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# Importance of Early Recognition of Extrapyramidal Symptoms (EPS) in a Community Mental Health Clinic

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College of Nursing

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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Abstract

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MSN-Ed, APRN-BC, Walden University, 2021

Project Submitted in Partial Fulfillment

of the Requirements for the Degree of

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## Abstract

The purpose of this project was to address the lack of knowledge of nurses in recognizing extrapyramidal symptoms during the early stages of clinical presentation in patients taking antipsychotic medication. Nursing staff need to be properly training to be effective. Maslow's hierarchy of human needs informed this project. The primary goal of this project was to identify if an instructional seminar regarding EPS symptoms and management would increase the knowledge of the nursing staff. The project had a sample size of 7 and the criteria for inclusion included licensed professional nurses working in the clinical setting of mental health. The 12 pre and posttest questions identified the change in knowledge and whether the project goal was met. The average pretest score was 57.14, while the average posttest score was 86.42. Using percentage comparisons, the results demonstrated a 29.28 percentage overall increase in knowledge and demonstrated the educational initiative was successful in improving nurse's knowledge relative to early recognition of EPS symptoms. The following recommendations were provided to the organization to improve the nurses experience with care of patients taking antipsychotic medications. It is important to train nurses on monitoring for frequent onset of EPS and for strategies to manage the impact of antipsychotic medications. It is also important to include content regarding discontinuation of causative agents for EPS and the essential responsibilities and roles of offering therapeutic services for their patients. The project has the potential to impact positive social change by supporting the value of additional personnel training to mitigate the side effects of these antipsychotics.

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Dedication


In Loving Memory of Raven Cox

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Section 1: Nature of the Project

## Introduction

The improvement of nursing staff evidence-based practice training underpins the ongoing focus to improve patient-centred safety and care (Salmond & Echevarria, 2017). The need for early recognition of extrapyramidal symptoms (EPS) in a community mental health clinic setting is an example of where this kind of improvement is a critical factor to assuring best practices and aligns to the nature of this Doctor of Nursing Practice (DNP) project. Implications of this DNP project potential for social change directly suggested greater improvement on patient-centered care and safety with early and correct recognition-diagnosis of EPS and the needed intervention.

EPS are common health issues associated with severe drug use among patients consuming dopamine-receptor blocking agents (D'Souza & Hooten, 2020). EPS is primarily a chronic drug-induced disorder that can be controlled and managed effectively (D'Souza & Hooten, 2020).

It was in 1952 that EPS was first discovered in patients who demonstrated symptoms similar to Parkinson's disease. However, it was then associated with the use of chlorpromazine. Consequently, EPS was characterized as a chlorpromazine-induced side-effect. In the past five decades, a range of movement phenotypes has been found in patients with antipsychotic use (D'Souza & Hooten, 2020). Some of the common side-effects or movement phenotypes include akathisia, dystonia, and parkinsonism (D'Souza & Hooten, 2020). In most patients with antipsychotic-medication-induced EPS, akathisia and dystonia are acutely observed (D'Souza & Hooten, 2020). Some chronic side-effects

or EPS include tardive dyskinesia or tardive akathisia. The symptoms of EPS often have a negative impact on the quality of life of patients (D'Souza & Hooten, 2020). EPS is associated with the disruption in communication and social functioning (D'Souza & Hooten, 2020).

Some patients may suffer from dysfunction in motor tasks that interfere with their activities of daily living (D'Souza & Hooten, 2020). Patients with EPS may suffer from poor quality of life and often discontinue antipsychotic treatment (D'Souza & Hooten, 2020). Patients who discontinue treatment may suffer from disease relapse and may require frequent rehospitalization (D'Souza & Hooten, 2020). Schizophrenic patients who discontinue antipsychotic treatment may suffer from a range of side effects and require frequent rehospitalization (D'Souza & Hooten, 2020).

According to the current literature, the first-generation antipsychotics are associated with severe adverse effects (Wubeshet et al., 2019). The dopamine-receptor blocking agents that centrally act on the body often cause EPS in patients (D'Souza & Hooten, 2020). Some of the common antipsychotics that cause EPS include phenothiazine neuroleptics and haloperidol (D'Souza & Hooten, 2020). Although EPS is not a common side-effect of atypical antipsychotics, dose escalation of common first-generation antipsychotics is associated with EPS and a debilitating quality of life. Some of the other antipsychotic agents that cause EPS include droperidol, metoclopramide, and prochlorperazine) (D'Souza & Hooten, 2020). Chronic use of antiemetics often causes EPS in some patients. Lithium (antiemetics) has been associated with EPS in schizophrenic patients. In a review conducted in 2010, EPS was noted in patients who

received serotonin reuptake inhibitors (SSRIs) for the treatment of depression and anxiety (D'Souza & Hooten, 2020). The use of psychostimulants has been associated with movement disorders (D'Souza & Hooten, 2020). Acute and chronic movement disorders associated with EPS in patients who were prescribed with psychostimulants were also reported (Asser & Taba, 2015).

The use of tricyclic antidepressants (TCAs) for patients with depression and anxiety has been associated with movement disorders and EPS. However, a few researchers have also reported EPS in patients who use valproic acid, antiarrhythmics, and antivirals. Thus, apart from antipsychotic medications, there are other medications that can cause EPS in patients (D'Souza & Hooten, 2020). This project focused on primarily identifying the importance of an education training for staff nurses working in mental health settings to assist with bridging the gap regarding EPS and early detection. The objective was to reduced, prevented, controlled, and managed EPS in patients with the use of antipsychotics.

The rate and severity of EPS are dependent on the dose, time, and class of medication prescribed to patients with mental health issues. As per current evidence, the first-generation antipsychotics or neuroleptics have been associated with 61.6% of EPS in patients with schizophrenia. The use of clozapine has the lowest risk of EPS, while the use of risperidone has been associated with high-risk EPS. Thus, the type and dosage of antipsychotic medication are associated with the extent of EPS in patients with mental health issues. The EPS incidence range between 4% to 25% in patients who are administered with dopamine D2 receptor antagonists. The most common dopamine D2

receptor antagonist – metoclopramide - is associated with a high risk of EPS (up to 25%). The use of prochlorperazine is associated with 25% to 67% risk of EPS in patients with depression, anxiety, and other mental health issues. However, the risk of EPS is associated with the dose (high in most cases) and the medical history of the patient (D'Souza & Hooten, 2020). Elderly females are at a higher risk of suffering from drug-induced tardive dyskinesia and parkinsonism as compared to males (Salem et al., 2017). Researchers have also claimed that young males may suffer from dystonic reactions after chronic use of antipsychotic medications (D'Souza & Hooten, 2020).

## Problem Statement

The problem is that in the professional field of nursing aligned to the community mental health clinic and patient-centered safety inadequate training frames around the importance of early recognition of EPS leading to correct diagnosis (Cooper et al., 2016). Too often patients suffering with EPS lack efficacy in compliance in adhering to their medication because of the physical discomfort. Better training for the nursing professional in identifying EPS—especially the early onset stages is critical to the focus of nursing patient-centered safety and care (Balogh et al., 2015).

The nursing professional in a mental health clinic as a frontline caregiver, must monitor for symptoms of EPS so the importance of adequate education connects to the safety and care of patient centered focus (D'Souza & Hooten, 2020). Musco et al. (2019) concluded, the need of expanding nursing professionals as part of the healthcare team knowledge linked individual symptomatic characteristics connected with the risk of developing different subtypes of EPSs enhances the opportunity for anticipating and

attempting the mitigation of such reactions. Thus, the chances of improving patient adherence to dopamine receptor blocking agent therapy increases (Musco et al., 2019). Such literature emphasizes the gap in sufficient nursing training addressing this issue of nurses' needed knowledge of EPS symptoms as part of the teamwork in healthcare (Rosen et al., 2018).

About 50% of patients taking antipsychotics will experience or develop some form of the extrapyramidal symptom. These symptoms are primarily acute, that can lead to chronic symptoms if left untreated (Barlow et al., 2017). Symptoms ofeEarly recognition of EPS can be severe enough to affect one's activities of daily living by making it hard to communicate, ambulate, and carry out tasks at school, work, or home. Extrapyramidal symptoms also known as extrapyramidal side effects (EPSE) if drug-induced, are movement disorders, which include acute and long-term symptoms. Since it is difficult to measure extrapyramidal symptoms, rating scales are commonly used to assess the severity of movement disorders (D'Souza & Hooten, 2020). Almost 60 % of patients prescribed antipsychotics does not adhere to the treatment regimen (Yeisen et al., 2017). In a lot of clinical settings, screening for extrapyramidal symptoms is done by using the Abnormal Involuntary Movement Scale (AIMS) (Caroff, 2019). For many years, psychiatrists and other mental health professionals working in mental health centers have had great challenges establishing the scope of practice, which defines the limits of their roles, delegating responsibility, and sharing professional liability (Cook & Mueser, 2015). The clinical, political, and administrative aspects of these tensions are examined in the context of arguments for and against physicians' delegating to other

mental health professionals the task of screening patients for EPS and tardive dyskinesia using the AIMS.

Medication adherence in mental health is one of the greatest challenges in clinical practice (Dikec, 2015). Nonadherence to prescribed antipsychotic medications places individuals suffering from serious mental illness (SMI) at an increased risk of symptom exacerbation and rehospitalization. One of the major risk factors for nonadherence is the occurrence of side effects of antipsychotics. Recognition of this factor is the initial step toward designing effective interventions. Antipsychotic medication reduces the severity of SMI and improves patient outcomes only when medicines are taken as prescribed (Lake et al., 2017). However, individuals suffering from an SMI may not adhere to the treatment regimen of the clinician because of side effects. Adherence to antipsychotics is critical for optimal outcomes in individuals suffering from an SMI. Interruption of treatment, as short as the first ten days, has been associated with an increased risk of hospitalization in individuals diagnosed with SMI (Velligan et al., 2017).

Healthcare is known as the most trusted professions in the world. Historical concepts and current challenges of patient safety and science and quality care have been studied. Quality is examined by using surveys or tools relative to quality. What is true quality, and how does it apply to mental health and the treatment of patients being treated with antipsychotics? The AIMS is utilized to promote quality by reducing the debilitating side effects of antipsychotics that often cause patients not to take their medication (Huhn et al., 2020).

## Purpose of the Doctoral Project

### Meaningful Gap-in-Practice

This doctoral project addressed the meaningful gap-in-practice of nursing typically lacking the needed training and the accompanying knowledge for early recognition of the characteristics of extrapyramidal symptoms. The rationalization of the potential of this project significantly 2020) commitment about nursing professionals in all sectors advancing their education. This project was about bridged the gap of nurses' knowledge of identifying early detection of EPS in the mental health setting. The anticiDEepated findings of this project established the needed precedence for establishing mental health clinic nurses' EPS training at the academic and competencies levels as addressed by the American Association of Colleges of Nursing (AACN) (2020).

Therefore, the expected outcomes of this DNP project framed around the AACN (nursing education and training relative to early identification of EPS characteristics focused on improving intervention outcomes in preventing patient physical symptoms and promoting their compliance with treatment.

### Guiding Practice-Focused Questions

The practice-focused question for nursing mental health clinic staff education was: Will a staff education seminar on AIMS Testing increase staff knowledge on the assessment for symptoms of EPS.

### Desired Change from Gaining Such Knowledge

The desired change from gaining such knowledge in answering the guiding practice-focused question of this DNP project was centered on closing the existing gap in

nursing professionals in a mental health clinic setting about EPS. This means showing how the training site as described in the above practice-focused question need to develop and apply educational programs to close the gap of nursing knowledge relative to mental illness intervention treatment and disease-symptom management. However, this looks at focusing more on gaining knowledge about early identification of both antipsychotics side effects and EPS in the mental health clinic setting.

**Educating Nurses**

Within the desired outcomes of nurses gaining training for recognizing the characteristics of EPS in the mental health clinic setting, the education of nurses use of the movement scale provides the opportunity for reducing long-term side effects of their use of antipsychotic use as detailed by Caroff (2019). As explained by Caroff (2019) the heterogeneous syndrome known as tardive dyskinesia (TD) is involuntary hyperkinetic movements experienced by patients that can prove persistent as well as occur late in treatment using antipsychotics.

Relative to outcomes of recent randomized controlled trials approval of two dopamine-depleting analogs of tetrabenazine for the first time, now offers an evidence based therapeutic approach to treating TD. Within the context of a comprehensive approach to patient management, use of these optional agents includes both a practical screening and monitoring program (Caroff, 2019). In addition, this is about specific sensitive-based criteria for the diagnosis of TD along with knowing the impact as well as severity of the disorder by the patient (Caroff, 2019).

## Nature of the Doctoral Project

The problem the nature of this doctoral project addressed the lack of or incomplete education of nurses at the academic level in understanding the side effects of mental health patients on intervention treatments using antipsychotics as well as recognizing or understanding EPS. Garzonis et al. 2015) completion of a systematic literature review on the importance of modern healthcare training immediately connects to patient-centered care and safety. In the context of this DNP, pragmatically this framed the problem the proposed project here addressed.

In the field of nursing psychiatry, the variety of methods applied to academic training focus on imparting the skills relevant to practicing psychological care (Garzonis et al., 2015). Yet, Garzonis et al (2015) determined the rarity of patient outcomes used as a logical aspect of evaluation of the overt effectiveness of these different training methods thus resulting in difficulty assessing their true utility. In the systematic review of the literature on nursing student psychiatric training methods Garzonis et al (2015) considered how this effectively influenced both the nursing student and subsequently the patient.

The findings of the Garzonis et al (2015) conclusions found typically web-based, individual, and group training occurred as well as determining the training of various health professionals included skills focusing on referral, diagnosis, and communication. The subjective analysis of their findings (Garzonia et al., 2015) looked at the gap in the specificity of the kind of training especially in diagnostic that relates to this DNP project focus.

**Implications of the Potential Positive Change**

Implications of the potential positive change of this doctorate project outcome specific to the nursing education training and relative to identifying EPS or early recognition of EPS considers the logic of how essential training in this psychiatric nursing field would enhance patient care and safety (Rosen et al., 2018). The graduate work of one DNP focusing on the analysis of the sampling of participating psychiatric nurses' perspective about the value of specific knowledge reveal the findings provide positive implications (Sedlacek, 2017). The analysis affirms the positive difference in nursing knowledge and improved patient-centered care and safety (Sedlacek, 2017). To this end, no matter the nursing field, or the application of the diagnostic process to any symptom, Harrington et al. (2015) stated that it is a team effort for the best patient-centered care and safety.

The project was implemented in an outpatient mental health clinic where the DNP student currently practices and precepts. The facility serves individuals across the lifespan suffering from mental health disorders such as bipolar disorder, schizophrenia, and psychotic disorders. The DNP scholar treated approximately hundreds of patients currently. Within the setting, lack of practitioner knowledge on these issues adversely influences the adherence to therapy leading to poor outcomes. The goal of this project was to educate the nursing staff on identifying early recognition of EPS. (Huhn et al., 2020). The administrators and nurse leaders at the facilities was consulted throughout the process. The outcome was carefully examined based on the change of nurse's knowledge of identifying signs and symptoms of EPS relative to antipsychotics to address

nonadherence and relapse of symptoms by providing information to providers to intervene immediately to address symptoms in turn leading to better outcomes.

## Significance

Antipsychotics have been known for years as the most prescribed psychotropic medication for people with many different disorders and disabilities. Most people are prescribed antipsychotics to help with challenging behaviors without having a formal diagnosis of a psychiatric disorder or issue. Antipsychotics have been reported to have severe side-effect profiles, which in some cases hamper a person or patient's quality of life (Sadock et al., 2015). Previous studies and findings have either examined key factors associated with psychotropic medication. Based on the literature some clinical and demographic variables associated with antipsychotic use in other subpopulations (Prinstein et al., 2019). The next section will discuss the AIMS.

Mental illness, also known as a mental health disorder, refers to a wide range of mental health conditions which affects one's mood, thinking, and behavior. Examples of mental illness include depression, anxiety disorders, psychotic disorders, eating disorders, and addiction. Although mental illness has been overlooked for many years, there are metrics that assist clinicians with providing quality care (American Psychiatric Association, 2015).

The AIMS is a rating scale designed by the Psychopharmacology Research Branch of the National Institute of Mental Health in the 1970s. Initially, the AIMS was recommended to in-patients using substances that may cause tardive dyskinesia (TD). TD is a side effect that sometimes occurs from long-term treatment with neuroleptic

medications. The aims are administered prior to the administration of pharmacotherapy to examine for any movements present and every three months thereafter, the course of treatment. The AIMS is a global rating tool that observes involuntary movements of a patient prior to initiating treatment and also as a safety and quality measure during chronic treatment (Sadock et al., 2015). However, the judgment of symptoms may vary depending upon experience and cultural differences.

The interpretation of the AIMS indicates 0-1 is considered low risk, 2, in only one of the areas equates to borderline and should be monitored closely, whereas 2 in two or more areas examined or 3 to 4 in only one area is indicative of tardive dyskinesia (TD). The other option is to discuss alternative options of psychotropic use that may have a lower affinity than other antipsychotics. Each area can easily affect one's ability to function normally; the oral and facial movements can cause severe discomfort and impairment with consuming meals which also can cause increase risk for aspiration (Sadock et al., 2015).

The extremity movements can cause issues with being able to work if one is a writer, and the trunk movements can also impair one's ability to ambulate without increasing their risks for falls. One can suffer from worsening dentation and global judgments as the symptoms can cause no distress to be severely distressed. Although this is essential to prescribers, not all facilities mandate the documentation to be complete accordingly. However, with the incapacitating symptoms, it should be highly recommended in each health care setting to promote quality care, eliminating such discomfort and safety for our patients (Sadock et al., 2015).

## Summary

The prevalence of EPS manifests as parkinsonism, dystonia, and akathisia in a patient with antipsychotic use. This project investigates the issue in a bid to reduce, control, prevent, and manage EPS among these patients. Half of the patients who take antipsychotic drugs end up with some form of EPS. Such symptoms could become acute and affect a person's daily life. Practitioners in the current place of work lack the knowledge required to manage EPS. This project will target seven nurses and will investigate their knowledge of identifying the signs of EPS. Patient safety and clinical quality are the main drivers of this investigation. The knowledge of healthcare professionals is a major criterion for determining the aforementioned factors.

Section 2: Background and Context

## Introduction

The prevalence of mental disorders has increased in the past decade. Many people who suffer from mental health issues or those who meet the diagnostic criteria for mental health issues often are unable to access adequate treatment. Although there has been a significant demand for evidence-based psychological treatments (EBPTs), access to these treatments has decreased in the past few years (Harvey & Gumport, 2015). Nurses and allied healthcare professionals are trained to adapt to new, effective, and efficient treatment strategies. In a recent update, the use of AIMS has gained significant demand among nursing and psychiatric care professionals. We focused on educating and training nurses on AIMS testing to assess their knowledge expansion and skill development to identify and manage patients with EPS. The primary objective is to assess the impact of AIMS education on nursing professionals and its impact on reducing the long-term effects of antipsychotics (EPS) in patients.

In a recent study, researchers reported that the Extrapyramidal Symptom Rating Scale, Clinical Global Impressions of the severity of dyskinesia (CGI-SD) could be used for the identification of AIMS defined tardive dyskinesia (TD). Both scales are useful for future research on TD analysis in patients with chronic antipsychotic-induced side-effects. Both AIMS and ESRS are useful tools for the assessment of movement disorders. In addition, the Barnes akathisia scale (BARS), AIMS, and Simpson Angus Scale (SAS) has been widely used for the assessment of EPS among patients with acute and chronic movement disorders (Stomski et al., 2015). Thus, there is significant evidence, on the use

of assessment scales for movement disorders among patients administered with antipsychotic medication. Thus, the development of new strategies to train nurses in assessing patients with EPS is highly recommended.

## Concept, Models, and Theories

The rationale of concepts, models, and theories as applied to informing this DNP project was about what Dempsey (2016) described as current nursing research support with giving life to the motivational theory. Applying Maslow's theory to the nursing industry suggested that when nurses do not feel that their basic practice environment needs are being met, they will be less motivated and unlikely to progress to higher-level functions in the field of patient care priorities. And as Dempsey (2016) explained the new research outcome in the professional field of nursing implies how Maslow’s hierarchy of human needs is applicable nurse engagement priorities. At that highest level of human needs, the professional nurse motivation for self-actualization both in their career as connected to their personal life is about knowledge (Dempsey, 2016). From the context of this DNP project it focused on nurses in the mental health clinic and having the knowledge that makes them capable of recognizing the EPS is about having the competency skill and ability that motivates self-actualization.

Dempsey (2016) reminds nursing students to learn about applying such a motivational theory connected to prioritizing decision-making about patient-centered care and safety. This means the process first addresses issues interfering in accomplishing this including their physiologic needs as characterized by side effects of intervention antipsychotic treatment and EPS.

Application of such a model described by Dempsey (2016) to the nursing practice further suggests as indicated by the gap in knowledge most mental health clinic nurses have about recognizing EPS centers on their perspective of failing to meet the needs of their working environment. Another theoretical application as described by Hashemiparast, Negarandeh, and Theofanidis (2019) considers the existence of the theoretical knowledge gap. This is about effective performance of nurses in clinical settings requiring both the integration between theory and practice. These authors posit the existence of the gap between theoretical knowledge taught in nursing classrooms and their experience in clinical settings.

Consequently, in line with this DNP project focus the findings of Hashemiparast et al. (2019) is about answering the research question as stated in the above for this study and the need for a structured manner for transferring nursing theories into practice. This requires what Hashemiparast et al. (2019) describe using valid and up-to-date knowledge by bridging the simulated situations with real life scenarios for nurses possessing the proper motivation in a mental health clinic setting for recognizing EPS. The sum of concepts, models, and theories applied in this DNP project related to them as abstract such as the motivational theory and concrete such as EB practices. Wayne (2020) further described how practice-level nursing theories as those applied in this DNP project focused on a specific patient population and is narrow in scope. These theories as intimated in this paper are about interventions and outcomes aligned to needed knowledge for patient-centered safety and care (Wayne, 2020) as aligned to EPS. Wayne

(2020) also points out how these kinds of theories directly affect nursing practice as intended by the research in this DNS project.

## The Relevance of Nursing Practice

Nurses play an important role in detecting, preventing, treating, and managing patients with extrapyramidal symptoms (EPS). Patients with mental health issues often suffer from a range of psychotic issues. The dose, time, age, and medical history of the patient is associated with the impact of antipsychotic medications.

Mushtaq reports promoting evidence-based training for nurses be highly beneficial to the patient and family members (Mushtaq 2018). EPS may cause impaired physical activity in patients. Some of the important interventions that nurses can include are as follows: (a) Provide the patient with a safe environment. Eliminate damaging or harmful objects within the patient care facility or bedside. (b) Immediately report the physician in the case of excess tremors or convulsions. (c) Assist the patient in performing basic activities. The objective is to reduce distress and increase patient comfort. (d) In the case, the patient becomes restless (motor dysfunction). Therefore, ensure the patient sits comfortably and is in a relaxed position. Assist the patient until the motor restlessness ceases (Mushtaq, 2018).

Patients may also suffer from impaired urinary elimination. Some of the important interventions that nurses must include are as follows: (a) Maintain a urine input-output chart. (b) Ensure that the patient has adequate fluid intake. (c) Administer drugs as advised and recommended by the physician. (d) Promote normal voiding patterns of the patient (Mushtaq 2018).

Patients may suffer from acute weakness due to antipsychotics. Nurses need to identify and provide immediate interventions to ensure the patient is comfortable and safe. Some of the interventions to overcome activity intolerance are as follows: (a) Help the patient to perform minor activities daily when possible. (b) Minimize the risk of exhaustion by the patient and ensure the patient takes adequate rest during treatment. (c) Educate and train the patient and family members about basic daily activities and to prevent the use of dangerous equipment (Mushtaq, 2018).

In addition to treatment or side-effect specific interventions, nurses involved in the psychiatric management of patients may have the following responsibilities: (a) Advise the patient to not stand abruptly to prevent falls or serious injuries due to falls. Many patients may suffer from orthostatic hypotension. Hence, it is advisable to ensure safety while standing and walking. (b) The patient's vital signs are continuously evaluated after administration of antipsychotic medication. (c) The patient is recommended to have water at regular intervals. Many patients may suffer from dry mouth. Application of glycerin as per physician's discretion is necessary (d) The patient is recommended to have foods high in fiber. Consumption of fluids and fibre is recommended to prevent constipation. (e) Educate the patient on basic daily living. The patient should avoid driving after taking antipsychotic medication. (f) Patients administered with antipsychotic medication may suffer from photosensitivity. It is recommended that patients wear full sleeves and wear appropriate eye gear while going out (Mushtaq 2018).

The role of the nurse is not limited to the clinical management of the patient but also involves educating and counselling the patient. The use of evidence-based

interventions in clinical and non-clinical settings is essential to achieve better health outcomes in patients with high-risk of EPS (Mushtaq 2018).

## Local Background and Context

The typical delayed onset of EPS aligned to TD means it is clearly often overlooked as well as underdiagnosed in the mental health clinic setting (Dilks, Xavier, & Kelly, 2019) frames the institutional cont4ext as applicable to the problem addressed in this doctoral project.

As a key role of mental health clinical practices, nurses face constraints on the time and attention along with the recognized gap in training when it comes to recognizing EPS (Dilks et al., 2019). In this capacity, the recognized gaps in knowledge about recognizing EPS in a critical timely manner as well as the similarity in side effects of patients using antipsychotic intervention treatment lead to the needed focus of nursing professionals in the mental health clinic setting practicing what Dilks et al. (2019) describe as screening and assessment, creation of a supportive care environment, and educating the patient. The gap in knowledge specific to the screening and assessment of EPS as described by Dilks et al. (2019) means nursing knowledge in the mental health clinic is about awareness. This needed awareness that is fundamental to the gap in knowledge this DNP project addresses is as follows:

> …that all patients taking antipsychotics, especially long term, should be monitored for the development of antipsychotic-induced abnormal movements. Ideally, screening would occur before antipsychotic initiation and any change in therapy (antipsychotic switch or dose increase/decrease), with regular assessments

> throughout the course of treatment. In many practices, patients are regularly checked for other adverse events associated with antipsychotics (… orthostatic hypotension, hyperprolactinemia, weight gain). An assessment of the patient's movements could be incorporated into that protocol. (Dilks et al., 2019, p. 603)

The point made again, is the implication that any mental health clinic with nursing staff not performing their role under these guidelines specific based on having the needed knowledge for addressing the onset of antipsychotic side effects and EPS establishes the extent of the gap in knowledge starting at the academic level. This again, was the focus of this DNP project focus on how mental health clients being prescribed antipsychotics and nurses' knowledge regarding this topic improve the outcomes.

## Role of the DNP Student

As a DNP student, it is important to identify, assess, and review current issues within the healthcare sector. Mental health remains one of the most important components of health and well-being. Mental illness is like any other health issue or medical disease. A mental disease has a biological basis similar to other health issues, and thus, mental illnesses should be treated the same manner as all other diseases (Malla et al., 2015). As a DNP student working in mental health with over almost 2 decades of experience, I am dedicated to educating registered nurses on antipsychotics and early recognition of EPS symptom which promotes better outcomes for patients.

Evidence-based projects are developed by reviewing credible, valid, and reliable literature to assist with concepts and their definitions. As a DNP student, I utilized the four principles of evidence-based medicine (EBM), which are as follows: (a) utilized the

best available medical and scientific evidence for my department, (b) provided individualized, evidence-based care for my patients, (c) Assessed and incorporate the patient's preferences and needs; (d) expanded my personal clinical expertise to facilitate clinical and administrative outcomes.

My objective was to reduce the burden of mental health disorders on healthcare by providing effective and efficient healthcare services. Based on the review of best practice, the DNP student prepared an educational presentation, using different modalities to best meet the needs of adult learners. These modalities consisted of didactic, case study, role playing, observation, and problem-based learning modules

## Role of the Project Team

The project team involved various stakeholders associated with the development and implementation of the proposed intervention. The stakeholders or project team members involved the mentor (guide), university professors (committee members) directly involved in the project, and administrative staff. Although the student (author) was primarily responsible for the development and implementation of the project, each team member had an active role in the project. Committee members assisted with written content of the project to ensure information is valid and credible. My mentor assisted me with his expertise in the field of mental health by discussing my projects and the details to provide an educational seminar on antipsychotics and early recognition of EPS for nurses. The administrative staff assisted with appropriate documentation and processes to promote confidentiality and processes to follow to avoid any legality challenges, such as Institutional Review Board (IRB) processes. Each team member involved also helped in

various activities, such as data collection, processing, analyzing, and dissemination. The author also obtained professional support from mentors and university professors. The study design and methodology were planned per the university guidelines and universal ethical guidelines. Good clinical practice (GCP) was followed at all phases of the study/project. The administrators and staff members ensured all research activities such as assessment of nurse participants, evaluation of methodology, and results.

The author aimed to complete the project within the proposed timeline by following the guidelines established by Walden University. The committee members involved in the project ensure all ethical and clinical practices/guidelines are followed. Participants identified kept confidential and private at all phases of the project by keeping all content in a secure file cabinet. The committee members were only involved internal stakeholders, i.e., faculty members within the university. The study participants are registered nurses working in in the same mental health clinic as the author. The study participants enhanced their knowledge on the use of the Abnormal Involuntary Movement Scale (AIMS) to assist with early detection of EPS symptoms. The use of the AIMS not only facilitates quality care of patients but also enables nurses to be vigilant and aware of new practices.

## Summary

As a DNP student, developing and implementing a proposed solution/strategy in the department is a complex and challenging process. Some nurses are experienced staff and are habituated and familiar with conventional patient assessment and management

strategies. However, the primary objective of providing the educational seminar tool to enhance the knowledge and skill set of nursing students and professionals.

Section 3: Collection and Analysis of Evidence

## Introduction

The literature review provided evidence of the gap in the literature specific to the need identified in the research question of this DNP project. This is in terms of the context of nursing practice and the need for training at the student and professional nursing level for early recognition of EPS. Literature reviewed provided evidence of the relevance of the findings of this DNP project contributing to nursing competencies (AACN, 2020) for positive social change based on concepts, models, and theories (Dempsey, 2016).

Further to the EB literature review for this DNP project the search used resources including PubMed as the primary database to gather published research studies and reports on this DNS research problem. Google scholar, OVID, and CINAHL databases were also used to assess research articles associated with EPS and AIMS. This doctoral project addressed the meaningful gap-in-practice of nursing typically lacking the needed training and the accompanying knowledge for early recognition of the characteristics of EPS.

## Practice-Focused Question

The practice-focused question for nursing mental health clinic staff education was: Will a staff education seminar on AIMS Testing increase staff knowledge on the assessment for symptoms of EPS.

## Sources of Evidence

The sources of evidence-primarily involved research articles focused on the use of assessment tools such as Abnormal Involuntary Movement Scale (AIMS) for the management of patients with EPS (Pringsheim, Gardner, & Addington, 2018).Several randomized-control trials (Spieth, Kubasch, & Penzlin, 2016) and meta-analysis (Ostuzzi, Bighelli, & So, 2016) were critically reviewed. Literature pertaining to nursing students' perception of the use of assessment and diagnostic tools were also reviewed (Taskin, Sabanciogullari, & Aldemir, 2015)

Some of the keywords that were used for the initial search and review include Extrapyramidal signs, rigidity, parkinsonian signs, tremor, neurologic examination, motor retardation, assessment tools, AIMS, antipsychotics, akathisia, anti-Parkinson medication, and classification of antipsychotics. The literature search was based on the recent development in the treatment, identification, and management of EPS in psychiatric patients. The review was not based or focused specifically for patients with psychiatric issues.

## Evidence Generated for the Doctoral Project

Nursing professionals was the target sampling with instructions their responses remain anonymous. This study focused on measures by target sampling competencies in their ability for early recognition of EPS in a community mental health clinic setting. A pre-test and post-test were administered to identify the gap in knowledge relative to this DNP project. In the assessment of the target sampling responses assessment includes classification for determining evidentiary implications of these to the focus of the overall

study. This DNP student selected the number of participants of the sampling depending on the amount of data determined needed to establish qualitative and quantitative evidence substantial for filling the identified gap in the literature for this DNP project.

## Analysis and Synthesis

The DNP student provided an introduction of the overall process for participants. Participants was identified by using a series of numbers and test questions and was identified by using numbers 1-15. A pre-test was administered to obtain baseline data. Following the pre-test, the target sampling participants received instructions on early recognition of EPS characteristics. During the sampling participants' education session, a PowerPoint presentation including discussion on assessment, diagnosis, planning, implementation, and evaluation relative to antipsychotics and EPS. After the staff education session was completed, the DNP student provided a question-and-answer session to further explained and provide clarification on any knowledge deficit. After the participants have completed the question-and-answer session following the staff education, a post test will administered to obtain post-education data. Once the data has been collected, a statistical analysis was then performed. The pre and posttest was composed of 12 questions relative to EPS symptoms and assessment. The questions posed was images of symptoms, true and false questions, select all that apply, matching, and multiple choice. Statistics was examined using survey monkey composed of 12 questions relative to EPS symptoms and AIMS testing. Percentages for each question was obtained comparing both, pretest and posttest. After all data was collected, aggregated,

and analyzed, the findings and recommendations were written to identify the gap in knowledge.

The collected data was kept in an Excel spreadsheet to determine the frequency and accuracy of various answers. This data was classified into sections grouped as data during, before, and after training of the personnel. The results also contained data regarding identification of signs and symptoms of EPS relative to the antipsychotics. The finding of this DNP project will be reviewed and tailored to provide individualized care and management for patients with EPS. The published outcomes and research module are based on building the foundations of a robust and comprehensive diagnostic framework for patients with EPS.

## Summary

Nursing students and professionals need to be knowledgeable and skilled in matters of the characteristics of EPS. The intention of this section examined the sources of evidence while explaining the outcomes of the data. This section also successfully presented the operational and archival data as well as the evidence generated during the doctoral project.

Section 4: Findings and Recommendations

## Introduction

One of the major problems associated with extrapyramidal symptoms is the lack of healthcare professionals to provide community-oriented mental services as well as patient-centered safety (Salmond & Echevarria, 2017). Lack of adequate training to diagnose EPS has led to incorrect diagnosis at the early stages. Therefore, gaps for training and equipping healthcare professionals with skills, knowledge, and experience in EPS still exist (Lake et al., 2017). Patients suffering from untreated extrapyramidal symptoms at early stages encounter social problems characterized by difficulties in communicating, ambulating, and carrying out tasks at school, work, or home (Cooper, Hong, & Beandin, 2016). Failure to recognize and treat EPS leads to movement disorders among patients exhibiting signs. Notably, communities affected with EPS disorders fail to adhere to treatments.

Members of communities ignore visiting clinics for checkups and treatments. In addition, affected patients fail to attend clinical appointments for further medical treatments (Wubeshet et al., 2019). Wubeshet et al. (2019) also mentioned clinical officers face difficulties in defining the scope of EPS disease because of different forms of presentations that require psychiatrists and mental health professionals rather than nursing treatments; Therefore, the dilemma of interests exists due to a failure to define the scope of practice. Thus, most professionals delegate responsibilities, and professional liabilities associated with EPS. Another significant challenge includes a lack of adhering

to mental health standards and its principles of medication (Salem et al., 2017 & D'Souza & Hooten, 2020).

Notably, prescribed antipsychotic medications may lead to adverse side effects if patient physicians ignore effective follow-ups (Cooper et al., 2016). The impact of failure to comply with mental medication procedures leads to re-hospitalization or exacerbation. On the same note, the side effects of prescribed medication may yield secondary adverse impacts thus hindering people from seeking appropriate medication from hospitals; In addition, communities perceive EPS as a curse, misfortune, or cultural disorder (Salmond & Echevarria, 2017). Therefore, various myths surrounding the condition increase its severity, ignorance, and mortality rates in society (Lake et al., 2017). Consequently, cultural and heritage practices believe conditions require traditional medication such as herbals medication or healing by natures. In that regard society, and health professionals lack adequate knowledge and information to encounter the disease (Wubeshet et al., 2017).

## Findings and Implications

The nature of my project was to bring awareness to the gap of knowledge relative to antipsychotics and the importance of early recognition of EPS symptoms by implementing an educational training for nursing professionals. The DNP project process was motivated by a recent study research conducted in MC Gann district teaching hospital and a confirming research that involved pre-training and post training survey. The research selected the two types of research because they are related to the training of nurses. The research study observed patients attending the psychiatry outpatient

department for duration of one year. The study involved the assessment of extrapyramidal symptoms caused by a lack of administering antipsychotic medications. Characteristics of assessed participants in research involved patients diagnosed with psychosis and receiving treatments in teaching hospitals. The Institutional Review Board number assigned for this project is 10-23-20-1009695.

## Findings and Implications

The project took place in a small mental health clinic. Out of the 10 possible nursing professionals available in the clinic who were qualified to participate in the project, 7 nurses were able to complete the pretest, composed on 12 questions which is listed in Appendix A. The same 7 nurses completed the educational initiative, posttest composed of 12 questions listed in the appendix B, and evaluation listed in Appendix C. Demographic data was collected based on age of the participant, nursing level/positions, experience in mental health, formal education relative to EPS, and confidence level using the AIMS.

Based on the demographics, the training included a total of 7 participants; which were three licensed practical nurse (LPN) and four registered nurses. The average age of the nurses was 34. Based on survey questions the levels of experience among mental health nurse revealed that only one nurse out of seven had experience of over five years in addition only two nurses had experience of over ten years. Therefore, most of mental health nurses lack experience in the profession (Lake., et al., 2017). According to the responses received, 2/7 nurses had over 10 years of experience, 1 /7 had 5-10 years of

experience, 1/7 had 3-4 years of experience, 1/7 had 2-3 years of experience, and 2/7 had 0-1 year of experience in mental health as a nurse.

The survey confirmed revealed that two out of seven received formal training on EPS symptoms in healthcare profession while five never received EPS training. The assessment on confidentiality in using Abnormal Involuntary Movement Scale (AIMS) revealed that only two staff had confident while five had no confidence. When inquiring about level of knowledge regarding the AIMS, 5/7 nurses documented no knowledge at all, 1/7 reported being knowledgeable, while the other participant reported being somewhat knowledgeable of using the AIMS.

The survey has revealed that none of healthcare workers received formal education training on EPS symptoms and management from the mental health clinic. The results average score on Pre-Test =57.14. The post-training survey showed that after receiving educational training people became confidential that they could identify signs of Extrapyramidal Symptoms. In addition, after training nurses indicated high-level confidentiality in using Abnormal Involuntary Movement (AIMS) Scale compared to pretest. After the training, the 2/7 participants reported being very confident, 3/7 reported being confident, and 2/7 reported being somewhat confident in using the AIMS.

As previously discussed, the practice-focused question for this staff education program is: “The practice-focused question for nursing mental health clinic staff education is: Will a staff education seminar on AIMS Testing increase staff knowledge on the assessment for symptoms of EPS.” The average pretest score was 57.14, while the average posttest score was 86.42. Therefore, the implemented educational initiative was

effective in improving knowledge of the nurses relative to early recognition of EPS symptoms.

## Recommendations

One recommendation in managing and controlling Extrapyramidal Symptoms include training healthcare professionals on monitoring frequently onset of Extrapyramidal side effects. According to directives provided by the American Psychiatric Association (APA), physicians should acquire training on monitoring Extrapyramidal Symptoms during initial treatment and later after every two weeks. According to Haddad and Correll (2018), the patient should rely on clinical monitoring of signs and symptoms because they guarantee professional evaluation of the patient and adequate follow up. In addition, the study suggests structured approaches characterized by the use of Simpson–Angus Extrapyramidal Side Effect scale that guarantee quick measure and efficient results in detecting Extrapyramidal side effects (Correll, 2018). Simpson–Angus Extrapyramidal Side Effect scale is one of the essential tools for monitoring signs and symptoms of Extrapyramidal because it has revealed reliability in providing timely results especially among patients treated with antipsychotic medications (Carbon et al., (2017).

Another recommended strategy in managing the impact of antipsychotic medications includes training nurses to use and target using discontinuing causative agents of Extrapyramidal symptoms. According to Patterson-Lomba, Ayyagari, and Carroll (2019), strategies for neutralizing causative agents include managing issues associated with drug-induced treatments. Notably, discontinuing antipsychotic

medications lead to adverse impacts however adding agents with the potential of contributing to reduced risks of Extrapyramidal effects guarantee resilient control of symptoms. However, physicians should apply additional agents carefully to minimize drug induces symptoms. According to Musco, et al. (2019) argument, physicians should have adequate knowledge about available alternatives appropriate for switching from antipsychotic drugs to lesser impact drugs. Introducing medical doctors to agents of choice such as Quetiapine would lead to a smooth transition from antipsychotic because they have fewer chances of causing drug-induced symptoms related to Extrapyramidal.

The recommended drugs include iloperidone and clozapine. However, the physician should establish adequate evidence on making decisions on whether the recommended medications are viable and feasible based on patient conditions (Salem et al., 2017). In case switching from antipsychotic is impossible, healthcare workers should apply alternative strategies such as gradual lowering of antipsychotic dose. Moreover, physicians should learn alternative strategies such as adding an anticholinergic medication, such as trihexyphenidyl or benztropine (Wubeshet et al., 2019). Finally, another option includes introducing non-anticholinergic agents such as amantadine to exacerbate symptoms and signs induced by psychotic drugs.

Another significant recommendation includes providing nurses with training on essential responsibilities and roles of offering therapeutic services to their patients. Nurses should have adequate training and professional knowledge and skills in identifying EPS especially the early onset stages. Such information would facilitate the provision of critical nursing patient-centered safety and care. In addition, educating

nurses would guarantee the provision of education to patients regarding risks associated with antipsychotic-induced drugs and anticipated movement's disorders. Both nurses and patients need to have awareness of fact that appropriate treatments for patients are available especially in events where the diagnosis is performed at right time. It is recommended that nurses and other professionals should rely on Web sites that give guidelines and directives regarding the provision of support and advocacy to patients, families, and caregivers.

## Contributions of the Doctoral Project Team

Although the project had no dedicated team, various parties have taken significant roles in shaping the format of the entire paper. The DNP Student provided significant 12 multiple-choice questions that acted as pretest and post-test in preparation for administering nursing training. The school department of research has significantly contributed to the project through approving proposals, methodologies, and systematic implementation of the project. The introduction of the project in the course has significantly enhanced the acquisition of knowledge and information in antipsychotics medications necessary and potential for lifesaving.

The course coordinators have actively monitored and evaluated activities involved in projects with aim of promoting an important role in recognizing, assessing, and managing antipsychotic-induced movement disorders. Notably, accessible research databases and various authors have enhanced critical comparisons with the reported Extrapyramidal side effects thus significantly contributing to the content and results and

findings reported herein. Essentially, teamwork was an inevitable element of the success of the entire project.

## Strengths and Limitations of the Project

The project has established clinical models and recommendations due to the adequate strengths of the project. Firstly, support from nursing professionals has supported the project by providing scientific information regarding theories, and medical proves. Literature review articles, journals, and publications offered support evidence concerning researched principals, variables, and medical concepts.

The project also offers a great influence on the compliance of healthcare professionals towards providing antipsychotic medications through adhering to close monitoring of possible Extrapyramidal side effects. In that regard, the project contributes to improved management and control of extrapyramidal symptoms through practicing appropriate diagnostic criteria. The article advocates for an appropriate treatment that guarantees increased compliance and efficacy of the medications.

On the other hand, challenges were inevitable across the entire research project. Firstly, direct contact was highly avoided due to policies associated with the prevention and control of the Covid-19 pandemic. In that regard, challenge hindered data and information collection procedures using interview methodology. Therefore, in the future research study will consider implementing online teleconferencing interviews using Zoom and WhatsApp applications.

The project encountered a critical challenge involving a lack of adequate time to conduct personal and real-time experimental research with newly diagnosed psychiatric

patients. Consequently, the project relied on literature reviews and experimental research from reviewed articles. However, future projects will incorporate experimental research to ensure resilient approving and reliability of data and information for future study.

Notably, it is essential to understanding the nature of patient-treatment interactions because such knowledge would help in predicting individuals' possibilities of becoming a victim of the risk of developing specific types of EPS. In that regard, the project recommends that future research should focus on exploring additional patient characteristics associated with nutritional behavior such as albumin and vitamin as well as lifestyles. Future studies should consider searching for risk factors associated with the development of EPS. The research should establish whether it contributes to adverse effects such as hyperglycemia, hyperprolactinemia, hyperlipidemia, hypotension, sedation, and anticholinergic, interval prolongation. Such researches would establish a background assisting clinicians by identifying patients with a high likelihood of developing anticipated and probable adverse effects of EPS. In addition, such research may contribute to improved intervention strategies aimed to control and manage the overall outcomes of EPS.

## Section 5: Dissemination Plan

The mode of disseminating detailed content of the DNP project will apply modern technologies to ensure effective compliance with Covid-19 rules and guidelines for ensuring maintenance of safe distance. However, the mode of delivering content will largely depend on the type of audience targeted. Notably, target audiences include healthcare stakeholders, nursing leaders, policymakers, nursing practitioners, nursing students, and financiers. Among nursing leaders and health care, stakeholders such as health ministers and cabinet secretaries, the mode of dissemination will incorporate engaging conference meeting and deliver the content using PowerPoint presentations.

The method is appropriate because the number of participants is limited, and it is easier to keep a distance to avoid contact during the presentation. In addition, direct lecture with a major executive team guarantees effective communication because it will offer direct feedback as well as giving rise to debates, discussions, and dialogues. Moreover, such settings guarantee the chance of convincing and emphasizing major points. Among the policymakers, the most effective dissemination includes composing the content of the DNP project into a formal document and then distribute it to various offices.

For instance, each member of the Senate, House of Representatives, and the judicial system should retain a copy. Then the specific leaders in various sections should take responsibility for reading the document or guide discussions on a particular official day. On the other hand, financiers, supporters, and donors should receive information through the official presentation to individuals. For corporate financiers, scheduling an

official presentation would guarantee an effective strategy of presenting the idea to specific individuals. Essentially, during the dissemination of information, each financier should get the report as an individual to avoid conflicts of interest when combined with other financiers.

Among nursing practitioner's mode of disseminating information should involve the periodical creation of appropriate awareness. The dissemination mode should involve frequent training, workshop, and seminars to deliver information to target audiences. The mode of disseminating information to nursing practitioners through training, seminars, and workshop guarantee each nursing practitioners have acquired right information, skills, and experience. It is a form of advancing career for nurses through encouraging evidence-based practice to patients. Therefore, each healthcare institution should have enough copies for each healthcare worker and coordinate training, workshop, and seminars for nurses to acquire appropriate enlighten.

Moreover, among nursing students, the most appropriate mode of transmitting information is through creating awareness concerning areas of practice that students should concentrate on during their studies. The DNP project article should become one of the verified articles for studies. It should become a free-access resource to facilitate research and referencing. Finally, the article should be made accessible to students online as well as in respective databases, as well as school libraries.

## Analysis of Self

I feel privileged to take part in the DNP project because I have actively participated in the entire project through researching, analyzing, and comparing one of

the social and health issues in society. Through the DNP project, I have familiarized myself with the essential duties and responsibilities of a nursing practitioner. I have gained experience, skills, and experience in advocating for positive change in society. Notably, as an aspiring clinical nurse manager, I have the potential of integrating significant academic theory into practice and enforcing a direction of transformation within the health sector. As far as EPS issues are concerned, I have acquired essential background for adhering with supervision, monitoring, and enforcing follow up health practices to ensure patients diagnosed with EPS and receiving antipsychotic drugs are routinely evaluated screened and tested for EPS.

During the DNP project, I have realized severe cases of EPS in the community. I have interacted with a family and individuals suffering from adverse impacts of using antipsychotic drugs. Some members of the community lacked essential information regarding EPS. They had no idea about the condition and ignored visiting healthcare facilities because they believe the ailment is a natural disaster, culture, or just a normal condition. Family members offered their sick members herbal drugs aiming at establishing a solution. Consequently, the lack of awareness in the community has triggered efforts to create awareness about EPS and antipsychotic drugs. Importantly, such medicines have the potential of eliminating major issues affecting patients suffering from EPS in the community. Such strategies will transform members of the community and embrace medical solutions as a major alternative to health issues.

Team spirit has significantly encouraged and contributed to the development of the DNP project from beginning to end. I recognize the efforts of project supervisors

because of resilient advice and instructions towards achieving successful completion of the project. Healthcare trustees offered significant support on helping to answer post and pretest questions. In addition, their scientific evidence has contributed to reliable content and information in my DNP project. The project would appear boring, but my colleague nurses, I proudly felt the support, encouragement, and inspiring evaluation, critiques, as well as corrections. I acknowledge my appreciation of information and technology experts for great work in ensuring my project has met technological standards. I appreciate, for formatting as well as guidelines for enforcing online searching, as well as defining criteria for filtering key terns during search operations. I feel pleasure having worked with a supportive team in the entire DNP project and completed it as intended. Given another chance I would always select the entire team to achieve greater prospects

Although difficulties were inevitable during the event of Covid-19 the challenge was just an inspiration towards discovering more resilient methods and strategies for accomplishing the task. Though practical and real-time interactions with patients suffering from DNP failed, data and information gained from literature reviews, journals, and publications provided significant data worth the effort. Therefore, most plans went well as planned and in my plans, a resilient contingency plan will consider all factors that have affected the current project. I feel stronger and more prepared to handle future projects in a more improved and professional style.

## Summary and Conclusion

Drug induced infections have caused dilemmas in the treatment of EPS using antipsychotics. However, earlier diagnosis and treatments have the potential of

guaranteeing life-saving medications. Nevertheless, the treatments cause certain unavoidable risks, including antipsychotic-induced movement disorders. The side effects infect focal points manifesting destructions in various sections such as cranial, cervical, pharyngeal, and axial muscles. Consequently, the consequence leads to oculogyric crisis, tongue protrusion, stiff jaw, torticollis, pharyngeal spasm, dysphagia, laryngeal, and dysarthria. Notably, extrapyramidal symptoms cause difficulties in breathing, opisthotonos, and cyanosis. Therefore, Nurses play a significant role in recognizing, assessing, and managing antipsychotic-induced movement disorders. Training nursing professionals and equipping physicians with appropriate medical and treatment information could significantly help in applying appropriate drugs to reduce the impact of antipsychotic-induced movement disorders. Essentially, health care patients, caregivers, and professionals should work together in eliminating issues associated with EPS and treatment disorders. The society should adhere to scheduled nursing clinics and conform to approved medications approved safe for use in conjunction with the patient's stable antipsychotic therapy. Essentially, nurses should optimize patient care by reinforcing the importance of taking medications as recommended and referring them to pharmacists or other professionals if specific questions about dosing or drug interactions arise:

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# Appendix A: Pretest

The following questions are designed to test of knowledge and skills on the subject of EPS: Please carefully review each question and submit one final answer.

1. When a patient is experiencing the following symptoms: restlessness, pacing, constant motion, the patient is experiencing.
   A. PSEUDOPARKINSONISM
   B. DYSTONIA
   C. TARDIVE DYSKINESIA
   D. AKATHISIA

2. The following image best describes what type of behavior?

   A. PSEUDOPARKINSONISM
   B. DYSTONIA
   C. TARDIVE DYSKINESIA
   D. AKATHISIA

3. The following image best describes this patient?

A. PSEUDOPARKINSONISM

B. DYSTONIA

C. TARDIVE DYSKINESIA

D. AKATHISIA

4. _____ is considered the be the irreversible symptom.

A. PSEUDOPARKINSONISM

B. DYSTONIA

C. TARDIVE DYSKINESIA

D. AKATHISIA

5. Which of the following best describes a patient experiencing acute sustained contraction of muscles, usually of the head and neck; upward eye rolling, facial grimacing?

   A. PSEUDOPARKINSONISM
   B. DYSTONIA
   C. TARDIVE DYSKINESIA
   D. AKATHISIA

6. The following image best describes this patient?

7. Involuntary movements of the facial muscles, tongue, and limbs; a possible neurotoxic side effect of long-term use of antipsychotic drugs that target certain dopamine receptors is also known as what?

A. PSEUDOPARKINSONISM

B. DYSTONIA

C. TARDIVE DYSKINESIA

D. AKATHISIA

8. _____, usually begins in minutes to days after administration of an antipsychotics.

A. PSEUDOPARKINSONISM

B. DYSTONIA

C. TARDIVE DYSKINESIA

D. AKATHISIA

9. _____, usually begins in days to weeks following the administration of an antipsychotic.

A. PSEUDOPARKINSONISM

B. DYSTONIA

C. TARDIVE DYSKINESIA

D. AKATHISIA

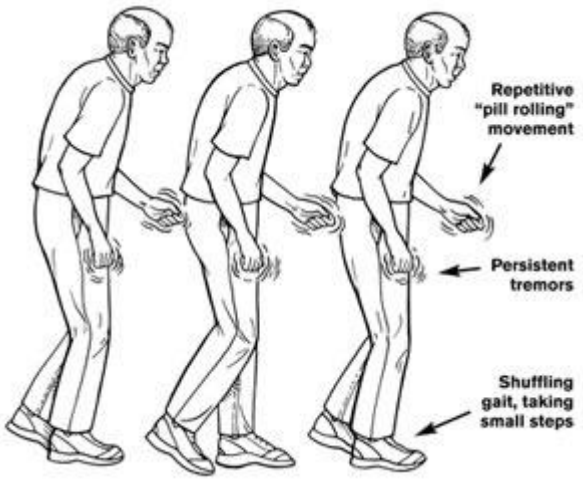
10. _____ is seen in a matter of minutes to hours when initiating anti-psychotic therapy?

A. PSEUDOPARKINSONISM

B. DYSTONIA

C. TARDIVE DYSKINESIA

D. AKATHISIA




11. (see above image) Tremor, shuffling gait, rigidity, bradykinesia, pill-rolling of the hands is best known as?

A. PSEUDOPARKINSONISM

B. DYSTONIA

C. TARDIVE DYSKINESIA

D. AKATHISIA

12. This examination is done prior to initiation of anti-psychotic therapy.

# Appendix B: Posttest

The following questions are designed to test of knowledge and skills on the subject of EPS: Please carefully review each question and submit one final answer.

4. When a patient is experiencing the following symptoms: restlessness, pacing, constant motion, the patient is experiencing.
   A. PSEUDOPARKINSONISM
   B. DYSTONIA
   C. TARDIVE DYSKINESIA
   D. AKATHISIA

5. The following image best describes what type of behavior?

   A. PSEUDOPARKINSONISM
   B. DYSTONIA
   C. TARDIVE DYSKINESIA
   D. AKATHISIA

6. The following image best describes this patient?

A. PSEUDOPARKINSONISM

B. DYSTONIA

C. TARDIVE DYSKINESIA

D. AKATHISIA

4. _____ is considered the be the irreversible symptom.

A. PSEUDOPARKINSONISM

B. DYSTONIA

C. TARDIVE DYSKINESIA

D. AKATHISIA

7. Which of the following best describes a patient experiencing acute sustained contraction of muscles, usually of the head and neck; upward eye rolling, facial grimacing?

   A. PSEUDOPARKINSONISM
   B. DYSTONIA
   C. TARDIVE DYSKINESIA
   D. AKATHISIA

8. The following image best describes this patient?

7. Involuntary movements of the facial muscles, tongue, and limbs; a possible neurotoxic side effect of long-term use of antipsychotic drugs that target certain dopamine receptors is also known as what?

A. PSEUDOPARKINSONISM

B. DYSTONIA

C. TARDIVE DYSKINESIA

D. AKATHISIA

8. _____, usually begins in minutes to days after administration of an antipsychotics.

A. PSEUDOPARKINSONISM

B. DYSTONIA

C. TARDIVE DYSKINESIA

D. AKATHISIA

9. _____, usually begins in days to weeks following the administration of an antipsychotic.

A. PSEUDOPARKINSONISM

B. DYSTONIA

C. TARDIVE DYSKINESIA

D. AKATHISIA

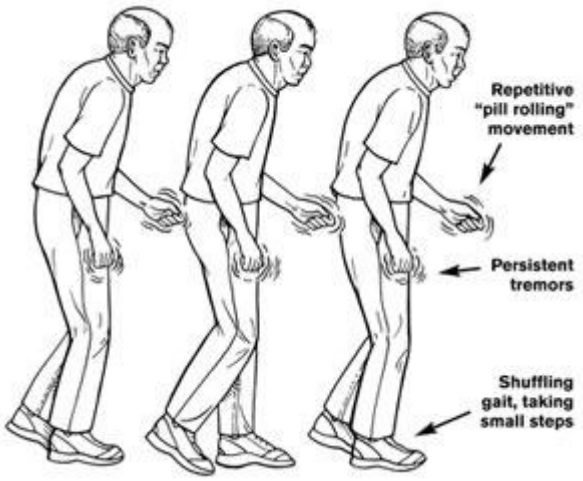
10. _____ is seen in a matter of minutes to hours when initiating anti-psychotic therapy?

A. PSEUDOPARKINSONISM

B. DYSTONIA

C. TARDIVE DYSKINESIA

D. AKATHISIA




11. (see above image) Tremor, shuffling gait, rigidity, bradykinesia, pill-rolling of the hands is best known as?

A. PSEUDOPARKINSONISM

B. DYSTONIA

C. TARDIVE DYSKINESIA

D. AKATHISIA

12. This examination is done prior to initiation of anti-psychotic therapy.

Appendix C: Evaluation

Importance of Early Recognition of Extrapyramidal Symptoms (EPS) in a Community Mental Health Clinic
Jamil Davis, MSN, RN
Walden University DNP Capstone Project

Date:

**INSTRUCTIONS:** Please circle your response to the items and rate aspects using the educational initiative 1 to 5 scale:
1= "Strongly disagree," or the lowest, most negative impression
2= "Disagree"
3= "Neither agree nor disagree", or an adequate impression
4= "Agree"
5= "Strongly agree." Or the highest, most positive impression.
Choose N/A if the item is not appropriate or not applicable to this workshop.

**Your feedback is valued and greatly appreciated. Thank you!**

| | | | | | | | N/A |
|---|---|---|---|---|---|---|---|
| 1. | The results of the Likert scale questionnaire were informative | 1 | 2 | 3 | 4 | 5 | |
| 2. | The education increased my awareness of early recognition of EPS in community mental health clinic environments | 1 | 2 | 3 | 4 | 5 | |
| 3. | I understand symptoms of EPS more than I ever did before | 1 | 2 | 3 | 4 | 5 | |
| 4. | The educational initiative was easy to follow and understand | 1 | 2 | 3 | 4 | 5 | |

5. Do you have any additional comments? (place below)

_____
_____
_____
_____
_____