N=5)	**Retired** 50% (N=5)		

The pretest also gathered information about antipsychotic medication use. Participants were asked if they were currently taking prescribed oral medication to manage unwanted symptoms associated with a mental health diagnosis. Participants were asked how often they missed a dose of prescribed antipsychotic medication during a single week, and they were also

asked to describe current barriers to medication adherence. See Table 2 for compiled responses to questions 5, 6, and 7.

Table 2

Current Medication Adherence

Are you currently prescribed oral medication to manage unwanted symptoms associated with your mental health diagnosis?	**Yes** 30% (N=3)	**No** 70% (N=7)	**No Response** 0% (N=0)
How often do you miss a dose of your prescribed antipsychotic medication during the week?	**I never miss a dose** 60% (N=6)	**1-2 times per week** 10% (N=1)	**No Response** 30% (N=3)
What is a major barrier to not taking your medication?	**None** 70% (N=7)	**I just forget sometimes** 10% (N=1)	**No Response** 20% (N=2)

Outcomes

Prior to the educational session, all (N=10, 100%) participants reported no previous knowledge of an intramuscular medication to manage psychotic symptoms. Current knowledge was evaluated, and participants were asked to report if their provider has spoken to them about LAIAs. The pretest also assessed individual awareness of the advantages and disadvantages of LAIAs. Before the educational intervention majority of participants stated they were extremely unlikely to utilize this treatment modality. See Table 3 for compiled results of questions 9, 10, 11, and 12 of the pretest.

Table 3

Current Knowledge

Education from Provider	**Yes** 10% (N=1)	**No** 80% (N=8)	**No Response** 10% (N=1)	
Aware of Advantages	**Yes** 0% (N=0)	**No** 100% (N=10)	**No Response** 0% (N=0)	
Aware of Disadvantages	**Yes** 0% (N=0)	**No** 100% (N=10)	**No Response** 0% (N=0)	
Likelihood to use LAIAs	**Neither Likely nor Unlikely** 10% (N=1)	**Somewhat Unlikely** 20% (N=2)	**Extremely Unlikely** 60% (N=6)	**No Response** 10% (N=1)

The data collected in the pretest supports that there is a need to increase patient knowledge on alternative treatment modalities to manage psychotic symptoms. A 30-minute presentation was given via Zoom. The information included in the presentation was gathered from various scholarly articles in peer-reviewed journals. The following information was collected from the posttest survey. See Table 4 for posttest knowledge questions.

Table 4

Posttest Knowledge Questions

Medications are important to manage unwanted symptoms associated with your mental health diagnosis.	**Answered Correctly** 100% (N=10)	**Answered Incorrectly** 0% (N=0)	**No Response** 0% (N=0)
There is an intramuscular medication that can be given monthly to manage symptoms.	**Answered Correctly** 100% (N=10)	**Answered Incorrectly** 0% (N=0)	**No Response** 0% (N=0)
Long- acting injectables decrease the need for daily oral medication.	**Answered Correctly** 100% (N=10)	**Answered Incorrectly** 0% (N=0)	**No Response** 0% (N=0)

Following the presentation, 80% of participants stated they would consider speaking to their provider about using LAIAs, one participant (N=1, 10%) would not speak to their provider about LAIAs, and one (N=1, 10%) chose not to answer this question. The majority of participants (N=7, 70%) stated they believe LAIAs would improve adherence to medication, two (N=2, 20%) stated LAIA would neither improve nor decrease adherence, and one (N=1, 10%) did not answer.

Two opened ended questions were included in the posttest. The first question asked what participants enjoyed about the presentation, and most stated that the presentation was informative, and they enjoyed actively participating in the discussion. The second question asked what participants disliked about the presentation. Six (N=6, 60%) participants reported not having any dislikes, while four (N=4, 40%) participants reported difficulty answering some of the questions as a result of being standardized patients not currently diagnosed with a psychotic disorder.

All participants answered the three knowledge questions on the posttest correctly. There was an 80% increase in the number of participants who stated they were extremely likely to use this treatment modality following the intervention. Based on these outcomes, education regarding long-acting injectable antipsychotics appears to be a reliable method to increase patient knowledge about alternative treatment options to improve medication adherence.

DISCUSSION

Summary

Medication adherence is a global health concern (Kvarnström et al., 2018). Due to nonadherence, there is a need for alternative methods of administering a medication that will

allow it to remain effective in the body longer than oral medication. Research has shown LAIAs can improve medication adherence, decrease relapse rates, reduce hospitalization stays, reduce healthcare costs, and improve positive symptoms (Baigi et al., 2017; Chiu et al., 2019). Social performance, functioning, and overall health status are also improved in patients who receive LAIAs (Chiu et al., 2019). Despite their ability to increase adherence and improve an individual's quality of life, they are underutilized in the clinical setting. The objective of this quality improvement project was to increase patient knowledge of LAIAs to increase their use in clinical practice in patients with psychotic disorders who report barriers to daily medication. The PDSA cycle was utilized to implement the QI project. The educational presentation increased patient knowledge and acceptance of LAIAs.

Implications

Practice and Education

Medications are the cornerstone treatment in patients diagnosed with a psychotic disorder. When patients are nonadherent to daily medication, there is a need to identify barriers, determine appropriate interventions, and develop treatment plans based on individual needs. Not all patients with a mental illness will require LAIAs to adhere to their medication regimens. However, when adherence becomes a concern, providers should be knowledgeable about alternative treatment options. Many patients are not aware of this treatment modality; however, the outcomes in this QI project support that after education is provided, individuals can be more willing to consider this treatment modality to manage psychotic disorders. This QI study aligns with research that reports when given the options LAIAs preferred this treatment option to oral medications (Brissos et al., 2014). According to current research, LAIAs are underutilized in

clinical practice, and as a result, providers cannot to see the benefits they offer through clinical experience. Research also suggests when used, LAIAs may decrease episodes of relapse and rehospitalization (Boyce et al., 2018; Grover et al., 2019; Pacchiarotti et al., 2019). Based on the benefits of LAIAs and their limited use in clinical settings, there is a great need to decrease stigma and to increase education and acceptance of this treatment modality.

Policy

Psychiatric mental health nurse practitioners (PMHNPs) are responsible for providing services to those with mental illness. They play a critical role in bringing attention to problems in the community and to promoting public health. Due to many patients with psychotic disorders not being adherent to daily medication regimens, there is a need for further education for patients and providers on the advantages of LAIAs to improve medication compliance in those experiencing barriers to oral medication. Plans should be made to increase patient education and involvement in developing treatment plans to combat this global health concern.

Research

Further research is needed to determine if educating patients on the importance of speaking with providers on alternative treatment modalities plays a significant role in the patient's willingness to use LAIAs to increase medication adherence. There is also an opportunity to expand future work to providers to determine if increased provider education will increase the use of LAIAs in patients experiencing oral medication barriers.

Limitations and Strengths

Due to the COVID-19, this project could not be completed at the preferred outpatient clinical site; instead, the project took place at the TLC virtual clinic at the University of Arizona.

As a result, standardized patients were utilized instead of actual patients with psychotic disorders. Standard patients are individuals who portray patient scenarios for health professional students. There also was limited diversity in the sample population, all participants were of the same ethnicity and age group.

The use of the TLC virtual clinic is also a significant strength of the project, allowing for 100% participation from the requested number of participants. All participants completed the pre- and posttest and reported a positive experience; they also stated they were better informed about LAIAs follow the presentation. This Zoom presentation was free; therefore, this method can be used as a cost-effective way to disseminate education.

DNP Essentials Addressed

Doctoral prepared advanced practiced nurses are expected to be knowledgeable of the DNP Essentials (Zaccagnini & White, 2014). Three DNP essentials were addressed in this QI project: *DNP Essential V: Health Care Policy for Advocacy in Health Care*; *DNP Essential VII: Clinical Prevention and Population Health for Improving the Nation's Health*; and, *DNP Essential VIII: Advanced Nursing Practice*.

DNP Essential V: Health Care Policy for Advocacy in Health Care

This QI project relates to *DNP Essential V* as it identified and aimed to address medication nonadherence as a significant problem in mental health. A primary responsibility for nurses and PMHNPs is to advocate for patients. The project's focus was to increase patient knowledge using scholarly articles in peer-reviewed journals on alternative treatment modalities that may reduce relapse and rehospitalization, thus improving their quality of life. There is a

need to develop educational opportunities for patients to help individuals make educated decisions regarded their care.

DNP Essential VII: Clinical Prevention and Population Health for Improving the Nation's Health

Secondly, *DNP Essential VII* is addressed in this project. Relapse and rehospitalization are devastating as well as a financial burden to individuals and the economy. This project identifies the need for increased patient education and encourages individuals to be actively involved in their treatment. Tailored treatment plans can decrease health care costs in patients with mental illness.

DNP Essential VIII: Advanced Nursing Practice

Lastly, *DNP Essential VIII* is addressed in this project. The transtheoretical model (TTM) developed by Prochaska and Diclemente (1983) was utilized by the project manager to facilitate change. The model describes five stages of change: precontemplation, contemplation, preparation, action, and maintenance (Prochaska & Diclemente, 1983). The project manager brought awareness to the advantages and disadvantages of LAIAs to assist with medication adherence, Next an educational presentation was given to discuss concerns regarding this treatment modality. Lastly, individuals were encouraged to speak with their provider regarding any problems and explore treatment options suitable for their lifestyle.

Conclusions

This DNP project brought awareness to an alternative treatment modality to the project participants. An extensive literature review determined the need to educate patients on LAIAs to eliminate barriers to daily medication routines. The education provided in this presentation was

based on reliable information found in articles in peer-reviewed journals. Following this education presentation, patients were equipped with the knowledge needed to effectively discuss LAIAs with mental health providers. Nonadherence with medication is a significant issue, and empowering patients to be active participants in their care leads to increased medication adherence. Once barriers to medication adherence are identified and addressed according to the patient's needs, psychotic disorders can be appropriately managed, thus improving patient quality of life.

Plan for Sustainability

As previously stated, this project was implemented in a virtual clinic at the University of Arizona. This project can be redesigned to be implemented in an outpatient clinic where the results would reflect actual patient responses and the resulting information could be used to determine if an educational intervention on LAIAs would increase their willingness to use this treatment modality.

Plan for Dissemination

The results of the project will be disseminated in an executive summary provided to the TLC administrative team.

Funding

There was no cost associated with this project. The primary investigator used Qualtrics and Zoom, which are free services to University of Arizona students.

APPENDIX A:

TELEHEALTH LEARNING CENTER SITE APPROVAL / THE UNIVERSITY OF ARIZONA INSTITUTIONAL REVIEW BOARD DETERMINATION LETTER

Telehealth Learning Center
1305 N Martin Ave Tucson, AZ 85721-0203
520-626-3808

September 24, 2020

University of Arizona Institutional Review Board
c/o Office of Human Subjects
1618 E Helen St Tucson, AZ 85721

Jerri Bracey, UA Doctor of Nursing Practice student, has permission of the Telehealth Learning Center to conduct a quality improvement project at our facility for her project, "Educating Patients on Long- acting Injectable Antipsychotics to Improve Medication Adherence".

Ms. Bracey will conduct a survey of health care patients at the Telehealth Learning Center (TLC). She will recruit patients utilizing an information flyer that will be dispersed to potential participants by the director of the TLC. The flyer will provide a description of the project, what they will be asked to do and the time involved. Ms. Bracey activities will be completed by October 23, 2020.

Ms. Bracey has agreed to provide to my office a copy of the University of Arizona Determination of Research document before she recruits participants. She will also present results and a complete report with associated recommendations to the Telehealth Learning Center's administrative team.

Regards,

Allen Prettyman

Allen Prettyman, PhD, FNP-BC, FAANP, FNAP
Clinical Professor
Director DNP Program
University of Arizona College of Nursing
apretty@email.arizona.edu

THE UNIVERSITY OF ARIZONA
Research, Discovery & Innovation

Human Subjects Protection Program

1618 E. Helen St.
P.O Box 245137
Tucson, AZ 85724-5137
Tel: (520) 626-6721
http://rgw.arizona.edu/compliance/home

Date:	October 02, 2020
Principal Investigator:	Jerri Latasha Bracey
Protocol Number:	2010098563
Protocol Title:	Educating Patients on Long Acting Injectable Antipsychotics to Improve Medication Adherence
Determination:	Human Subjects Review not Required

Documents Reviewed Concurrently:

HSPP Forms/Correspondence: *determination form.pdf*

Regulatory Determinations/Comments:

- Not Research as defined by 45 CFR 46.102(l): As presented, the activities described above do not meet the definition of research cited in the regulations issued by U.S. Department of Health and Human Services which state that "Research means a systematic investigation, including research development, testing, and evaluation, designed to develop or contribute to generalizable knowledge. Activities that meet this definition constitute research for purposes of this policy, whether or not they are conducted or supported under a program that is considered research for other purposes. For example, some demonstration and service programs may include research activities. For purposes of this part, the following activities are deemed not to be research."

The project listed above does not require oversight by the University of Arizona.

If the nature of the project changes, submit a new determination form to the Human Subjects Protection Program (HSPP) for reassessment. Changes include addition of research with children, specimen collection, participant observation, prospective collection of data when the study was previously retrospective in nature, and broadening the scope or nature of the study activity. Please contact the HSPP to consult on whether the proposed changes need further review.

The University of Arizona maintains a Federalwide Assurance with the Office for Human Research Protections (FWA #00004218).

APPENDIX B:

CONSENT DOCUMENT (DISCLOSURE FORM)

Educating Patients on the Risk and Benefits of Long-Acting Injectable Antipsychotics to Improve Medication Adherence

You are being asked to participate in a quality improvement project conducted by Jerri Bracey, a Doctor of Nursing Practice student, enrolled at the University of Arizona. Please read the disclosure form in its entirety to understand the potential risks and benefits of participating in this project.

The purpose of this quality improvement project is to educate patients with psychotic disorders on the advantages and disadvantages of utilizing long –acting injectable antipsychotics (LAIAs). The primary outcome for this project is to increase patient knowledge of LAIAs and to promote their use to manage psychotic disorders. You will be instructed not to make any changes to your current treatment plan without consulting with your provider. You will be encouraged to follow up with your mental health provider for questions about this treatment modality. This online activity will take approximately 50 minutes (10 minutes for pre-test, 30 minutes for the online Zoom session, and 10 minutes for the posttest survey).

If you chose to continue in this project consent is implied. Participation is voluntary, and you are able to discontinue participation at any time. Should you choose not to participate there will be no penalty. No compensation will be provided for participation.

There are no risks associated with participating in this quality improvement project. No adverse events are expected to occur.

For questions, concerns or complaints about this project you may contact the primary investigator:

Jerri Bracey, RN, BSN
DNP-PMHNP Student
Email: jbracey3@email.arizona.edu

APPENDIX C:

RECRUITMENT MATERIAL (RECRUITMENT FLYER)

PARTICIPANTS NEEDED

DNP Quality Improvement Project: Long-Acting Injectable Antipsychotics (LAIAs)

Location: University of Arizona Virtual Clinic

Date: October 15, 2020 at 1000 am

Who is eligible?

Are you interested in a bi-weekly or monthly medication treatment option?

If you are a standardized patient,18 years of age or older participants are needed in a quality improvement project to evaluate patient knowledge and barriers to using LAIAs.

Must have access to the internet to enroll.

What to expect?

Consent

Evaluation of current knowledge

(Pre-test)

Education Webinar

(30 minutes)

Now what do you think?

(Post-test)

FOR MORE INFORMATION:

Who should I contact to participate?

Jerri Bracey RN, BSN

jbracey@email.arizona.edu

APPENDIX D:

EVALUATION INSTRUMENTS (PRETEST SURVEY AND POSTTEST SURVEY)

Pre-test Survey

1. What is your age?
   a. 18- 24 years old
   b. 25-34 years old
   c. 35-44 years old
   d. 45-54 years old
   e. 55 years of age or older

2. What is your gender?
   a. Male
   b. Female

3. What is your highest level of education completed?
   a. Some high school
   b. High school graduate or GED
   c. Some college
   d. Associate degree
   e. Bachelor's degree
   f. Master's degree
   g. Doctorate degree

4. Are you currently employed?
   a. Employed
      i. Full-time
      ii. Part- time
   b. Self- employed
   c. Retired
   d. Unemployed
   e. Disabled

5. Are you currently prescribed oral medications to manage unwanted symptoms associated with your mental health diagnosis?
   a. Yes
   b. No

6. How often do you miss a dose of your prescribed antipsychotic medication during the week?
   a. I never miss a dose
   b. 1-2 times per week
   c. 3-5 times per week
   d. More than 5 times per week

7. What is a major barrier to not taking your oral medication daily?
    a. Financial
    b. I just forget sometimes
    c. Side effects
    d. Other
    e. None

8. Are you aware of an intramuscular medication that can be given monthly to manage psychotic symptoms?
    a. Yes
    b. No

9. Has your provider spoken to you about using long- acting injectable antipsychotics (LAIAs)?
    a. Yes
    b. Maybe, I don't remember
    c. No

10. Are you aware of any advantages associated with LAIAs?
    a. Yes
    b. No

11. Are you aware of any disadvantages associated with LAIAs?
    a. Yes
    b. No

12. How likely are you to use LAIAs?
    a. Extremely likely
    b. Moderately likely
    c. Neither likely nor unlikely
    d. Moderately unlikely
    e. Extremely unlikely

Posttest Survey

1. Medications are important to manage unwanted symptoms associated with your mental health diagnosis.
   a. True
   b. False

2. There is an intramuscular medication that can be given monthly to manage symptoms.
   a. True
   b. False

3. Long-acting injectables decrease the need for daily oral medication.
   a. True
   b. False

4. Would you consider speaking to your provider about using LAIAs to manage symptoms associated with your mental health diagnosis?
   a. Yes
   b. Maybe
   c. No

5. I believe LAIAs would:
   a. Improve my adherence with medication
   b. Decrease my adherence with medication
   c. Neither improve nor decrease my adherence with medication

6. How likely are you to use LAIAs?
   a. Extremely likely
   b. Moderately likely
   c. Neither likely nor unlikely
   d. Moderately unlikely
   e. Extremely unlikely

7. What did you like about the presentation?

8. What didn't you like about the presentation?

APPENDIX E:

PARTICIPANT MATERIAL (INSTRUCTIONAL POWERPOINT)

Medicine a Better Way

Long Acting Injectable Antipsychotics

PAGE 1

Course Outline

- Importance of Medication Adherence
- Long-acting injectable antipsychotics
- Patient Self-advocacy

PAGE 2

Participants will be able to:

- explain the importance of medication adherence
- explain the advantages and disadvantages of long-acting injectable antipsychotics
- list methods for self-advocacy

Course Objectives

PAGE 3

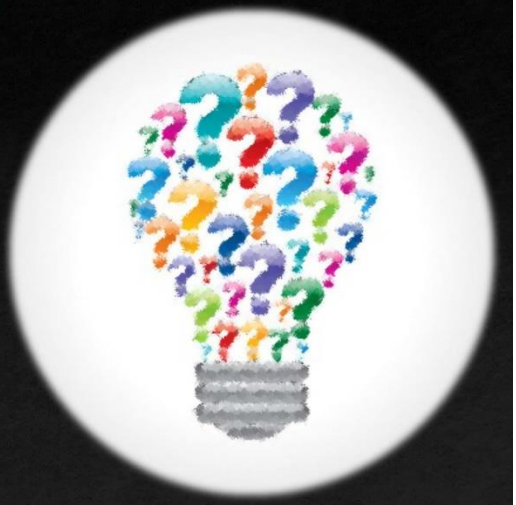
Importance of Medication Adherence

Medication adherence is consistently taking medication as prescribed.

*Did you know that 40-50% of patients diagnosed with schizophrenia are **not** compliant with their routine medication regimens?*

Importance of Medication Adherence

What do you think are some of the reasons people do not take their medication properly?



Medication Adherence | LAIAs | Self-advocacy | Conclusion | PAGE 5

Importance of Medication Adherence

What do you think are some of the reasons people do not take their medication properly?

- →Money
- →Substance abuse
- →Lack of support
- →Distrust of medication/health professionals
- →Lack of education
- →Lack of access to healthcare services

Medication Adherence | LAIAs | Self-advocacy | Conclusion | PAGE 6

Importance of Medication Adherence

What happens when medication is not taken properly?

→Hospitalization/ rehospitalization

→Deterioration

→Decreased quality of life

→Increased risk of death

Knowledge Check

- What are some reasons that people do not adhere to medication adherence?
- Why is medication adherence important?

LONG-ACTING INJECTABLE ANTIPSYCHOTICS

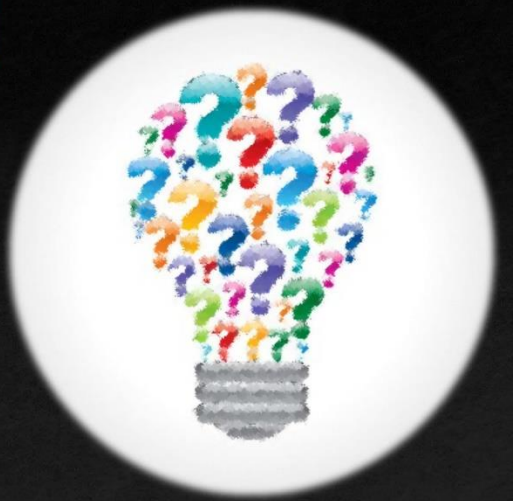
Long-acting injectable antipsychotic drugs are:

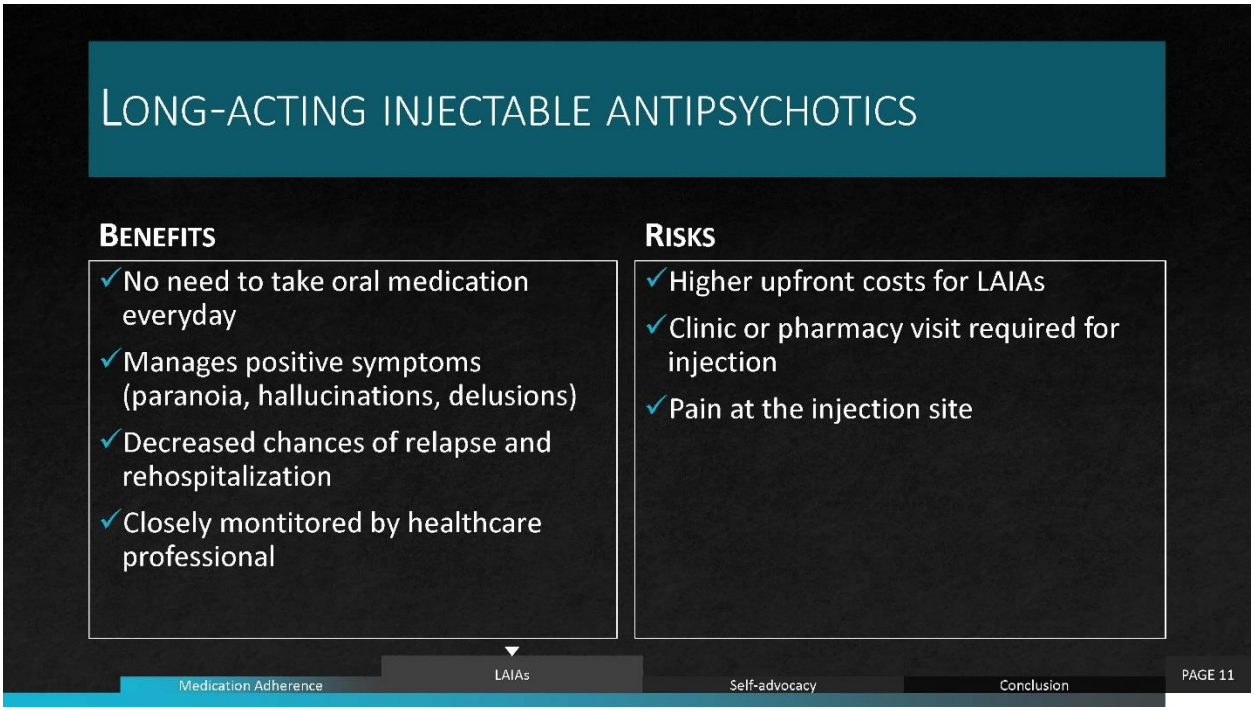
→ Intramuscular medication

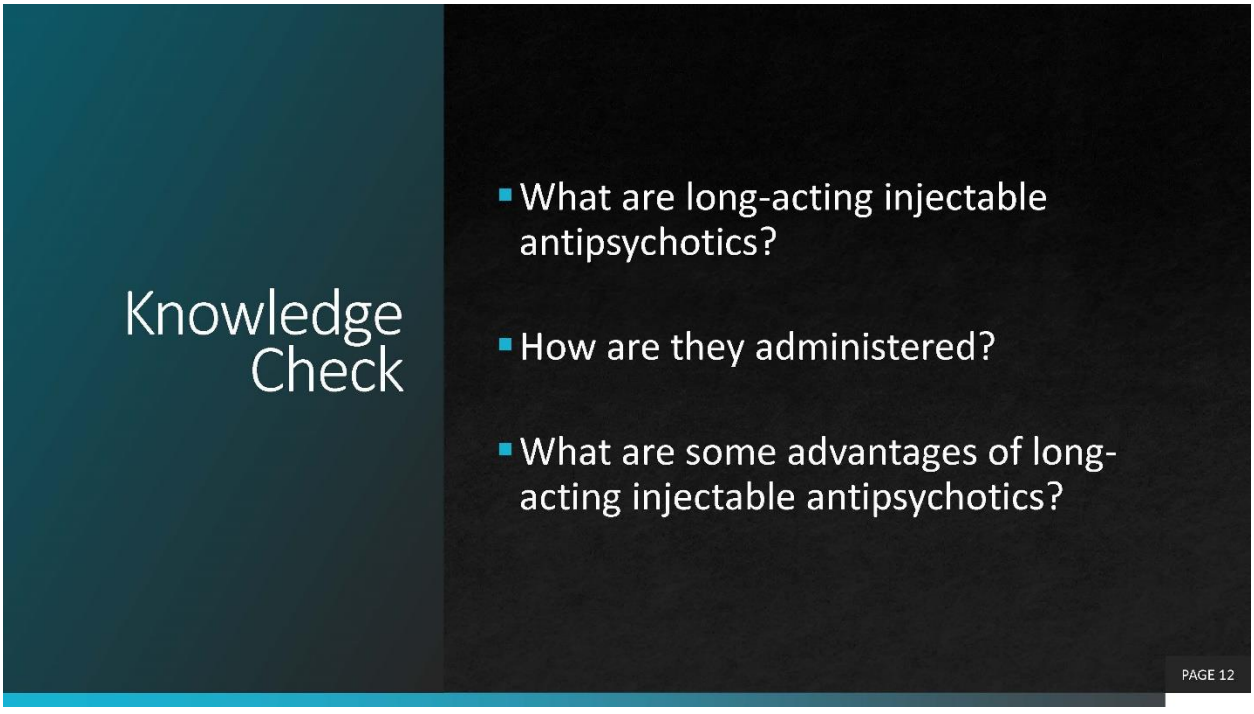
→ Adminstered monthly by a trained medical professional

LONG-ACTING INJECTABLE ANTIPSYCHOTICS

What do you think are some of the advantages of using long-acting injectable antipsychotics?




LONG-ACTING INJECTABLE ANTIPSYCHOTICS
BENEFITS
✓No need to take oral medication everyday
✓Manages positive symptoms (paranoia, hallucinations, delusions)
✓Decreased chances of relapse and rehospitalization
✓Closely montitored by healthcare professional
RISKS
✓Higher upfront costs for LAIAs
✓Clinic or pharmacy visit required for injection
✓Pain at the injection site
Medication Adherence
LAIAs
Self-advocacy
Conclusion
PAGE 11

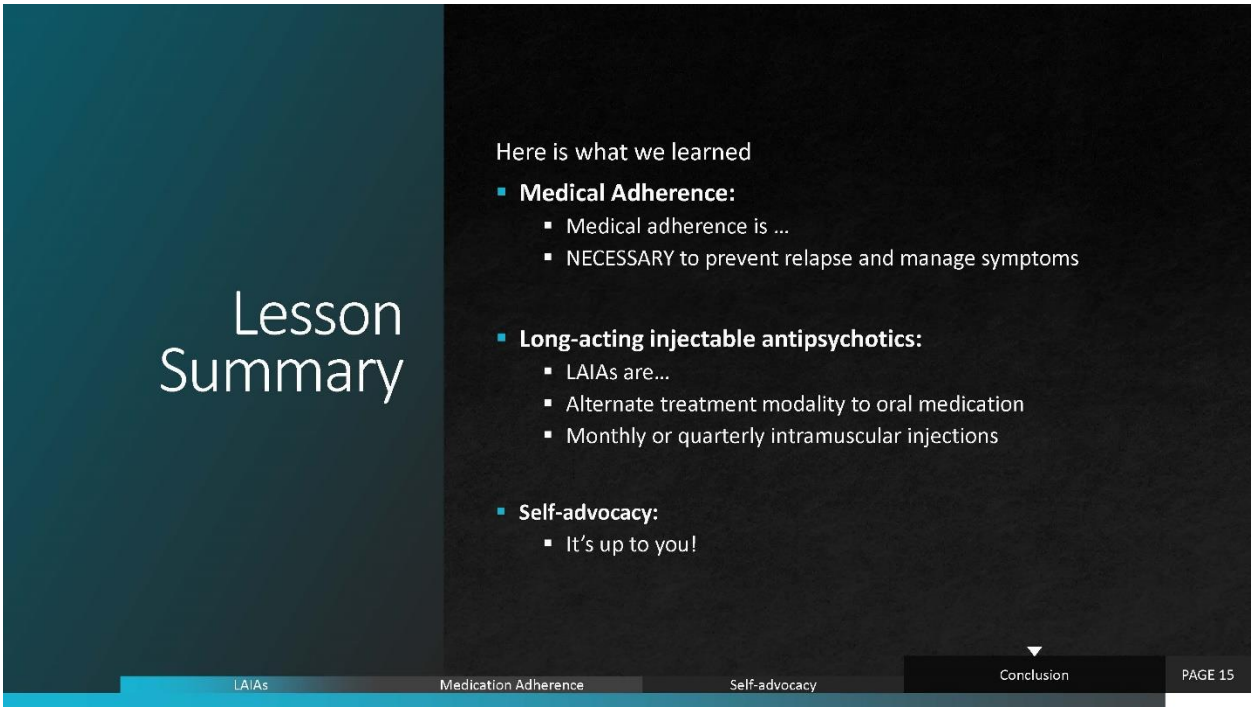

Knowledge Check
What are long-acting injectable antipsychotics?
How are they administered?
What are some advantages of long-acting injectable antipsychotics?
PAGE 12

Self-Advocacy

- Open conversations with providers about all treatment options
- Do your own research
- Ask questions
- Be involved in your treatment plan

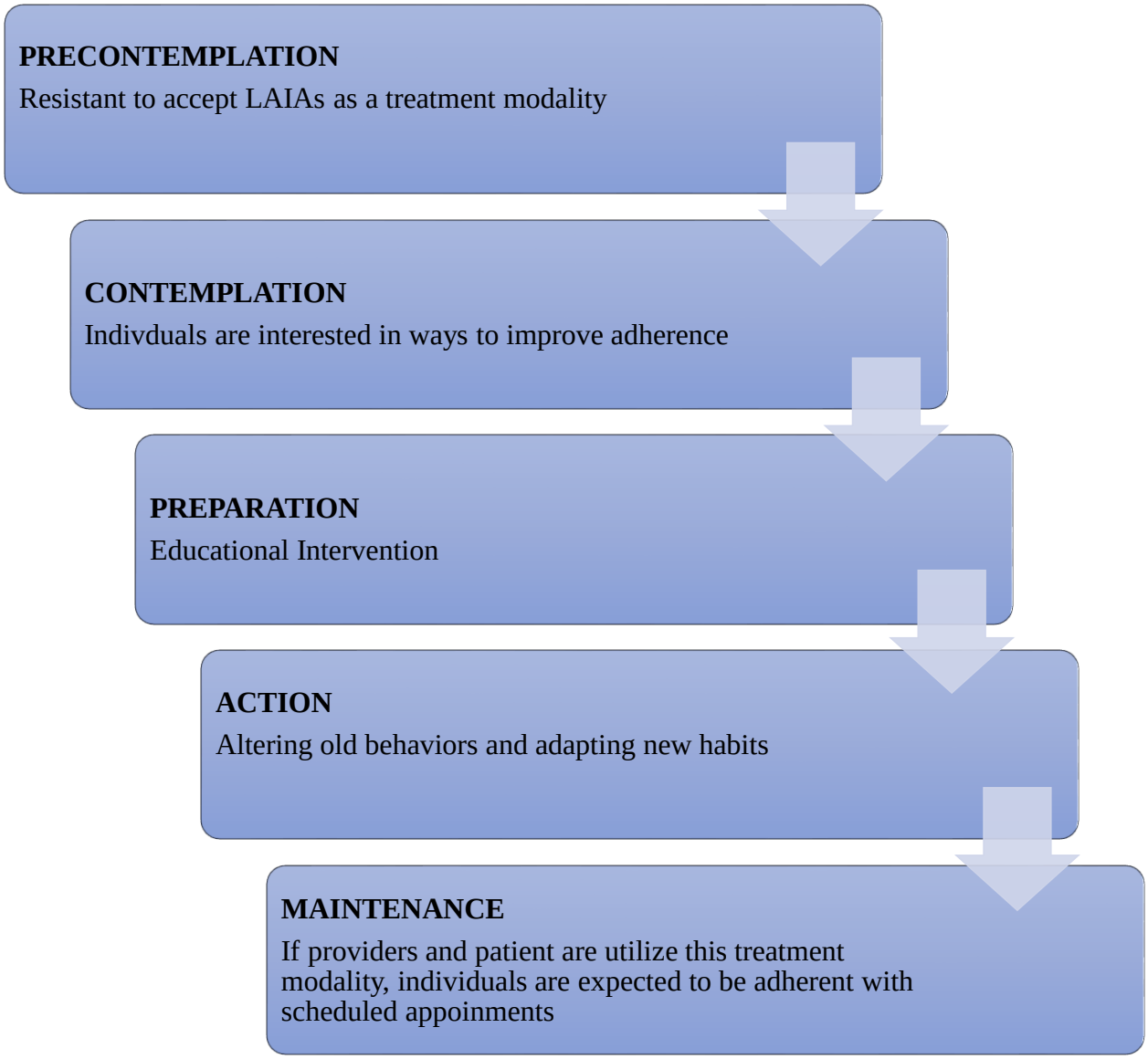
Knowledge Check

- How can you advocate for long-acting injectable antipsychotics?


Lesson Summary
Here is what we learned
Medical Adherence:
Medical adherence is …
NECESSARY to prevent relapse and manage symptoms
Long-acting injectable antipsychotics:
LAIAs are…
Alternate treatment modality to oral medication
Monthly or quarterly intramuscular injections
Self-advocacy:
It's up to you!
LAIAs
Medication Adherence
Self-advocacy
Conclusion
PAGE 15

APPENDIX F:

TRANSTHEORETICAL FRAMEWORK


PRECONTEMPLATION
Resistant to accept LAIAs as a treatment modality
CONTEMPLATION
Indivduals are interested in ways to improve adherence
PREPARATION
Educational Intervention
ACTION
Altering old behaviors and adapting new habits
MAINTENANCE
If providers and patient are utilize this treatment modality, individuals are expected to be adherent with scheduled appoinments

APPENDIX G:

PROJECT TIMELINE

Completion Date	Planning	Pre-Implementation	Implementation	Evaluation
June 15, 2020	Speak with chair to about details of the virtual clinic			
July 1, 2020	Develop educational session			
September 16, 2020		DNP proposal defense		
September 30, 2020		Application submitted to IRB for approval		
October 2, 2020		IRB approval		
October 15, 2020			Conduct education sessions	Pretest and posttest
October 17, 2020				Analyze data

APPENDIX H:

LITERATURE REVIEW GRID

Pub. Year; Author's Last Name	Title of Publication	Type of Study	Main Outcomes of Findings	Support for and or Link to Project
2020; Abdel-Baki, Medrano, Maranda, Ladouceur, Tahir, Stip, & Potvin	Impact of early use of long-acting injectable antipsychotics on psychotic relapses and hospitalizations in first-episode psychosis	A three- year, prospective, longitudinal, naturalistic study	Patient who have poor prognosis experience few relapses and rehospitalizations if LAIAs are prescribed first	It is ok to use LAIAs as the first treatment modality in patients who report barriers to daily medication
2019; Aggarwal, Schrimpf, & Lauriello	Aripiprazole long-acting injectable for maintenance treatment of bipolar 1 disorder in adults	Double-blind, placebo-controlled, randomized withdrawal study	Pharmacotherapy essential for maintenance treatment Improved medication has the potential to decrease relapse and improve daily function	Early identification and treatment of bipolar can be helpful in preventing relapse
2017; Baigi, Capuzzi, Colmegna, Mascarini, Brambilla, Ornaghi, Santambrogio, & Clerici	Long-acting injectable antipsychotics in schizophrenia: literature review and practical perspective, with a focus on aripiprazole once-monthly	Critical Review	LAIs offer advantages over oral medications and there is good evidence for their use as a first-choice treatment	Providers tend to use LAIAs when oral therapy fails, however evidence shows it can be used as a first line therapy
2018; Boyce, Irwin, Morris, Hamilton, Mulder, Malhi, & Porter	Long-acting injectable antipsychotics as maintenance treatments for	Review of randomized control trials	LAIs are a good treatment option for individuals who are nonadherent to	LAIs are a valid treatment option to manage bipolar disorder however they should be used conservatively until further evidence emerges

Pub. Year; Author's Last Name	Title of Publication	Type of Study	Main Outcomes of Findings	Support for and or Link to Project
	bipolar disorder - a critical review of the evidence		medications and who are unstable	Medication is the mainstay treatment for psychosis. Adherence remains a significant problem.
2016; Chan, Huang, Feng, & Chieh	Clinical outcomes of long- acting injectable risperidone in patients with bipolar 1 disorder: a 1-year retrospective cohort study	Retrospective cohort study	After a 1-year follow-up, re-hospitalization rates were significantly lower in the LAI1 group than that before enrollment for any episodes	Risperidone LAIs reduces severity of bipolar 1, and has the ability to reduce readmission rates
2016; Chien, Mui, Gray, & Cheung	Adherence therapy versus routine psychiatric care for people with schizophrenia spectrum disorders: a randomized controlled trial	Randomized control trial	Adherence therapy group improved insight, functioning, length of rehospitalization and medication adherence	Poor insight closely associated with poor clinical outcomes Important to provide proper education to increase adherence
2017; Greene, Yan, Chang, Hartry, Touya, & Broder	Medication adherence and discontinuation of long-acting injectable versus oral antipsychotics in patients with schizophrenia or bipolar disorder	Randomized control trial	Individuals with schizophrenia who began receiving LAIs had better medication adherence during the 1-year post-index period and were 20% less likely to discontinue their medication during the entire follow-up period (Abstract)	Medication are needed to manage symptoms, better medication adherence and less likely to discontinue medication

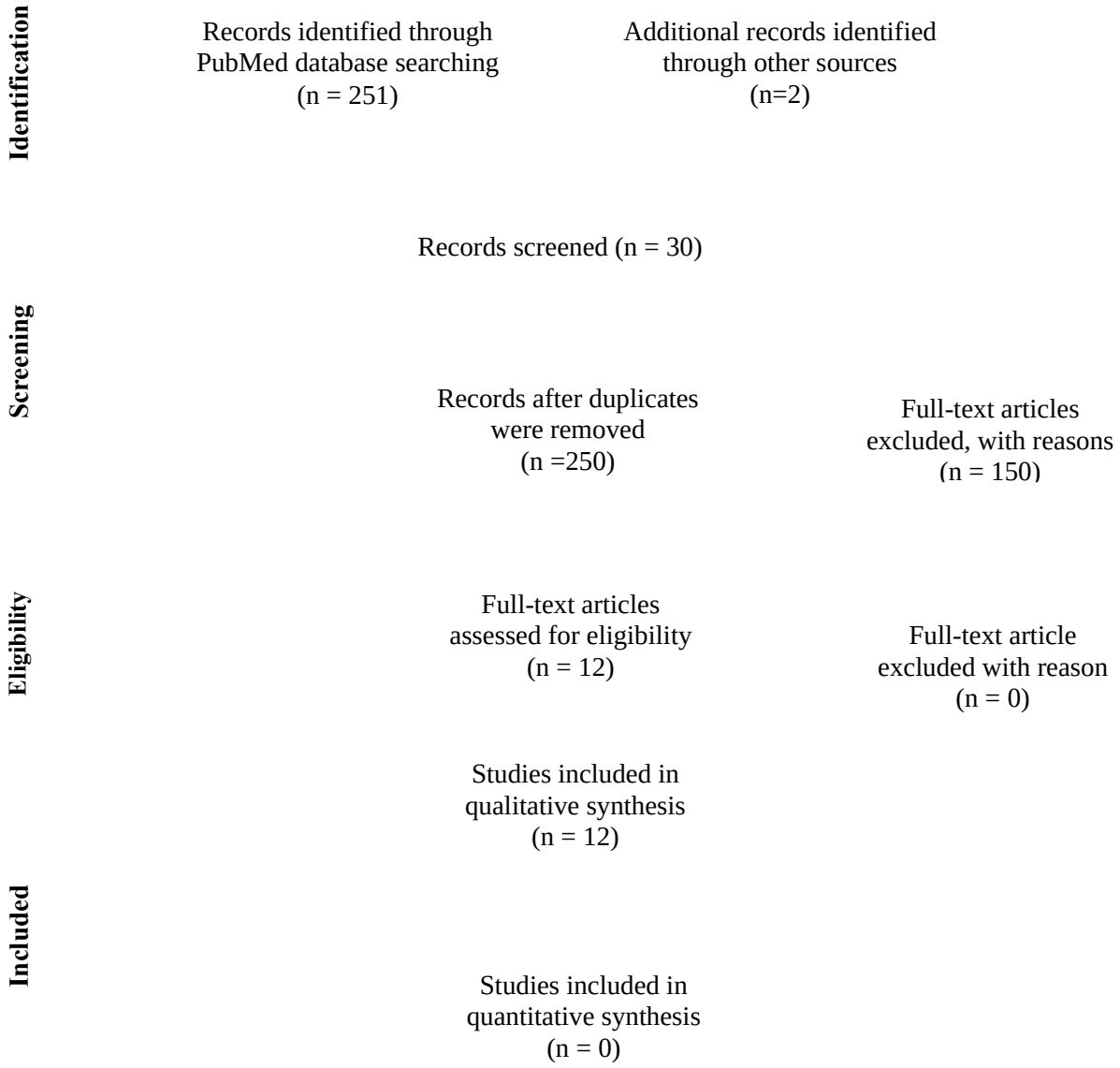
Pub. Year; Author's Last Name	Title of Publication	Type of Study	Main Outcomes of Findings	Support for and or Link to Project
2019; Grover, Sahoo, Bn, Malhotram, Dua, & Avasthi	Attitude and perceptions of patients towards long acting depot injections (LAIs)	Self-designed semi-structured questionnaire Qualitative study	More than three-fourth (78.8%) of the participants in the whole study for oral medication as their first choice of therapy and only 5% were interested in injectables. After being explained about LAIs, one fourth of the participants (24.9%) reported that they may consider injectables	LAIs underused, patient are uninformed and when educated the level of acceptance is increased Providers will know if patients are compliant Reason for not wanting injectable is pain at site
2015; Marcus, Zummo, Pettit, Stoddard, & Doshi	Antipsychotic adherence and rehospitalization in schizophrenia patients receiving oral versus long-acting injectable antipsychotic following hospital discharge	Observational Study used a Retrospective Cohort design/ Claims -Based Study	LAI initiators had lower odds of being nonadherent and of having continuous 60-day gaps when compared with patients receiving oral medications. Both FGA and SGA LAI users had lower odds of nonadherence compared with patients receiving oral antipsychotics	LAIAs less demanding way to treat patient who have barriers to daily medication
2019; Pacchiarotti, Tiihonen,	Long- acting injectable antipsychotics (LAIs) for maintenance treatment of bipolar and schizoaffective disorders: a systematic review	Systematic review	LAIAs work to manage maniac symptoms and recurrences in bipolar and schizoaffective aripiprazole monohydrate significantly delayed time to recurrence of manic episodes without causing	AOM medication well studied

Pub. Year; Author's Last Name	Title of Publication	Type of Study	Main Outcomes of Findings	Support for and or Link to Project
			depressive episodes (abstract)	
2015; Stevens, Dawson, & Zummo	Clinical benefits and impact of early use of long-acting injectable antipsychotics for schizophrenia	Comprehensive literature review	Poor adherence primary cause of relapse Early initiation of treatment Economic benefits of early treatment	Early intervention and use of LAIAs beneficial
2017; Yeo, Park, Jang, Jang, Kang, Cui, Kim, Jung & Chung	Acceptance rate of long-acting injection after short information: a survey in patients with first and multiple episode psychoses and their caregivers	Cross-sectional survey	The study included 161 patients and 113 caregivers. The study concluded that a large number of patients with first- and multiple-episode psychoses and their caregivers prefer LAI over their current oral medication	Medication nonadherence is a major problem Nonadherence = hospitalization

APPENDIX I:

OTHER DOCUMENTS AS APPLICABLE TO THE PROJECT (LITERATURE SYNTHESIS FLOW DIAGRAM)

PRISMA 2009 Flow Diagram



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