ASSESSING AND STRENGTHENING NEW PROVIDER EDUCATION RELATED TO EXTRAPYRAMIDAL SYMPTOMS AND ANTIPSYCHOTIC MEDICATION USAGE

Submitted to the

Faculty of Liberty University

In partial fulfillment of

The requirements for the degree

OF Doctor of Nursing Practice

By

Mesiah O'mar Porter, Jr.

Liberty University

Lynchburg, VA

October 2022

SCHOLARLY PROJECT PROPOSAL

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Scholarly Project Chair Approval:

Dr. Sherri Walker, Ph.D., PMHNP-BC. October 2, 2022

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SECTION ONE: INTRODUCTION

Advanced Practice Nursing at the doctoral level, specifically in psychiatric-mental health services, has become a significant area of focus in healthcare, as more practitioners with this level of knowledge and expertise are needed. Each year, the number of Americans experiencing psychotic episodes, resulting in a formal diagnosis of a psychiatric-mental health condition, grows exponentially. Given current research numbers and future projections, it stands clear that the increasing number of patients with these psychotic disorders vastly outnumber the Advanced Practice Providers (APP) available. Thus, there is an additional focus on the effectiveness and efficiency of current care practices, which aids these providers in caring for this growing patient population. Specifically, there exists a need to manage extrapyramidal symptoms (EPS), given that a quarter of patients taking antipsychotic medications will experience EPS while failing to have their symptoms recognized promptly by new Practitioners if Abnormal Involuntary Movement Scale (AIMS) testing is not utilized (Kadakia et al., 2022).

Background

As it stands, no standardized onboarding tool or educational resource exists for new Psychiatric-Mental Health Nurse Practitioners (PMHNP) as they begin new occupations, which regulate the prescribing and monitoring of antipsychotic medications (Keating et al., 2021). Each Provider, whether practicing for the first time or adding a new specialty to their experience, was trained specifically to meet the objectives and expectations of their programs of study (Morreale et al., 2020). Additionally, testing and licensing boards at the state and national levels require entry-level knowledge of a broad array of psychiatric-mental health topics and conditions (Morreale et al., 2020). Thus, while attempting to incorporate this abundant knowledge into

clinical practice, many novice Nurse Practitioners are overwhelmed and often fail to implement tools such as Abnormal Involuntary Movement Scale (AIMS) testing (Keating et al., 2021).

As a result, research studies have been conducted to assess the recurring concerns of both PMHNPs and associated facilities regarding treatment knowledge and management of patients taking antipsychotic medications for psychotic conditions (Gamón et al., 2021). However, data related to this topic is minimal, as not many studies have yielded fundamental statistical analyses. Regarding the studies reviewed, most involved surveying PMHNPs, focusing on their concerns related to practice preparation when conducting AIMS testing as an assessment tool for treating patients with antipsychotic medications (Delaney & Vanderhoef, 2019). Thus, there is a growing call to better align provider and facility care and treatment approaches with national clinical practice guidelines, such as the National Institute for Health and Care Excellence (NICE) Clinical Guidance and the American Psychiatric Association Practice Guideline for the Treatment of Patients with Schizophrenia, as these practice guidelines highlight the use of resources such as AIMS testing (Gamón et al., 2021). Abnormal Involuntary Movement Scale (AIMS) testing has grown to be a critical assessment tool when treating patients with antipsychotics, as national estimates suggest that roughly twenty-five percent of patients receiving this class of medications experience some form of extrapyramidal symptoms (EPS), which require intervention, care, and treatment (Kadakia et al., 2022).

Problem Statement

Despite the increasing need for psychiatric-mental health services to manage psychotic conditions, new Nurse Practitioners are not routinely utilizing practical screening tools to make the diagnostic process more proficient and efficient. Abnormal Involuntary Movement Scale

(AIMS) testing is essential because antipsychotic medications have been found to cause EPS, which can steadily progress into additional health complications. Inadequate recognition and treatment of these associated conditions pose a significant liability to providers. In addition, EPS can be life-threatening to patients as it develops into metabolic syndrome, tardive dyskinesia (TD), or even death. Thus, low usage of AIMS testing can negatively impact providers' ability to meet associated care practice standards when treating psychotic patients with antipsychotic medications.

Purpose of the Project

The purpose of this project is to increase new Psychiatric-Mental Health Nurse Practitioners' knowledge and compliance related to Abnormal Involuntary Movement Scale (AIMS) testing. This project further increases the clinical application and comprehension of AIMS testing and its associated data as it applies to preventing, identifying, and managing extrapyramidal symptoms (EPS). This research proves most pertinent when comparing new Providers' EPS development and progression assessments in patients taking antipsychotic medications. Screening for EPS is a care practice standard, which should include AIMS testing. This project will identify trends amongst new Providers' usage of this testing tool post-educational intervention.

Clinical Question

Can an educational intervention regarding AIMS testing knowledge and usage increase its clinical application amongst new Psychiatric-Mental Health Nurse Practitioners as a quality improvement measure to meet care practice standards?

SECTION TWO: LITERATURE REVIEW

Search Strategy

A systematic literature review was conducted using research database systems such as CINAHL-Plus, PubMed, and EBSCO Host. All articles utilized were published within a five-year window of 2022, with no articles published before 2017. Each article was published in the English language. Keywords and phrases utilized to conduct the literature search included Nurse Practitioner, psychiatric, mental health, AIMS, psychosis, psych-mental health, Psychiatric-Mental Health Nurse Practitioner, antipsychotics, medication education, novice Psychiatric-Mental Health Nurse Practitioner, Psychiatric-Mental Health Nurse Practitioner prescribing, Nurse Practitioner prescribing, patient education, extrapyramidal symptoms (EPS), adverse effects, schizophrenia, standards of care, and Parkinsonian.

Approximately one hundred and fifty articles resulted upon completion of the initial literature search. Forty articles were subsequently selected due to their specific inclusion of a single word or combination of the keywords or phrases previously listed. Ten studies remained after reviewing each article's abstract and assessing each study for relevance and applicability. After that, a literature matrix review was created, consisting of the ten remaining research studies. The research study types included retrospective, longitudinal, and observational studies; randomized control trials; retrospective literature reviews; meta-analyses; cross-sectional and prospective studies; and qualitative descriptive studies.

No hand searches were conducted to obtain bibliographies or research studies. However, a subsequent literature search utilizing the same database systems was conducted to find articles using additional key terms: psych liability, psych-mental health standards of care, Nurse

Practitioner liability, and antipsychotic risks. A total of fifteen articles were gathered for review upon completion of both searches.

Critical Appraisal

After analyzing the data and information gathered from each article, key factors were itemized, including study strengths, weaknesses and limitations, methods, and results. Of the articles reviewed, five demonstrated limitations related to their small sample sizes, while three demonstrated limitations related to their substantial sample sizes. The remaining articles were either limited by the study conduction locations or by the limited availability of research data. Conversely, each article demonstrated strength related to their methods of conduction, as some form of detailed research, experimentation, and analysis was executed while omitting opinion-related data. Ultimately, the focal points of each study centered on the severity of extrapyramidal symptoms, provider knowledge, safety, and antipsychotic prescribing methods. See Appendix A for a copy of the Level of Evidence Matrix.

Synthesis

Concerning the research information presented in the literature matrix review, a general conclusion could be drawn from the key findings: Psychiatric-Mental Health Nurse Practitioners' knowledge of early detection methods, such as AIMS testing, decreases the occurrence or effects of extrapyramidal symptoms (EPS) in patients taking antipsychotic medications. Research findings have shown that adverse event scales, such as the Abnormal Involuntary Movement Scale (AIMS), have a clinically significant impact on identifying and preventing the worsening of antipsychotic medications' adverse effects (Mangano et al., 2020). Given the progressive

onset of these symptoms, care practice standard assessment measures, such as AIMS testing, are ideal in both the initial and maintenance stages of prescribed antipsychotic medications (Mangano et al., 2020). This usage is further supported by current research literature, which details the statistically infrequent usage of AIMS testing by novice PMHNPs. Subsequently, it encourages educational reinforcement of AIMS testing amongst this population (Mangano et al., 2020). Thus, the literature encourages the finding, administration, interpretation, and integration of AIMS testing into practice through expansive and patient-centered thinking to achieve optimal patient health outcomes (Mangano et al., 2020).

Conceptual Framework/Model

The Iowa Model Revised: Evidence-Based Practice to Promote Excellence in Health Care is a conceptual model that is utilized to integrate evidence-based research into clinical practice. Upon identifying triggering issues or opportunities for research expansion, this conceptual model was then applied to develop a formal research project. In this instance, the Iowa Model addressed the priority of need related to novice Psychiatric-Mental Health Nurse Practitioner knowledge concerning care standards, antipsychotic medications, and the identification of extrapyramidal symptoms. Thus, interventional education expanded PMHNP knowledge and thought processes related to AIMS testing and extrapyramidal symptoms to meet current care practice standards.

In subsequent steps, addressing the devised research question, the researcher collected, analyzed, and synthesized research data related to the topic. With sufficient evidence, the gradual implementation of the study design was trialed in the clinical setting, as supportive education is provided to the new Psychiatric-Mental Health Nurse Practitioners. Given the trial findings,

under the Iowa Model, it was then determined that sufficient data exists to support the integration of the research findings into clinical standards. The results can then be disseminated for broader usage if deemed clinically significant. See Appendix G for a copy of the Permission to Use the Iowa Model.

Summary

The literature of this study yielded a strong indication for the creation and maintenance of provider education to occur post-graduation and pre-clinical practice. This includes onboarding education, supportive resources, meetings, and seminars. Additionally, there was an emphasis on increased clinical assessment knowledge and the early recognition of adverse effects, specifically during pre- and post-antipsychotic drug initiation periods, in patients diagnosed with psychotic disorders. Finally, given that antipsychotic medications have several on- and off-label uses in patient care and treatment, the data collected was guided towards psychotic conditions, such as schizophrenia, to narrow the potential broadness of the study. As a result, the data collection process eliminated other treatment uses, such as delirium and anxiety, from the reviewed studies.

Thus, this project increases new Psychiatric-Mental Health Nurse Practitioners' knowledge and compliance regarding Abnormal Involuntary Movement Scale (AIMS) testing. This project further increases the clinical application and comprehension of AIMS testing and its associated data as it applies to preventing, identifying, and managing extrapyramidal symptoms (EPS). This research proves most pertinent when comparing new Providers' EPS development and progression assessments in patients taking antipsychotic medications. Screening for EPS is a care practice standard, which should include AIMS testing. This project will identify trends amongst new Providers' usage of this testing tool, pre- and post-educational intervention.

SECTION THREE: METHODOLOGY

Design

An evidence-based practice quasi-experimental project was conducted and completed for research obtainment purposes, utilizing the Iowa Model Revised: Evidence-Based Practice to Promote Excellence in Healthcare. In congruence with this version of the revised Iowa Model, a pilot study was initiated to progress toward a formal practice change. This process was experimental in construction and execution.

In this project, a group of novice Psychiatric-Mental Health Nurse Practitioners, who recently gained employment with iCare and Associates, LLC, were assessed on their baseline knowledge about Abnormal Involuntary Movement Scale (AIMS) testing. Thus, each Provider was administered a pre-test initially. Upon completion of the test, the providers received a verbal lecture that addressed the topics of clinical recognition practices, specifically AIMS testing, for adverse effects, including extrapyramidal symptoms (EPS). Clinical research data from organizations like the National Institute of Mental Health and the American Psychiatric Association guided lecture information. Both organizations have guided the usage and modification of Abnormal Involuntary Movement Scale (AIMS) testing and associated care practice guidelines, which psychiatric-mental health facilities, testing and licensing authorities, and state and national legislation utilize. In addition, credentialing from the Accreditation Council for Pharmacy Education (ACPE) and the American Association for Psychiatric Pharmacists (AAPP) were optional educational measures that the researcher could have completed concerning AIMS testing and associated information before the formal lecture process was conducted with the Nurse Practitioners.

The lecture coincided with a constructed PowerPoint presentation that provided supportive data and resources related to AIMS testing, associated background knowledge, usage, application, and integration into standard care practice. See Appendix D for a copy of the Abnormal Involuntary Movement Scale (AIMS) PowerPoint Presentation Outline. A teach-back style question-and-answer session subsequently followed the educational lectures. Finally, a post-test was administered immediately after all questions and answers were addressed.

The pre-and post-tests consisted of questions related to AIMS testing knowledge. Approximately ten questions appeared on both pre-and post-tests, as both examinations were identical. The respective scores of both examinations were collected, analyzed, and recorded based on administration periods relative to the interventional education periods. See Appendix E for a copy of the Pre- and Post-Test.

Measurable Outcomes

Measurable outcomes of this study include:

1. Pre-test scores are the examination results of the participating Nurse Practitioners who have not yet received interventional education, as associated with the research study.
2. Post-test scores are the collected examination results of the participating Nurse Practitioners, who have completed the interventional education period, received AIMS testing handouts, and completed the teach-back-style question-and-answer period of the research study.

3. Potential and completed AIMS tests are the cumulative totals of available AIMS documentation occurrences versus those completed and subsequently entered into the Electronic Health Record (EHR) system.

Setting

This research project was conducted at iCare and Associates, LLC, a local private Psychiatric-Mental Health Community Clinic in Metro Atlanta, Georgia. This clinical sight frequently offers preceptorships or new employment to novice Psychiatric-Mental Health Nurse Practitioners with less than one year of experience seeking clinical exposure and expertise. Additionally, given the facility's geographical location along a major state highway, a large suburban and rural population surrounds the facility in every direction. The facility's patient population is vast, ranging from pediatric to gerontological, presenting with conditions ranging from anxiety, depression, psychotic conditions, substance abuse disorders, and more. Therefore, Psychiatric-Mental Health Providers must be proficient in conducting patient care, research, and utilizing resources by maintaining alignment with the facility, state, and national care practice standards.

The Owner and Medical Director of the facility hopes to continue expanding the outreach of iCare and Associates, LLC. A team of dedicated and knowledgeable Psychiatric-Mental Health Nurse Practitioners is needed to accomplish this. The facility has a reputable standing in the community, with a mission focused on decreasing and eradicating the stigmas, biases, and unethical treatment of patients diagnosed with psychiatric-mental health conditions and diseases. As a result, iCare and Associates, LLC frequently receives new patient referrals from the local area and across Metro Atlanta. The current physical location is sufficient to conduct scheduled

encounters, as the facility has a large and diverse in-person and telehealth patient population. Thus, this research project's primary stakeholders will be the Psychiatric-Mental Health Nurse Practitioners, as each Provider requires a confident level of knowledge, clinal judgment, and autonomy to perform their specific duties. See Appendix F for a copy of the Organizational Support Letter for this research project.

Population

The target population of this study is Psychiatric-Mental Health Nurse Practitioners (PMHNP). As a PMHNP, Providers require a certain level of clinical education and expertise to render effective and efficient care services. However, despite this information, there still exists a variation in baseline knowledge related to the potential risks of antipsychotic medications, given the varying competencies set forth by each graduate and post-graduate level program, as well as state and national certification and licensing boards. This is evidenced by research findings, suggesting that AIMS testing implementation is limited amongst new Nurse Practitioners, despite being a supported care practice standard (Mangano et al., 2020). As a result, more research is being conducted to determine the need and implementation of transition and educational support efforts for newly graduated Advanced Practice Providers to bring all care practices to one accord within a specific setting (Urbanowicz, 2019).

Statistics from national surveys have indicated that Nurse Practitioners are significantly more likely to leave a place of employment, in fields such as psychiatric-mental health services, due to factors such as a lack of clinical knowledge, proficiency, and clinical support (Urbanowicz, 2019). However, it has been discovered that the hiring practices of many psychiatric-mental health facilities fall short of providing sufficient refresher and/or supportive

education and resources (Mangano et al., 2020). Given the large patient population that utilizes the facility and the research that details the prevalence rates of adverse effects resulting from antipsychotic medications, a moderate size team of Psychiatric-Mental Health Nurse Practitioners is needed.

Thus, a purposive, convenience sample was utilized to conduct this research study. Inclusion criteria comprised ten Psychiatric-Mental Health Nurse Practitioners who recently received their certification from the American Nurses Credentialing Center (ANCC) and accepted employment or affiliation with iCare and Associates, LLC. Any Nurse Practitioners, who have been practicing, while having their ANCC certification for a year or greater were excluded from the study. Given that iCare and Associates, LLC frequently utilizes the services of Practitioners with less than a year of clinical experience, none of the ten solicited Providers were excluded from participating in the study. The sample size was selected due to the limited number of novice Providers employed or affiliated with the facility. Recruitment was limited to the verbal consent of each employed Provider, as this process served as a supportive aide in their onboarding process. Thus, ten Nurse Practitioners, which accounts for all the novice providers in their entirety, were included in the study and research. Given the current number of new PMHNPs, the sample size was adequate to conduct the research project as determined.

Ethical Considerations

Adequate measures were taken and executed to protect all research participants from suspected, potential, or actual harm in the form of physical, mental, and emotional distress before, during, during, and post-conduction of all research study practices. These efforts came from the guidance of complete research ethics training measures, which focused on protecting all

human participants associated with the study. Further, this research project was formally submitted to Liberty University's Institutional Review Board (IRB) for review and subsequent approval for conduction. See Appendix B for a copy of the Research Study Conduction Approval Letter from Liberty University's Institutional Review Board (IRB).

Each participant in the research study provided verbal consent for participation and written consent in the form of a signed authorization letter. Research data, findings, and participant-specific identifiers were held strictly confidential from the observation, use, or potential exploitation by anyone outside of the research conduction team. In addition, the research participants were made aware that their involvement was on a volunteer basis, with the ability to withdraw from the study without fear, penalty, or prejudice. See Appendix C for a copy of the Collaborative Institutional Training Initiative (CITI) Certificate. See Appendix I for a copy of the Study Participant Authorization/Consent Form.

Data Collection

Before the data collection process was initiated, the researcher and the Project Chair completed all associated research ethics training courses. Thus, data collection in this research project was conducted in two stages. Stage one consisted of the pre-test, where each Provider will answer test questions related to baseline knowledge of AIMS testing, including use, frequency, and scoring. The scores from the pre-test were calculated and recorded by the researcher, based on an answer key, upon completion of the assessment. Stage two of the data collection came in the form of a post-test. During this assessment, the providers answered questions related to AIMS testing knowledge, given that formal education took place before administering the assessment. Therefore, the scores from the post-test were treated like the pre-

test data collection process. Additionally, completed AIMS testing tools and Electronic Health Record (EHR) charting were reviewed to determine the number of times that AIMS testing was used during practice, post-intervention, versus pre-interventional education. Upon conclusion of each of these measures, the researcher collected all data to be categorized and recorded.

Tools

In assessing and identifying the incidence of adverse effects, such as extrapyramidal symptoms, in patients taking antipsychotic medications, Abnormal Involuntary Movement Scale (AIMS) testing proves to be a leading tool of application. The AIMS test is a provider tool utilized to detect the presence of adverse symptoms such as tardive dyskinesia, a form of extrapyramidal symptoms which develops because of antipsychotic medication usage (Kane et al., 2018). In addition, this testing modality can be further utilized to scale and grade the progressive development of these symptoms and potentially subsequent conditions (Kane et al., 2018).

AIMS testing was first developed and designed during the 1970s by the Psychopharmacology Research Branch within the National Institute of Mental Health (Stacy et al., 2019). Thus, it was created to improve patient care measures and provider care practices (Stacy et al., 2019). Through the years, this tool has been refined to become more inclusive of discovered adverse effects, such as various extrapyramidal symptoms, as treatment measures have evolved with new and old antipsychotic medications (Stacy et al., 2019). This is particularly useful, given that current research suggests that roughly twenty to thirty percent of patients with psychotic conditions, who take antipsychotic medications, develop some form of tardive dyskinesia and other associated extrapyramidal symptoms (Stacy et al., 2019).

Usage of this tool during the research and testing process of this study was exceptionally beneficial, as there exists a recurring issue with clinical recognition and management of extrapyramidal symptoms, such as tardive dyskinesia, amongst novice and newly employed Psychiatric-Mental Health Nurse Practitioners (Stacy et al., 2019). In addition, preliminary literature reviews have indicated the existence of supportive research studies related to integrating AIMS testing into care practice standards (Stacy et al., 2019). With a roughly ten-minute duration, AIMS testing consists of ten symptom-specific questions that coincide with an assigned grading scale, ranging from 0 to 4 (Kane et al., 2018). Clinical providers can apply these scores to five body regions and their associated movements, using the following breakdown: None: 0, Minimal: 1, Mild: 2, Moderate: 3, and Severe: 4 (Kane et al., 2018). Questions eleven through fourteen of this testing tool require direct responses from the patient being tested regarding various movements, assistive devices, and periods of sleep (Kane et al., 2018).

Significant clinical evidence and research data support AIMS testing usage by researchers and clinical providers (Kane et al., 2018). Thus, the validity and reliability of this testing tool are highly regarded in clinical applicability, which is reflected in the standard scoring and diagnoses of patients' symptoms using this resource (Kane et al., 2018). Scores of two (mild) or more on a specific question suggest evidence of tardive dyskinesia (Kane et al., 2018). Suppose a patient presents with mild tardive dyskinesia in two or more body regions or moderate tardive dyskinesia in one bodily region. In that case, the diagnosis of tardive dyskinesia, a form of extrapyramidal symptoms, should be applied (Kane et al., 2018). Scores were not shared with the patient (Kane et al., 2018). However, suppose a formal diagnosis of extrapyramidal symptoms (tardive dyskinesia) is to be made. That diagnosis can be shared with the patient, as

the patient's treatment plan will require modifications (Kane et al., 2018). See Appendix H for a copy of the Abnormal Involuntary Movement Scale (AIMS).

Intervention

The clinical sight, iCare and Associates, LLC, has consistently hired newly boarded, novice expertise Psychiatric-Mental Health Nurse Practitioners. This hiring process has allowed these providers to gain the clinical knowledge and exposure necessary to be proficient in their duties. Additionally, these practices have existed to expand services available for the vast patient population that surrounds and utilizes the facility. However, there has been a consistent concern regarding the providers' abilities to meet care practice standards, such as those specified by the American Psychiatric Association Practice Guideline for the Treatment of Patients with Schizophrenia, concerning antipsychotic medications and their associated adverse effects (Gamón et al., 2021). The focal concern is the variation in didactic knowledge and its application, regarding AIMS testing, between the various providers' graduate and post-graduate programs, versus state and national certification and licensing bodies, as well as the facility's care practice standards.

In fact, this is a growing concern in many clinical settings, as the number of psych-mental patients continues to expand rapidly, as the number of prepared providers pales in comparison to the current and projected needs of the near future. Thus, numerous research studies encourage continually modifying graduate and post-graduate curricula to meet the expanding needs of Advanced Practice Providers and various practice settings (Mangano et al., 2020). However, this same research highlights the issue of evolving education and teaching practices when applied to new Nurse Practitioners concerning their post-graduate functionality, the applicability of

knowledge, care proficiency, and future success (Mangano et al., 2020). As a result, there is a general call for supportive knowledge and resources post-program completion to aid these professionals in role transition and facility acclimation (Mangano et al., 2020).

Thus, each newly employed or affiliated Psychiatric-Mental Health Nurse Practitioner, who received their board certification within the last year, was asked for verbal consent to engage in this training and research process. This research project serves as an onboarding and supportive educational training to be utilized post-graduation, post-certification, and post-licensing for these newly employed, novice providers. Institutional Review Board (IRB) approval was obtained from Liberty University through a formal letter and application with supporting documentation. The researcher was the primary conductor of the supportive education, including creating and presenting the evidence-based PowerPoint presentation, providing AIMS testing handouts including instructions, and guiding the question-and-answer period with the provision of evidence-based data. As a result, an official training process was not required. Additionally, the researcher also conducted the administration, collection, scoring, and outcomes evaluation of the pre-and post-tests.

Once all interventional education was completed, the AIMS testing totals were calculated weekly using embedded filtering systems within the EHR. In addition, weekly totals for EHR documentation were calculated to a cumulative total at the end of the research project.

Timeline. The research project was conducted to streamline the assessment and intervention processes, alleviating significant time gaps between assessments, education, questions, answers, and implementation. First, a formal application with supportive documentation was submitted to Liberty University's Institutional Review Board (IRB). Upon acceptance and approval of the submitted project proposal, a collective list of newly employed and newly licensed Psychiatric-Mental Health Nurse Practitioners was obtained from the facility. From that list, a verbal confirmation and agreement to participate in the research study was obtained from each Provider. That verbal confirmation was followed by a written consent to sign and return within two days.

Once each Provider gave their verbal consent, the written consent forms were distributed and collected within the allotted time frame before being subsequently placed on file. Afterward, a date within that week was selected, and each novice provider was administered a pre-test. The pre-tests were scored, with the grades recorded and held by the researcher. A PowerPoint and associated lecture were presented to the same providers within a few hours of the pre-test administration. During the PowerPoint presentation, AIMS testing handouts were given to each Provider to coincide with its appropriate placement in the lecture. The teach-back style question-and-answer period began immediately after the lecture and PowerPoint presentation was completed. The session concluded once all questions were addressed and answered.

The post-test was administered immediately following the question-and-answer period. The assessments were graded, with the scores recorded and kept separately from the pre-test scores previously obtained. The first workday of the following week began the timeline of the pilot study intervention. For the pilot study, each Provider documented AIMS testing information in the Electronic Health Record (EHR) system daily, with weekly summations calculated on the

last day of that work week. Cumulative summations were calculated after the six-week study period as well.

After the six-week data collection period, the research information was submitted to a statistician for deciphering and analysis. Once the process was completed, the numerical values and findings were returned to the researcher. The statistician constructed line graphs depicting the findings. These graphs detailed pre-and post-test scores, associated averages, and potential versus completed AIMS testing documentation values. Lastly, the statistician completed the necessary paired t-test calculations, providing further numerical breakdowns such as the P-value, variances, and correlations to determine statistical significance.

Feasibility. The inability to complete this research project was minimal, as the researcher conducted much of the project. Resources needed to conduct the project included AIMS handouts, a conference room, printed consents, printed pre-tests, printed post-tests, a laptop computer with Microsoft PowerPoint, and a digital projector. The budget was equally minimal, as resources, data collection, and data analysis did not require extensive statistics and calculations.

Data Analysis

The data analysis process included Microsoft Excel spreadsheets and line graphs, with statistical analyses in the form of a paired t-test and a subsequent p-value. The first spreadsheet contained the various pre-test scores and the cumulative average of those tests. The second spreadsheet contained the various post-test scores and the cumulative average of those assessments. The third spreadsheet contained the weekly and cumulative totals of AIMS testing tools that each Provider completed. Regarding the line graphs, the first depicts the variations

between the pre-test scores and their associated average. In contrast, the second line graph depicts the variations between the post-test scores and their associated average. The third line graph depicts the weekly totals of testing tools that could have been completed per Provider and the actual cumulative totals. The paired t-test determined variations in the collected data, while the p-value indicated the presence or absence of clinical significance concerning the findings.

Pre-Test Scores. Pre-test answers were assessed based on a completed answer key. Subsequent scores were calculated and assigned to each test based on the number of questions answered correctly.

Post-Test Scores. Post-test answers were based on a completed answer key. Subsequent scores were calculated and assigned to each test based on the number of questions answered correctly.

AIMS Testing Tools. At the conclusion of each work week, the number of AIMS documentation completed within the Electronic Health Record (EHR) system was totaled per Provider and collectively as a group. This documentation process was utilized to assess patients diagnosed with psychotic-mental health conditions, such as schizophrenia and schizoaffective disorder, who were also prescribed antipsychotic medications. Though antipsychotics can be utilized for various psychiatric-mental health conditions, this study focuses on antipsychotics for their primary prescribed focus, which is the treatment of psychotic disorders. No patient information or identifiers were provided or utilized with electronic documentation. Each Provider was assigned a specific alpha-numeric identifier to make them recognizable only to the researcher. The number of electronic documentation occurrences of AIMS testing was assigned to each PMHNP based on their associated identifier. Additionally, no individual who was not explicitly involved in the research data collection or analysis process had access to any of the information collected or processed.

Each week, the number of electronic documentation occurrences of AIMS testing per Provider was totaled. These numbers were collected and recorded to compare data based on weekly totals per Provider. Given the expansiveness and acuity level of patient loads per Provider, each PMHNP recorded their AIMS testing process and results in the facility's Electronic Health Record (EHR) system versus completing physical AIMS testing worksheets. The current EHR did not allow for the individualized selection and collective summation of AIMS testing entries. Instead, a collective total of patients prescribed antipsychotics was gathered and subsequently filtered based on a more in-depth chart review, which involved search bar inquiries and checkbox selections. This process was chosen to bypass barriers such as misplacement, inability to complete, or omission of submitting a physical AIMS worksheet. At the conclusion of the pilot study, the total number of AIMS testing documentation entries per Provider was totaled based on the collective weeks.

SECTION FOUR: RESULTS

During the conduction of this research study, a total of ten novice Psychiatric-Mental Health Nurse Practitioners were engaged in their participation. Of the ten Nurse Practitioners, who were provided verbal and written consent regarding the research project, one hundred percent or all ten Nurse Practitioners returned their written consents and subsequently participated in the research study. Each of these Psychiatric-Mental Health Nurse Practitioners were classifiable as novice Providers, given that each had only received their certification to practice and had physically practiced as Nurse Practitioners within the last year or less. In a further consistent fashion, over the six-week research period, each Provider returned weekly data that aligned with preliminary assumption tests, yielding concludable research data analyses.

The data analyses of the research study were computed using paired t-test calculations. The paired t-test was selected as the data calculation and analysis method, as paired t-testing is mathematically utilized to examine hypotheses to determine the difference between means of various data sets (Mishra et al., 2019). All calculations were performed and verified by a research statistician, who worked closely with the researcher after the data collection. A mean, variance, and correlation were observable from the pre-and post-test scores' compiled data sets. The pre-test scores yielded a mean or average of 68. In contrast, the post-test scores yielded a mean or average of 86. The variance or spread variability in the associated data set for the pre-test scores was 173.3333. At the same time, the variability of spread in the post-test scores was 93.33333. Lastly, Pearson's correlation, or the measure of linear correlation between the two data sets, was -0.68139. See Appendix M for Statistical Analyses and Paired t-Test Results.

Descriptive Statistics

Before initiating the six-week research study period, preliminary testing and subsequent supporting education were conducted. Preliminary testing reflected the pre-test provided to the Nurse Practitioners. Each of the ten providers completed the administered pre-test. After completing the pre-test, AIMS testing education was completed, with one hundred percent participation achieved again. The post-test followed the supportive education period, where each of the ten Nurse Practitioners completed the examination.

The pre-test, AIMS testing education, and post-test were administered and completed over a single, eight-hour workday the week prior to the initiation of the six-week research study conduction period. Thus, education was conducted within one hour of the completion of the pre-test. In comparison, the post-test was administered within one hour of completing the education

and question-and-answer period. One hour was allotted to complete the pre-test, with a separate hour to complete the post-test, while the AIMS testing education was completed over four hours total. Cumulative averages of the completed pre-and post-test scores were calculated and recorded based on each respective test.

At the beginning of the following work week, the research study period began, lasting a total of six weeks. The final day of each work week resulted in summations of each Provider's potential and completed AIMS documentation in the Electronic Health Record (EHR) system. Totals for potential and completed tests were tallied individually for each Provider and collectively for the group. Upon completion of the six-week study period, final summations were completed based on the duration of the study period.

Pre-Test Scores

A total of ten pre-tests were administered and completed by ten novice Psychiatric-Mental Health Nurse Practitioners. Each Practitioner is employed or affiliated with iCare and Associates, LLC. Each examination consisted of ten test questions, with valuations of ten points each. The maximum score on the pre-test was one hundred points, while the minimum score on the pre-test was zero points. Of the completed examinations, scores ranged from fifty to ninety points individually, with an average group score of sixty-eight points. At the time of administration, no preliminary teaching, education, and handouts related to AIMS testing had been administered. Thus, the pre-tests were completed based solely on the Provider's self-obtained introductory knowledge. See Appendix J for the Pre-Test Scores and Cumulative Average line graph.

Post-Test Scores

A total of ten post-tests were administered and completed by the same ten novice Psychiatric-Mental Health Nurse Practitioners. All the associated Providers participating in the study are employed or affiliated with iCare and Associates, LLC. Each examination consisted of ten test questions, with valuations of ten points each. The maximum score achievable on the post-test was one hundred points, while the minimum score achievable on the post-test was zero. Of the completed examinations, scores ranged from seventy to one hundred points individually, with an average group score of eighty-six points. At the time of administration, supportive teaching, education, and handouts related to AIMS testing had been administered prior, and a teach-back style question-and-answer period further supported this education and the associated resources. Thus, the post-tests were completed based on the Providers' abilities to review the information and achieve clarity for clinical application. See Appendix K for the Post-Test Scores and Cumulative Average line graph.

Potential and Completed AIMS Tests

Throughout the six-week research study period, the Electronic Health Record (EHR) system was routinely checked at the conclusion of each work week for the summation totals of potential and completed AIMS documentation. This six-week research study period came after the administration of the pre-test, supportive education related to AIMS testing, and the administration of the post-test. The two categories of summations were collected on individual bases per Nurse Practitioner. After the study period, each week's collective totals were entered onto a line graph to reflect the variations in totals.

Data collection from the Electronic Health Record (EHR) system was based on search bar results, guided by keyword entries and programmed filtrations from activating specific checkboxes. All search efforts were manually set parameters, which were specified within the computerized system. These filters were used to determine the potential versus the actual number of AIMS testing documentation occurrences to be completed weekly by each Provider. The filters and searches were based upon prescribed antipsychotic medications or diagnoses of psychotic conditions, as documented within the EHR, using specific phrases such as AIMS testing and psychotic condition. The results returned were providers' actual AIMS assessments and patients' charts with documented diagnoses such as schizophrenia. No further provider documentation needed to be reviewed, as the search results yielded all assessments labeled for AIMS usage. As a result, actual occurrence numbers that exceeded the number of possible occurrences reflect a more significant number of actual AIMS tests completed and documented, thus, reflecting an identifiable increase in AIMS testing usage.

Based on the collected data, week one yielded forty-six potential AIMS testing documentation opportunities, with forty-seven entries recorded. Week two yielded forty-nine testing opportunities, with forty-seven AIMS tests completed. Week three allowed fifty documentation occurrences, with fifty-three entries being listed. Week four provided a minimum of fifty-eight documentation opportunities and yielded exactly fifty-eight. Week five allowed fifty-five documentation periods, and sixty were recorded. Lastly, week six yielded an opportunity for fifty-two entry occurrences, while fifty-five AIMS tests were completed. Again, actual occurrence numbers that exceeded the number of possible occurrences reflect a greater number of actual AIMS tests completed and documented, thus, reflecting an identifiable increase in AIMS testing usage. While conversely, a larger number of possible documentation

occurrences reflects the number of AIMS documentation opportunities existing which were not fulfilled. See Appendix L for the line graph of Potential vs. Completed AIMS Tests.

SECTION FIVE: DISCUSSION

Implication for Practice

Upon completion of the analyses, the paired t-test results indicated a statistically significant difference in the mean test scores, as reflected by pre- and post-educational intervention.

A p-value of 0.024 further supports this notion, indicating findings at the five percent significance level. The null hypothesis may be rejected after comparing this data to the findings associated with the line graph, which details the potential versus completed AIMS tests. Thus, based on the samples collected, enough numerical evidence exists to suggest that the completion of AIMS testing maintained or exceeded projected weekly values upon providing Provider-associated educational teachings and intervention. See Appendix M for Statistical Analyses and Paired t-Test Results.

These findings prove imperative to clinical practice and application, as organizations such as iCare and Associates, LLC render and maintain the clinical well-being of a vast and diverse population of patients who are prescribed antipsychotic medications for psychotic conditions. In addition, information of this nature is equally important to the public, given that current research data suggests that routine AIMS testing is a part of care practice standards, which should be upheld and utilized by all Psychiatric-Mental Health Providers (Kane et al., 2018). As it stands, the researcher did not identify any research biases associated with this topic or project. However, the identifiable limitations of the study included the sample size of Nurse

Practitioners and the number of facilities utilized to complete the research study. Further, the research findings stand to alter slightly, with the administration of the post-test after the data collection period versus after the completion of the interventional education. This assumption is supported by current research, which implies that post-test scores may increase or decrease with the later administration of the post-test versus within an hour of the completion of the interventional education, as time may affect retention and knowledge application (Latimier et al., 2019).

Sustainability

This research project was conducted to serve as a standard practice aid to novice Psychiatric-Mental Health Nurse Practitioners at iCare and Associates, LLC. Execution of this research project was reflective of the primary Provider population employed or associated with iCare and Associates, LLC, which services Metropolitan Atlanta, Georgia. Thus, the sustainability of this practice change aid retains a high probability of consistency, given the knowledge and resources needed to provide services to the broad range of patients treated in that region. Probability further increases, given the inexpensiveness, ease of access, and relatively short execution period needed to implement AIMS testing (Kane et al., 2018). Further, given the facility's long history of evidence-based progression, adaptation, and consistency, the Owner and Management of iCare and Associates, LLC has emphasized this practice change as a high priority.

Dissemination Plan

Plans to disseminate the research data and findings include onboarding education for novice Psychiatric-Mental Health Nurse Practitioners employed or affiliated with iCare and Associates, LLC. Each new Provider will receive a formal pre-and post-test, a lecture with handouts, and a teach-back style question-and-answer period. The pre-test will be administered to onboarding Providers to test their prior clinical knowledge and awareness of AIMS testing post-graduation and post-certification. The intent is to increase engagement in the AIMS testing process by emphasizing AIMS testing's importance in clinical practice through knowledge expansion and evidence-based practice (Latimier et al., 2019). The Owner of iCare and Associates, LLC, has declined to replicate the six-week data collection period utilized in the research study. However, he has reserved the data collection process for future usage if the organization obtains further information about its Providers' performance regarding AIMS testing and its associated documentation in the EHR.

Another dissemination plan includes publishing and distributing the completed research through Liberty University's scholarly resource database. This distribution would also be associated with formally publishing the study and its findings in a scholarly journal. Both platforms would expand the potential reach of the research study so that it may be further replicated or expanded upon by additional researchers and organizations. Lastly, with appropriate approval, the research study can be presented at a conference or gathering to be discussed and further explored in either professional or academic settings of interest.

Appendix

A. Level of Evidence Matrix

B. Research Study Conduction Approval Letter

C. Collaborative Institutional Training Initiative (CITI) Training Certificate

D. Abnormal Involuntary Movement Scale (AIMS) PowerPoint Presentation Outline

E. Pre- and Post-Test

F. Letter of Support from Organization

G. Permission to use the Iowa Model

H. Abnormal Involuntary Movement Scale (AIMS) Testing Tool

I. Participant Consent Form

J. Pre-Test Scores and Cumulative Average

K. Post-Test Scores and Cumulative Average

L. Potential vs. Completed AIMS Tests

M. Statistical Analyses and Paired t-Test Results

Article Title, Author, etc. (Current APA Format)	**Study Purpose**	**Sample (Characteristics of the Sample: Demographics, etc.)**	**Methods**	**Study Results**	**Level of Evidence (Use Melnyk Framework)**	**Study Limitations**	**Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.**
Abu-Naser, D., Gharaibeh, S., Al Meslamani, A. Z., Alefan, Q., & Abunaser, R. (2021). Assessment of Extrapyramidal Symptoms Associated with Psychotropics Pharmacological Treatments, and Associated Risk Factors. *Clinical practice and epidemiology in mental health: CP & EMH*, *17*, 1–7. https://doi.org/10.2174/1745017902117010001	Examine the incidence of drug-induced extrapyramidal symptoms, associated risk factors, and clinical characteristics.	44,777 outpatients, ages 18 years and older, who were prescribed a single antipsychotic medication with the risk of developing extrapyramidal symptoms.	Ten-year, retrospective, non-interventional, longitudinal, observational study.	34,898 patients began treatment with a single, prescribed antipsychotic medication, with the risk of developing extrapyramidal symptoms.	Level 4: Correlational Design	Limitations to the study include the large sample size.	Yes. The information in this article can be used to support change, as the findings related to risk factors associated with antipsychotic medication usage can be used to provide guidance in care management for new PMHNPs.

Article Title, Author, etc. (Current APA Format)	**Study Purpose**	**Sample (Characteristics of the Sample: Demographics, etc.)**	**Methods**	**Study Results**	**Level of Evidence (Use Melnyk Framework)**	**Study Limitations**	**Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.**
Chapman, S. A., Phoenix, B. J., Hahn, T. E., & Strod, D. C. (2018). Utilization and Economic Contribution of Psychiatric Mental Health Nurse Practitioners in Public Behavioral Health Services. *American Journal of preventive medicine*, *54*(6 Suppl 3), S243–S249. https://doi.org/10.1016/j.amepre.2018.01.045	To discuss the utilization of Psychiatric-Mental Health Nurse Practitioners and to identify the barriers that most frequently enable their practice abilities.	One hundred and twelve Psychiatric-Mental Health Nurse Practitioners	Mixed methods approach.	Medication-prescribing practices are a significant component to care and treatment. However, it is burdened by barriers such as role retention, practice knowledge, and oversight.	Level 6: Single descriptive or qualitative study.	Limitations to this study included the small number of facilities visited.	The information from this study can support change by aiding in creating methods to decrease barriers affecting provider practices.
Cooper, R. E., Hanratty, É., Morant, N., & Moncrieff, J. (2019). Mental health professionals' views and experiences of antipsychotic	To aid the views and clinical decision-	Thirty-five psychiatric-mental health	Randomized control trial.	Most providers within the study	Level 2: RCT Experime	Limitations to the study include	Yes. I would use this informatio

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
reduction and discontinuation. *PloS one*, *14*(6), e0218711. https://doi.org/10.1371/journal.pone.0218711	making of psychiatric-mental health providers when adjusting the usage of antipsychotic medication during care and treatment.	providers, who are employed at various psychiatric-mental health facilities. These individuals were split between seven focus groups.		agreed to decrease dosages of prescribed antipsychotics to minimum effective dosages or to discontinue antipsychotic medication prescribing where possible.	ntal Design	the small sample size.	n as evidence to support change, as it can be applied to new psychiatric-mental health providers' assessments of risks versus benefits when prescribing antipsychotics.
Finley, B. A. (2020). Psychiatric Mental Health Nurse Practitioners Meeting Rural Mental Health Challenges. *Journal of the American Psychiatric Nurses*	To assess Psychiatric-Mental Health Nurse Practitioners'	Eighty research studies were conducted between	Retrospective literature review.	There exists statistical significance	Level 5: Systemic Review of Descripti	The limitation of this study is the	Yes. The evidence of this article can be used to

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
Association, *26*(1), 97–101. https://doi.org/10.1177/1078390319886357	impact on combating psychiatric-mental health disorders in more rural areas.	2010 and 2016.		indicating the need for full provider autonomy and proficient clinical skills to meet the needs of underserved rural populations.	ve and Qualitative Studies	limited range of research articles reviewed.	support change, as it can be used to encourage and guide new PMHNPs, in caring for and managing the adverse effects of various treatment measures.
Kadakia, A., Brady, B. L., Dembek, C., Williams, G. R., & Kent, J. M. (2022). The incidence and economic burden of extrapyramidal symptoms in patients with schizophrenia treated with second-generation antipsychotics in a Medicaid population. *Journal of medical*	To assess the incidence and impact of extrapyramidal symptoms in patients diagnosed	775,977 patients listed in the Marketscan Medicaid Multi-State Database from	A retrospective cohort study.	There exists clinical significance indicating that the presence of	Level 4: Case-Control or Cohort Study.	Limitations to the study include the large sample size.	Yes. The information from this study can be utilized to guide the care practices

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
economics, *25*(1), 87–98. https://doi.org/10.1080/13696998.2021.2019501	with schizophrenia who are taking second-generation antipsychotics.	January 1, 2012, until December 31, 2018, who received a prescription for a second-generation antipsychotic medication.		extrapyramidal symptoms increases associated healthcare costs.			of PMHNPs, decreasing the potential of adverse effects related to treatment modalities and associated costs.
Kane, J. M., Correll, C. U., Nierenberg, A. A., Caroff, S. N., Sajatovic, M., & Tardive Dyskinesia Assessment Working Group (2018). Revisiting the Abnormal Involuntary Movement Scale: Proceedings From the Tardive Dyskinesia Assessment Workshop. *The journal of clinical psychiatry*, *79*(3), 17cs11959.	To provide a history of the Abnormal Involuntary Movement Scale (AIMS) in clinical practice related to tardive	Seven psychiatric-mental health providers were selected by a workshop sponsor based on each	An assessment workshop and focus group was conducted.	AIMS testing proved to be a routine and valid testing modality for tardive dyskinesia.	Level 7: Expert opinion.	Limitations to this study include the small sample size and the absence of testing.	Evidence from this article could be used to support clinical change due to its potential expansive

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
https://doi.org/10.4088/JCP.17cs11959	dyskinesia, with associated guidelines for analyzing AIMS results.	Provider's clinical experience and research background.					ability, involving the clinical expertise and knowledge of more qualified PMH providers.
Kim, D. D., Lang, D. J., Warburton, D., Barr, A. M., White, R. F., Honer, W. G., & Procyshyn, R. M. (2021). Exercise and Worsening of Extrapyramidal Symptoms during Treatment with Long-Acting Injectable Antipsychotics. *Pharmacy (Basel, Switzerland)*, *9*(3), 123. https://doi.org/10.3390/pharmacy9030123	To assess the awareness of symptoms and perpetrators of symptoms post-injectable antipsychotic drug usage.	Six patients diagnosed with schizophrenia, who are treated with long-acting antipsychotic medications.	Randomized control study.	Two of the six patients experienced extrapyramidal symptoms, which worsened because of routine exercise.	Level 2: RCT Experimental Design	Limitations to the study include the small sample size.	Yes. This evidence can support change by guiding PMH providers in recognizing the adverse effects of antipsycho

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
							tic medication usage, particularly actions or substances that could induce these effects.
Lambert, C. (2020). Advanced Practice Registered Nurse Onboarding and Orientation Program. *Journal Of Nursing Practice*, *3*(2), 253–267. https://doi.org/10.30994/jnp.v3i2.89	To assess orientation programs and formal orientation processes, as compared to current APRN orientation practices, that may improve	Six actively practicing Advanced Practice Providers with less than one to five years of clinical experience.	Onboarding and orientation practices were conducted using a competency tool: pre-and post-tests.	The assessed changes were not statistically significant based on the increased p-values.	Level 3: Quasi-Experimental Design	Limitations to the study include the small sample size.	Yes, the information from this article can be used to support a change, as newly practicing PMH providers need supportive

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
	APRN competence and care delivery.						measures when making clinical decisions.
Misdrahi, D., Tessier, A., Daubigney, A., Meissner, W. G., Schurhoff, F., Boyer, L., Godin, O., Bulzacka, E., Aouizerate, B., Andrianarisoa, M., Berna, F., Capdevielle, D., Chereau-Boudet, I., D'Amato, T., Dubertret, C., Dubreucq, J., Faget-Agius, C., Lançon, C., Mallet, J., Passerieux, C., … FACE-SZ (FondaMental Academic Centers of Expertise for Schizophrenia) Group (2019). Prevalence of and Risk Factors for Extrapyramidal Side Effects of Antipsychotics: Results from the National FACE-SZ Cohort. *The journal of clinical psychiatry*, *80*(1), 18m12246.	To assess the prevalence of extrapyramidal symptoms in schizophrenic patients.	Six hundred seventy-four outpatient schizophrenic patients.	Meta-analysis of randomized clinical trials.	Roughly thirteen percent of participants presented with drug-induced parkinsonism symptoms, while roughly eight percent presented with tardive dyskinesia.	Level 1: Systematic Review and Meta-Analysis of Randomized Controlled Trials	Limitations to the study include the large sample size.	Yes. The evidence from this study can be used to support change, as it can guide PMH providers in recognizing the adverse effects of antipsychotic

Article Title, Author, etc. (Current APA Format)	**Study Purpose**	**Sample (Characteristics of the Sample: Demographics, etc.)**	**Methods**	**Study Results**	**Level of Evidence (Use Melnyk Framework)**	**Study Limitations**	**Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.**
https://doi.org/10.4088/JCP.18m12246							medications early.
Pringsheim, T., Doja, A., Belanger, S., Patten, S., & Canadian Alliance for Monitoring Effectiveness and Safety of Antipsychotics in Children (CAMESA) guideline group (2011). Treatment recommendations for extrapyramidal side effects associated with second-generation antipsychotic use in children and youth. *Pediatrics & child health*, *16*(9), 590–598.	To guide psychiatric-mental health providers when clinically managing extrapyramidal side effects because of second-generation antipsychotic medication usage in children.	Ten randomized controlled trials (RCTs).	A meta-analysis of published literature, expert interviews, and discussion panels.	Clinical evidence supports increased physical examination frequency among children taking prescribed antipsychotic medication.	Level 1: Systematic Review and Meta-Analysis of Randomized Controlled Trials	The limitation of this study is the scarcity of supportive pediatric research data available for analysis and application.	Yes. This information can be used as evidence to support change, as it can be used to modify provider treatment modalities for high-risk populations, such as children and adolescents.

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
Ricciardi, L., Pringsheim, T., Barnes, T., Martino, D., Gardner, D., Remington, G., Addington, D., Morgante, F., Poole, N., Carson, A., & Edwards, M. (2019). Treatment Recommendations for Tardive Dyskinesia. *Canadian Journal of Psychiatry. Revue canadienne de psychiatrie*, *64*(6), 388–399. https://doi.org/10.1177/0706743719828968	To provide clinical recommendations for practice use in treating tardive dyskinesia.	One hundred and fifty research articles were obtained from Medline and CENTRAL's search databases.	A systematic review of studies.	Clinical significance existed to support the limitation of antipsychotic medications, using minimally effective dosages and decreasing the duration of therapies.	Level 5: Systematic review of descriptive and qualitative studies.	Limitations of this study included the number of research databases utilized to obtain research articles.	This information can be utilized to support change, as it can be used to compare the research findings and application practices of multiple research studies of a similar nature.
Roiter, B., Pigato, G., & Antonini, A. (2020). Prevalence of Extrapyramidal Symptoms in Inpatients with Severe Mental	To assess the prevalence of extrapyramid	285 patients at an inpatient psychiatric-	Two monocentric, observatio	Approximately fifty percent of the study	Level 5: Systematic Review of	Limitations of this study include	The evidence from this article

Article Title, Author, etc. (Current APA Format)	**Study Purpose**	**Sample (Characteristics of the Sample: Demographics, etc.)**	**Methods**	**Study Results**	**Level of Evidence (Use Melnyk Framework)**	**Study Limitations**	**Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.**
Illnesses: Focus on Parkinsonism. *Frontiers in neurology*, *11*, 593143. https://doi.org/10.3389/fneur.2020.593143	al symptoms in psychiatric-mental health patients, including the clinical outcome of the same patients with Parkinsonian symptoms.	mental health facility.	nal studies: Cross-Sectional and Prospective Studies.	population demonstrated extrapyramidal symptoms, notably tremors, post antipsychotic medication usage. Thirteen percent demonstrated Parkinsonian symptoms.	Descriptive and Qualitative Studies	the location of the research, as it is confined to one setting.	could be utilized to support change, as it could be used to highlight the increased prevalence of extrapyramidal symptoms for new PMH providers.
Stacy, M., Sajatovic, M., Kane, J. M., Cutler, A. J., Liang, G. S., O'Brien, C. F., & Correll, C. U. (2019). Abnormal involuntary	To determine a minimally clinically significant	Three hundred and fifty patients were	Six-week, randomized, double-blind,	An AIMS testing score shift of two or	Level 2: One or more randomiz	A limitation of this study	The evidence of this article

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
movement scale in tardive dyskinesia: Minimal clinically important difference. *Movement disorders: official journal of the Movement Disorder Society*, *34*(8), 1203–1209. https://doi.org/10.1002/mds.27769	variation in tardive dyskinesia using AIMS testing.	diagnosed with tardive dyskinesia symptoms.	placebo-controlled trials.	more points in a decreasing direction may be clinically significant in diagnosing tardive dyskinesia.	ed controlled trials.	includes its large sample size.	could be utilized to support change, as it can be used to further score the significance of small changes, which majorly impact treatment prognoses.
Tomlinson, E. J., Rawson, H., Manias, E., Phillips, N., Darzins, P., & Hutchinson, A. M. (2021). Factors associated with the decision to prescribe and administer antipsychotics for older people with delirium: a qualitative descriptive study. *BMJ open*, *11*(7), e047247.	To assess the clinical decision-making abilities of psychiatric-mental health	Forty-two psychiatric-mental health providers were separated into six	A qualitative descriptive study.	The most significant concern of the study population was patient safety when	Level 6: Single Descriptive or Qualitative Study	Limitations to the study include the small sample size.	Yes. The evidence of this study can be used to support change, as this

Article Title, Author, etc. (Current APA Format)	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
https://doi.org/10.1136/bmjopen-2020-047247	providers in prescribing and administering antipsychotic medication amongst older patients who have experienced delirium.	focus groups.		prescribing and administering antipsychotics for symptom management.			information can provide insight when educating new PMH providers about patient care and safety measures.
Weng, J., Zhang, Y., Li, H., Shen, Y., & Yu, W. (2019). Study on risk factors of extrapyramidal symptoms induced by antipsychotics and its correlation with symptoms of schizophrenia. *General psychiatry*, *32*(1), e100026. https://doi.org/10.1136/gpsych-2018-100026	To explore the extrapyramidal symptoms (EPS) caused by antipsychotic medications used for schizophrenia treatment.	Six hundred and seventy-nine patients were diagnosed with schizophrenia.	Correlational analysis was performed using tools such as AIMS testing to compare EPS	Antipsychotic medication that is prescribed over more extended periods, with higher D2 receptor	Level 4: Case-control or cohort study.	The major limitation of this study is the large sample size.	This information can be applied to affect change through its application to treatment manageme

Article Title, Author, etc. (Current APA Format)	**Study Purpose**	**Sample (Characteristics of the Sample: Demographics, etc.)**	**Methods**	**Study Results**	**Level of Evidence (Use Melnyk Framework)**	**Study Limitations**	**Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.**
			development and symptoms between two cohort groups.	antagonism, leads to diagnosable and recurring EPS.			nt and medication modifications.

Research Study Conduction Approval Letter

[External] IRB-FY22-23-725 - Initial: Non-Human Subjects Research

do-not-reply@cayuse.com <do-not-reply@cayuse.com>
Wed 1/25/2023 3:36 PM
To:Porter, Mesiah O'Mar <[redacted]>;Walker, Sherri (Doctoral Nursing) <[redacted]>

You don't often get email from do-not-reply@cayuse.com. Learn why this is important

[EXTERNAL EMAIL: Do not click any links or open attachments unless you know the sender and trust the content.]

LIBERTY UNIVERSITY.
INSTITUTIONAL REVIEW BOARD

January 25, 2023

Mesiah Porter
Sherri Walker

Re: IRB Application - IRB-FY22-23-725 ASSESSING AND STRENGTHENING NEW PROVIDER EDUCATION RELATED TO EXTRAPYRAMIDAL SYMPTOMS AND ANTIPSYCHOTIC MEDICATION USAGE

Dear Mesiah Porter and Sherri Walker,

The Liberty University Institutional Review Board (IRB) has reviewed your application in accordance with the Office for Human Research Protections (OHRP) and Food and Drug Administration (FDA) regulations and finds that your study does not meet the definition of human subjects research. This means you may begin your project with the data safeguarding methods mentioned in your IRB application.

Decision: No Human Subjects Research

Explanation: Your project is not considered human subjects research because it will consist of quality improvement activities, which are not "designed to develop or contribute to generalizable knowledge" according to 45 CFR 46. 102(l).

Please note that this decision only applies to your current application. Any modifications to your protocol must be reported to the Liberty University IRB for verification of continued non-human subjects research status. You may report these changes by completing a modification submission through your Cayuse IRB account.

Also, although you are welcome to use our recruitment and consent templates, you are not required to do so. **If you choose to use our documents, please replace the word *research* with the word *project* throughout both documents.**

If you have any questions about this determination or need assistance in determining whether possible modifications to your protocol would change your application's status, please email us at irb@liberty.edu.

Research Study Conduction Approval Letter

Sincerely,

G. Michele Baker, MA, CIP
Administrative Chair of Institutional Research
Research Ethics Office

Collaborative Institutional Training Initiative (CITI) Training Certificate

CITI PROGRAM

Completion Date 25-Sep-2022
Expiration Date 24-Sep-2025
Record ID 51738020

This is to certify that:

Mesiah Porter

Not valid for renewal of certification through CME.

Has completed the following CITI Program course:

Biomedical Research - Basic/Refresher
(Curriculum Group)
Biomedical & Health Science Researchers
(Course Learner Group)
1 - Basic Course
(Stage)

CITI
Collaborative Institutional Training Initiative

Under requirements set by:

Liberty University

Verify at www.citiprogram.org/verify/?wb6c519c0-7269-4803-9de4-9ed8831a7f77-51738020

Abnormal Involuntary Movement Scale (AIMS) PowerPoint Presentation Outline

5/10/23

1 **ABNORMAL INVOLUNTARY MOVEMENT SCALE (AIMS)**
Liberty University: Department of Nursing
Project Chair: Dr. Sherri Walker
PMHNP DNP Student: Mesiah Porter, Jr.

2 **WHAT IS AIMS TESTING?**

3 **HISTORY OF AIMS**

4 **USAGE**

5 **SCORING & GRADING**

6 **PRACTICE INTEGRATION**

7 **REFERENCES**

Pre- and Post-Test

Examination

This examination was designed to test the knowledge and related skills associated with the recognition of extrapyramidal symptoms (EPS). Please read each question carefully, as you may only select one answer choice as your final submission.

1. A patient presents to you while experiencing the following symptoms – Pacing, restlessness, and continuous, uncontrolled movements – He or she is experiencing what condition?
    A. Dystonia
    B. Akathisia
    C. Tardive Dyskinesia
    D. Pseudoparkinsonism

2. _____ is an irreversible symptom?
    A. Akathisia
    B. Tardive Dyskinesia
    C. Pseudoparkinsonism
    D. Dystonia

Pre- and Post-Test

3. Of the conditions provided, which best describes a patient who is experiencing an acute, sustained contraction of their muscles, specifically of the head and neck region, with eye rolling, and facial grimacing?

    A. Pseudoparkisonism

    B. Akathisia

    C. Dystonia

    D. Tardive Dyskinesia

4. The provided image best depicts which clinical condition?

    A. Dystonia

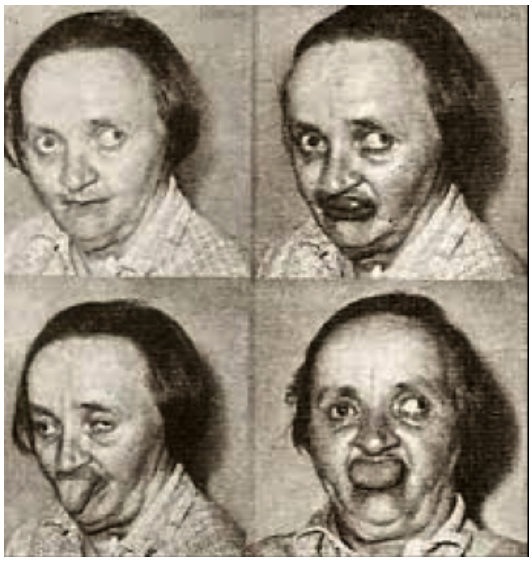
    B. Pseudoparkinsonism

    C. Tardive Dyskinesia

    D. Akathisia

Pre- and Post-Test

5. The provided image best depicts which clinical condition?



   A. Dystonia
   B. Pseudoparkinsonism
   C. Tardive Dyskinesia
   D. Akathisia

6. _____ typically begins within minutes to days, upon administration of an antipsychotic medication?

   A. Dystonia
   B. Tardive Dyskinesia
   C. Akathisia
   D. Pseudoparkinsonism

Pre- and Post-Test

7. _____ can be recognized within minutes to hours once antipsychotic medications are initiated?

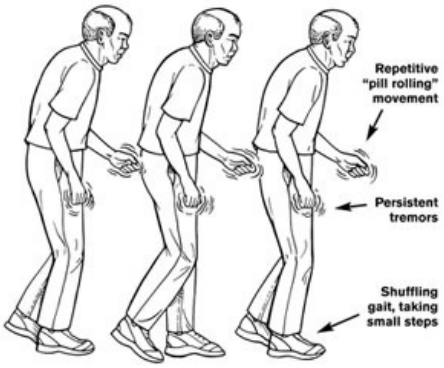
    A. Akathisia

    B. Pseudoparkinsonism

    C. Dystonia

    D. Tardive Dyskinesia

8. A patient presents to you while experiencing the following symptoms – Bradykinesia, tremors, muscle rigidity, a shuffling gait, and a pill-rolling motion of the fingers – The patient is most likely experiencing what condition?



    A. Tardive Dyskinesia

    B. Akathisia

    C. Dystonia

    D. Pseudoparkinsonism

Pre- and Post-Test

9. A patient presents to you with adverse effects related to the long-term usage of antipsychotic medications, which were prescribed to affect dopamine receptors, resulting in involuntary movements of their limbs, tongue, and facial muscles. What is this condition known as?
    A. Akathisia
    B. Dystonia
    C. Pseudoparkinsonism
    D. Tardive Dyskinesia

10. _____ typically begins within days or weeks following the administration of an antipsychotic medication?
    A. Pseudoparkinsonism
    B. Akathisia
    C. Tardive Dyskinesia
    D. Dystonia

Letter of Support from Organization

Organizational Support Letter

I, Dr. Jamil Davis, PhD(c), DNP, FNP-C, PMHNP-BC, Medical Director & Owner of iCare and Associates, LLC, grant permission to Mesiah Porter, Jr., DNP (c), FNP-BC, PMHNP (c), a Doctorate of Nursing Practice: Psychiatric-Mental Health Student, enrolled in Liberty University's College of Nursing, to conduct research and to complete the Quality Improvement Project, Assessing and Strengthening New Provider Education Related to Extrapyramidal Symptoms and Antipsychotic Medication Usage.

This research project serves to address the prescribing practices, symptom recognition, and subsequent care management issues of newly licensed, on-boarding Psychiatric-Mental Health Nurse Practitioners, in reaching compliance with care practice standards, as it pertains to the topics of psychotic mental health conditions, antipsychotic medications, and adverse effects including associated extrapyramidal symptoms. Using pre and post assessment tools, as well as supportive educational teachings and resources, provider baseline knowledge, intermediate knowledge, as well as post-intervention knowledge will be assessed and evaluated.

Assessments, both pre and post, will consist of a pre-determined number of subject relevant questions, pertaining to antipsychotic medications and clinical presentations of adverse effects. Educational teachings and resources will be provided in the form of lecturing, PowerPoint Presentations, Abnormal Involuntary Movement Scale (AIMS) handouts, as well as teach-back style question-and-answer periods.

[redacted]

Owner & Medical Director

09/28/2022

Date

Permission to Use the Iowa Model

Permission to Use The Iowa Model Revised: Evidence-Based Practice to Promote Excellence in Health Care

Kimberly Jordan - University of Iowa Hospitals and Clinics <survey-bounce@survey.uiowa.edu>
Tue 8/23/2022 11:44 AM
To: Porter, Mesiah O'Mar <[redacted]>

You have permission, as requested today, to review and/or reproduce *The Iowa Model Revised: Evidence-Based Practice to Promote Excellence in Health Care*. Click the link below to open.

The Iowa Model Revised (2015)

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Reference: Iowa Model Collaborative. (2017). Iowa model of evidence-based practice: Revisions and validation. *Worldviews on Evidence-Based Nursing, 14(3), 175-182. doi:10.1111/wvn.12223*

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Please contact UIHCNursingResearchandEBP@uiowa.edu or 319-384-9098 with questions.

Abnormal Involuntary Movement Scale (AIMS) Testing Tool

ABNORMAL INVOLUNTARY MOVEMENT SCALE (AIMS)

Public Health Service
Alcohol, Drug Abuse, and Mental Health Administration
National Institute of Mental Health

NAME: _____
DATE: _____
Prescribing Practitioner: _____

CODE 0=None
1=Minimal, may be extreme normal
2=Mild
3=Moderate
4-Severe

INSTRUCTIONS:
Complete Examination procedure (attachment d.)
Before making ratings

MOVEMENT RATINGS: Rate highest severity observed. Rate movements that occur upon activation one less than those observed spontaneously. Circle movement as well as code number that applies.		RATER Date	RATER Date	RATER Date	RATER Date
Facial and Oral Movements	**1. Muscles of Facial Expression** e.g. movements of forehead, eyebrows, periorbital area, cheeks, including frowning, blinking, smiling, grimacing	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4
	2. Lips and Perioral Area e.g., puckering, pouting, smacking	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4
	3. Jaw e.g. biting, clenching, chewing, mouth opening, lateral movement	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4
	4. Tongue Rate only increases in movement both in and out of mouth. NOT inability to sustain movement. Darting in and out of mouth.	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	O 1 2 3 4
Extremity Movements	**5. Upper (arms, wrists,, hands, fingers)** Include choreic movements (i.e., rapid, objectively purposeless, irregular, spontaneous) athetoid movements (i.e., slow, irregular, complex, serpentine). DO NOT INCLUDE TREMOR (i.e., repetitive, regular, rhythmic)	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4
	6. Lower (legs, knees, ankles, toes) e.g., lateral knee movement, foot tapping, heel dropping, foot squirming, inversion and eversion of foot.	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4
Trunk Movements	**7. Neck, shoulders, hips** e.g., rocking, twisting, squirming, pelvic gyrations	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4
Global Judgments	**8. Severity of abnormal movements overall**	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4
	9. Incapacitation due to abnormal movements	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4
	10. Patient's awareness of abnormal movements Rate only patient's report No awareness 0 Aware, no distress 1 Aware, mild distress 2 Aware, moderate distress 3 Aware, severe distress 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4	0 1 2 3 4
Dental Status	**11. Current problems with teeth and/or dentures?**	No Yes	No Yes	No Yes	No Yes
	12. Are dentures usually worn?	No Yes	No Yes	No Yes	No Yes
	13. Edentia?	No Yes	No Yes	No Yes	No Yes
	14. Do movements disappear in sleep?	No Yes	No Yes	No Yes	No Yes

SCHOLARLY PROJECT PROPOSAL

Abnormal Involuntary Movement Scale (AIMS) Testing Tool

Abnormal Involuntary Movement Scale (AIMS)

Definition

The Abnormal Involuntary Movement Scale (AIMS) is a rating scale that was designed in the 1970s to measure involuntary movements known as tardive dyskinesia (TD). TD is a disorder that sometimes develops as a side effect of long-term treatment with neuroleptic (antipsychotic) medications.

Purpose

Tardive dyskinesia is a syndrome characterized by abnormal involuntary movements of the patient's face, mouth, trunk, or limbs, which affects 20%–30% of patients who have been treated for months or years with neuroleptic medications. Patients who are older, are heavy smokers, or have diabetes mellitus are at higher risk of developing TD. The movements of the patient's limbs and trunk are sometimes called choreathetoid, which means a dance-like movement that repeats itself and has no rhythm. The AIMS test is used not only to detect tardive dyskinesia but also to follow the severity of a patient's TD over time. It is a valuable tool for clinicians who are monitoring the effects of long-term treatment with neuroleptic medications and also for researchers studying the effects of these drugs. The AIMS test is given every three to six months to monitor the patient for the development of TD. For most patients, TD develops three months after the initiation of neuroleptic therapy; in elderly patients, however, TD can develop after as little as one month.

Precautions

The AIMS test was originally developed for administration by trained clinicians. People who are not health care professionals, however, can also be taught to administer the test by completing a training seminar.

Description

The entire test can be completed in about 10 minutes. The AIMS test has a total of twelve items rating involuntary movements of various areas of the patient's body. These items are rated on a five-point scale of severity from 0–4. The scale is rated from 0 (none), 1 (minimal), 2 (mild), 3 (moderate), 4 (severe). Two of the 12 items refer to dental care. The patient must be calm and sitting in a firm chair that doesn't have arms, and the patient cannot have anything in his or her mouth. The clinician asks the patient about the condition of his or her teeth and dentures, or if he or she is having any pain or discomfort from dentures.

The remaining 10 items refer to body movements themselves. In this section of the test, the clinician or rater asks the patient about body movements. The rater also looks at the patient in order to note any unusual movements first-hand. The patient is asked if he or she has noticed any unusual movements of the mouth, face, hands or feet. If the patient says yes, the clinician then asks if the movements annoy the patient or interfere with daily activities. Next, the patient is observed for any movements while sitting in the chair with feet flat on the floor, knees separated slightly with the hands on the knees. The patient is asked to open his or her mouth and stick out the tongue twice while the rater watches. The patient is then asked to tap his or her thumb with each finger very rapidly for 10–15 seconds, the right hand first and then the left hand. Again the rater observes the patient's face and legs for any abnormal movements.

After the face and hands have been tested, the patient is then asked to flex (bend) and extend one arm at a time. The patient is then asked to stand up so that the rater can observe the entire body for movements. Next, the patient is asked to extend both arms in front of the body with the palms facing

Abnormal Involuntary Movement Scale (AIMS) Testing Tool

downward. The trunk, legs and mouth are again observed for signs of TD. The patient then walks a few paces, while his or her gait and hands are observed by the rater twice.

Results

The total score on the AIMS test is not reported to the patient. A rating of 2 or higher on the AIMS scale, however, is evidence of tardive dyskinesia. If the patient has mild TD in two areas or moderate movements in one area, then he or she should be given a diagnosis of TD. The AIMS test is considered extremely reliable when it is given by experienced raters.

If the patient's score on the AIMS test suggests the diagnosis of TD, the clinician must consider whether the patient still needs to be on an antipsychotic medication. This question should be discussed with the patient and his or her family. If the patient requires ongoing treatment with antipsychotic drugs, the dose can often be lowered. A lower dosage should result in a lower level of TD symptoms. Another option is to place the patient on a trial dosage of Clozapine (Clozaril), a newer antipsychotic medication that has fewer side effects than the older neuroleptics.

Examination Procedure

Either before or after completing the examination procedure, observe the patient unobtrusively at rest (e.g., in the waiting room).

The chair to be used in this examination should be a hard, firm one without arms. Have the person remove their shoes and socks.

1. Ask the patient whether there is anything in his or her mouth (such as gum or candy) and, if so, to remove it.
2. Ask about the *current* condition of the patient's teeth. Ask if he or she wears dentures. Ask whether teeth or dentures bother the patient *now*.
3. Ask whether the patient notices any movements in his or her mouth, face, hands, or feet. If yes, ask the patient to describe them and to indicate to what extent they *currently* bother the patient or interfere with activities.
4. Have the patient sit in chair with hands on knees, legs slightly apart, and feet flat on floor. (Look at the entire body for movements while the patient is in this position.)
5. Ask the patient to sit with hands hanging unsupported -- if male, between his legs, if female and wearing a dress, hanging over her knees. (Observe hands and other body areas).
6. Ask the patient to open his or her mouth. (Observe the tongue at rest within the mouth.) Do this twice.
7. Ask the patient to protrude his or her tongue. (Observe abnormalities of tongue movement.) Do this twice.
8. Ask the patient to tap his or her thumb with each finger as rapidly as possible for 10 to 15 seconds, first with right hand, then with left hand. (Observe facial and leg movements.) [±activated]
9. Flex and extend the patient's left and right arms, one at a time.
10. Ask the patient to stand up. (Observe the patient in profile. Observe all body areas again, hips included.)
11. Ask the patient to extend both arms out in front, palms down. (Observe trunk, legs, and mouth.) [activated]
12. Have the patient walk a few paces, turn, and walk back to the chair. (Observe hands and gait.) Do this twice. [activated]

Participant Consent Form

Consent

Title of the Project: Assessing and Strengthening New Provider Education Related to Extrapyramidal Symptoms and Antipsychotic Medication Usage
Principal Investigator: Mesiah Porter, Jr., MSN, DNP(c), FNP-BC, PMHNP(c)

Invitation to be Part of a Research Study

You are invited to participate in a research study. To participate, you must be 18 years of age or older, newly Board-Certified as a Psychiatric-Mental Health Nurse Practitioner within the last twelve months, as well as began employment and/or affiliation with iCare and Associates, LLC within the last twelve months. Taking part in this research project is voluntary.

Please take time to read this entire form and ask questions before deciding whether to take part in this research.

What is the study about and why is it being done?

The purpose of the study is to increase provider knowledge related to antipsychotic medication usage. Further, it serves to increase provider knowledge related to symptoms associated with these medications.

What will happen if you take part in this study?

If you agree to be in this study, I will ask you to do the following things:

1. You will attend a brief employee meeting to complete a pre-test related to antipsychotic medications. The test administration will take approximately thirty minutes.
2. You will attend a two-hour employee meeting, to receive an educational lecture, including a PowerPoint presentation with handouts. The lecture and presentation will take approximately thirty minutes.
3. During the second employee meeting, you will participate in a question-and-answer period, immediately following the conclusion of the lecture and PowerPoint presentation. The question-and-answer period will take approximately thirty minutes, but extra time may be allowed as needed, to address all questions, concerns, and information.
4. You will complete a post-test at the conclusion of the question-and-answer period. The test administration will take approximately thirty minutes.

How could you or others benefit from this study?

The direct benefit participants should expect to receive from taking part in this study is increased provider knowledge related to this topic.

Benefits to society include potential improved patient health outcomes.

What risks might you experience from being in this study?

The risks involved in this study include are minimal, which means they are equal to the risks to the risks you would encounter in everyday life.

How will personal information be protected?

Consent

The records of this study will be kept private. Research records will be stored securely, and only the researcher will have access to the records.

The privacy of the participants will be kept confidential, as the names or employment identification numbers will be utilized. Pseudonyms and codes will be utilized instead. Testing, education, and question-and-answer sessions will take place in a private, employee conference area, outside of normal patient hours.

Participant data will be stored on a password-locked laptop computer. Data from this computer may be used for future presentations. After three years, all electronic records will be deleted. Physical assessments will be destroyed upon the successful collection of all pertinent data.

How will you be compensated for being part of the study?

Participants will not be compensated for participating in this study.

Is study participation voluntary?

Participation in this study is voluntary. Your decision whether or not to participate will not affect your current or future relations with Liberty University or iCare and Associates, LLC. If you decide to participate, you are free to not answer any question or withdraw at any time.

What should you do if you decide to withdraw from the study?

If you choose to withdraw from the study, please contact the researcher at the email address/phone number included in the next paragraph. Should you choose to withdraw, data collected from you will be destroyed immediately and will not be included in this study.

Whom do you contact if you have questions or concerns about the study?

The researcher conducting this study is Mesiah Porter, Jr. You may ask any questions you have now. If you have questions later, **you are encouraged** to contact him at [redacted] or [redacted]. You may also contact the researcher's faculty sponsor, Dr. Sherri Walker, at [redacted].

Whom do you contact if you have questions about your rights as a research participant?

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, **you are encouraged** to contact the Institutional Review Board, 1971 University Blvd., Green Hall Ste. 2845, Lynchburg, VA 24515 or email at irb@liberty.edu.

Disclaimer: The Institutional Review Board (IRB) is tasked with ensuring that human subjects research will be conducted in an ethical manner as defined and required by federal regulations. The topics covered and viewpoints expressed or alluded to by student and faculty researchers are those of the researchers and do not necessarily reflect the official policies or positions of Liberty University.

Your Consent

By signing this document, you are agreeing to be in this study. Make sure you understand what the study is about before you sign. You will be given a copy of this document for your records. The researcher will keep a copy with the study records. If you have any questions about the

Consent

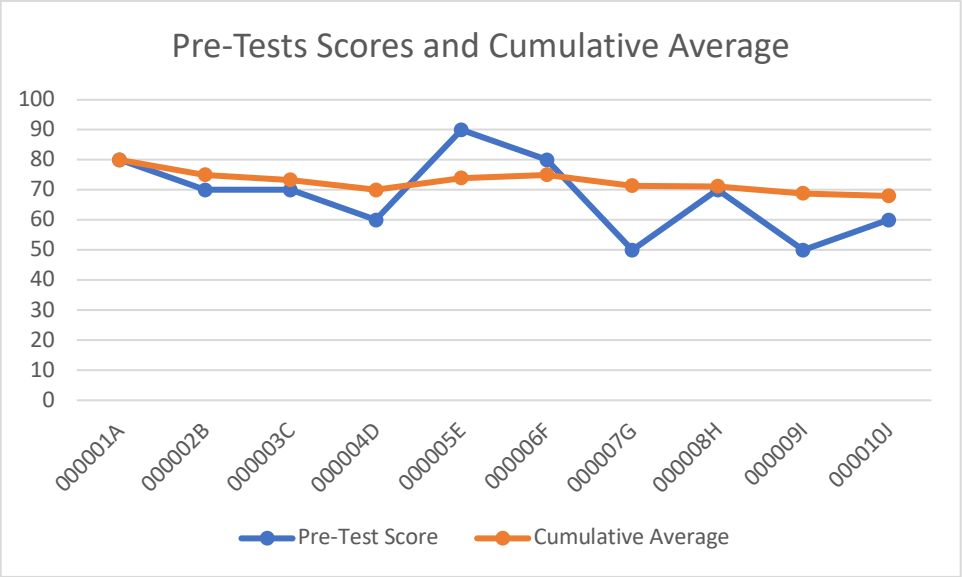
study after you sign this document, you can contact the study team using the information provided above.

I have read and understood the above information. I have asked questions and have received answers. I consent to participate in the study.

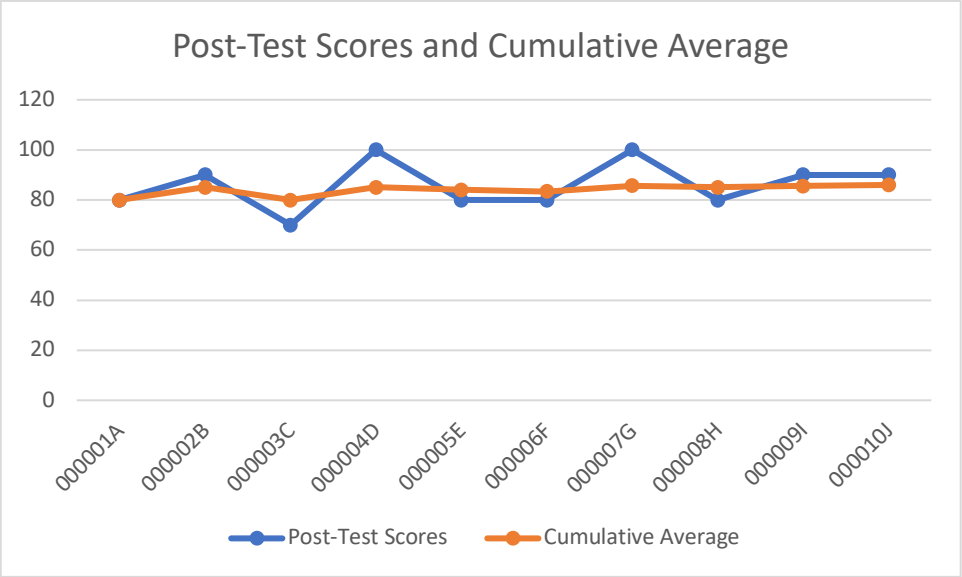
_____
Printed Subject Name

_____
Signature & Date

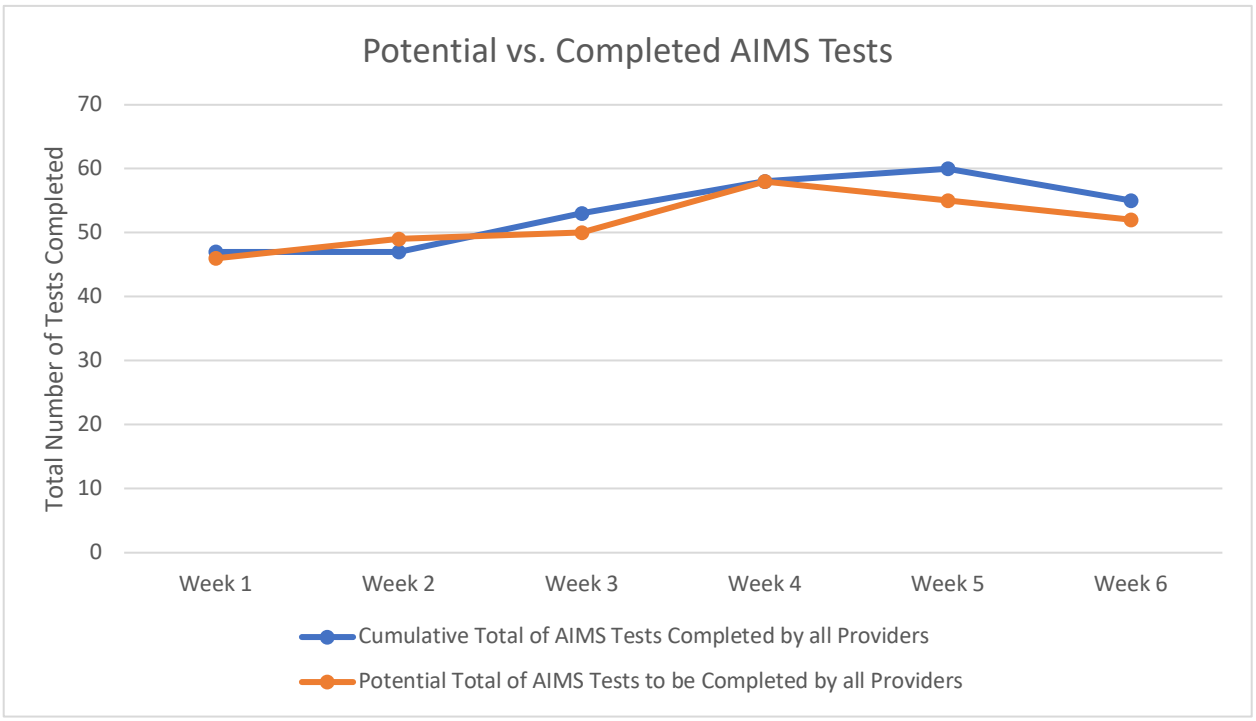
Pre-Test Scores and Cumulative Average



Post-Test Scores and Cumulative Average



Potential vs. Completed AIMS Tests



Statistical Analyses and Paired t-Test Results

	Pre-Test Score	*Post-Test Scores*
Mean	68	86
Variance	173.3333	93.33333
Observations	10	10
Pearson's correlation	-0.68139	
Hypothesized mean difference	0	
df	9	
t-statistic	-2.7136	
P(T<=t) one-tail	0.011928	
t critical one-tail	1.833113	
P(T<=t) two-tail	0.023856	
t critical two-tail	2.262157	

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