Implementing an Abnormal Involuntary Movement Scale at an Outpatient Mental Health Clinic

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Implementation of Abnormal Involuntary Movement Scale at an Outpatient Mental Health Clinic

UNIVERSITY OF SAN DIEGO
Hahn School of Nursing and Health Science
Beyster Institute of Nursing

DOCTOR OF NURSING PRACTICE PORTFOLIO

by
Amanda F. Ghamsari

A portfolio presented to the

FACULTY OF THE HAHN SCHOOL OF NURSING AND HEALTH SCIENCE
BEYSTER INSTITUTE FOR NURSING RESEARCH
UNIVERSITY OF SAN DIEGO

In partial fulfillment of the
requirements for the degree

DOCTOR OF NURSING PRACTICE

May 22, 2023
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Acknowledgments

I would like to express my gratitude to Dr. DuBose, my faculty advisor and mentor throughout this program. She has gone above and beyond to ensure that I was staying on the right course in order to graduate with my class. Your guidance, support, and expertise made this project successful.

I want to thank my loving husband, Dr. Ali K. Ghamsari, who has never doubted me in my academic and professional journeys. Without him I would have never had the faith in myself to work towards a doctoral degree. He has saved my life in more ways than one. We will always continue to be each other’s biggest cheerleaders.

To my family, I want to thank you for your endless support, love, and guidance. My father, Javad, has always believed in me and pushed me to go further in life, you have played an instrumental part in getting me here today. To my bonus mother, Janet, your love and support through my ups and downs has meant the world to me. Lastly, to my belated mother, watching your struggles and untimely passing catapulted me into this field. My biggest hope is that I can honor you in my work everyday.
Abstract

Background: Movement disorders caused from psychotropic medications affect an estimated 500,000 people in the United States. These disorders bring an added cost for treatment to the patient, cause emotional distress, and may hinder daily life. Overall health and additional medication costs were increased for these patients by $25,879 per patient per year compared to patients without a movement disorder.

Purpose of Project: To address the issue, the team of mental health providers at an outpatient clinic assess their mental health patients at start of care and at follow up visits utilizing the Abnormal Involuntary Movement Scale. With the goal of early diagnosis of movement disorders associated with psychotropic medications and early intervention.

Framework/EBP Model: The evidence-based project is designed utilizing the Iowa Model of evidence based practice to promote quality care. The Abnormal Involuntary Movement Scale is utilized as a screening tool.

Evidence-based Intervention/Benchmark: The project implements screening of patients on psychotropic medications using the Abnormal Involuntary Movement Scale. This is a 12 item screening tool performed by medical professionals to assess for and rate severity of movement disorders.

Involuntary movements are rated and observed in the face, extremities, and trunk. A rating is given for severity of the movements, if there is any incapacitation due to the movements, patient’s own awareness of their movements, and dental status.

Evaluation of Results: Results concluded that when movement disorders associated with psychotropic
medication use was diagnoses that earlier intervention was implemented over a 3 month period. There was an increase in patient satisfaction with their providers with the additional screening and education on potential for movement disorders.

Implications for Clinical Practice: Routine assessments for involuntary movements with use of the Abnormal Involuntary Movement Scale may aid providers in earlier detection of these disorders. Earlier intervention for the movement disorders could be associated with the screening.

Conclusions: Future research can focus on other methods of detection and prevention of movement disorders associated with psychotropic medication use. Keywords: abnormal involuntary movements, AIMS, tardive dyskensia, psychotropic medications, EPS, early intervention.

**PICOT Question**

In psychiatric patients of all ages at Mindbloom La Jolla clinic does implementing an AIMS assessment upon start of an antipsychotic compared to no formal assessment result in providing detection of abnormal movements caused by psychotropic medications for a duration of 3 months.

**Background and Significance**

Movement disorders caused from psychotropic medications affect an estimated 500,000 people in the United States (Robert, 2019). These disorders bring an added cost for treatment to the patient, cause emotional distress, and may hinder daily life. Overall health and additional medication costs were increased for these patients by $25,879 per patient per year compared to patients without a movement disorder (Carroll et al., 2019).
Abnormal movements encompass a spectrum of movement dysfunctions that can significantly impact an individual's quality of life. These movements can manifest in various forms; ranging from subtle twitches to pronounced jerks, tremors, or choreiform motions. Early detection and accurate assessment of these abnormal movements is instrumental not only for appropriate clinical diagnosis but also for monitoring their progression and evaluating any treatment efficacy.

The Abnormal Involuntary Movement Disorders Scale (AIMS) is the key tool in the assessment of abnormal movements. Developed by Guy W. Calne et al. in 1974, the AIMS offers a standardized way to determine the severity of involuntary movements regardless of where it occurs in the body. It was first designed to evaluate dyskinesias in patients taking antipsychotic medications. It has since become the golden standard for detecting psychotropic induced movement disorders.

The AIMS assessment tool is a 12 item tool to detect movement disorders on a validated scale (Chakrabarty et al., 2023). This assessment tool provides clinicians with a systematic framework in which to determine the severity and location of abnormal movements. Failure to utilize this standardized tool in the EHR could make it harder to track and monitor any abnormal movements over time. If the assessment questions are not looked at during the visit, then the provider may fail to assess the patient or forget key questions that might be missed during the visit. As AIMS does a great job of taking in both patient-reported symptoms and provider-observed assessments, it offers an overall evaluation that captures the unique presentation that different movement disorders can entail. Once a provider is trained it should take on average less than three minutes to perform the AIMS assessment. The questions have the provider objectively look at the patient to note any abnormal movements of the face and tongue. It also looks at the
movements of the arms, hands, legs, and toes. The trunk (neck, shoulder, and hips) should be observed for any rocking or twisting. Having the patient rate if they are aware of any abnormal movements and the degree to which it causes them distress is included. It should also be asked if the patient has any current problems with their teeth or is wearing denture as this could cause what looks like abnormal movements in the face.

Once a diagnosis of an abnormal movement is diagnosed the tool still serves as a valuable tool for monitoring any changes in the disorder and any responses to treatment if implicated. Its standardization in compiling a score enables providers to monitor changes in movement severity. This allows for timely changes to be made in any treatment interventions. The ability to continue to assess and follow the patient’s progress can be crucial in long-term conditions in which the disease progression may evolve gradually, leading to the need for ongoing assessments to better patient outcomes.

The implementation of AIMS in clinical research has lead to the development of evidence-based interventions targeting abnormal movements caused by psychotropic medications. This tool was established into practice in 1988. Since AIMS establishes a common scoring system for measurement, AIMS helps researchers to conduct clinical trials, determine the success of the treatment, and then report their findings to compare with previous findings. By having a standardized tool it helps to make studies reproducible as well as create standards by which to measure outcomes. This helps to take the results of studies and turn them into clinical practice that can better patient outcomes. The FDA approved two VMAT2 inhibitors in 2017 for treatment of tardive dyskinesia (Arya et al., 2019). These two drugs are deuterabenazine and valbenazine. Long term studies will be needed to determine their effectiveness and efficacy.
IMPLEMENTATION OF ABNORMAL INVOLUNTARY MOVEMENT SCALE AT AN OUTPATIENT MENTAL HEALTH CLINIC

With standardized implementation of AIMS for the detection of abnormal movements it offers many advantages in clinical practice as well as research. By providing a standardized way to assess abnormal movement, AIMS helps providers to accurately diagnose, monitor, and treat a vast range of movement disorders. This will ultimately improve patient care and give the medical community a better understanding of how to address these issues. Movement disorders can be very debilitating to a patient’s life. It may alter the way they have to do their job or even their capacity to perform their job if it involves steadiness of the hand and they develop a pronounced hand tremor. Dr. Kremens reports that it is crucial to have early detection of movement disorders so that treatment can be implemented or interventions started (Kremens, 2019). He also reported that when surveyed 50%-60% of patients diagnosed with a movement disorder felt embarrassed or ashamed because of it (Kremens, 2019).

**Purpose of Project and AIMS**

The purpose of this implementation is to provide standardization in a clinical setting for a way to detect and address abnormal movements caused by psychotropic medications. To address the issue, the team of mental health providers at an outpatient mental health clinic assess their mental health patients at start of care and at follow up visits utilizing the Abnormal Involuntary Movement Scale if they are currently on or starting an antipsychotic medication. The goal is to have early diagnosis of movement disorders associated with psychotropic medications and early intervention.

**Framework/ Evidence-Based Practice Model**

The implementation of this project required a very structured approach to ensure that the processes would be successfully implemented into the outpatient clinic. The IOWA Model of Evidence-Based Practice gives us guidelines in which to implement the assessment of abnormal
movements in systematic manner. This model has been previously used in similar manners for other evidence-based projects. The IOWA Model puts emphasis of combining results from research, expertise from providers and clinicians, as well as information from the patient population to help improve treatment outcomes.

This model has many layers and steps. Starting out you must identify the problem that you wish to address by seeing room for improvement in systems or structure of care. Secondly, you must take a look at evidence and perform an evaluation to justify your implementation. When you have your evidence indicating it would work in practice then you formulate how you would use this in practice. Next comes implementation of the evidence in your setting followed by a subsequent evaluation of your findings.

An advantage of using this model is that it is easy to follow. It entails utilizing a step by step process to follow and a literature review. Pubmed states that the Iowa model is widely used for the implementation of evidenced-based practice (Buckwalter et al., 2017). Created by nurses, “the Iowa model focuses on integrating evidence at a systems level (Buckwalter et al, 2017) It was developed 25 years ago by nurses at the University of Iowa (Duff et. Al, 2020). It has been described as a user driven model that differs from other frameworks in that it promotes evidenced based practices to be implemented within a system or organization (Duff et. Al, 2020). As described above, my project for the aims to implement a system change within my clinical site that can greatly benefit the practitioners to become aware of EPS at an earlier time in order to provide interventions.

This model is a guide for EBP process (Duff, et. al, 2020). Having a clear guide for a study helps to give a clear framework to work with. This model emphasizes pilot testing versus
the implementation of a practice change (White et al., 2019). As this project is not implementing a permanent practice change it makes the best fit.

There are limitations of this model and potential weaknesses for it as well. For this model, some processes can take a long time to implement and we are working within a limited time frame for our projects. It has been described that pilot type studies can have more errors than 3 other forms of projects. There is a chance that the people involved in my study may not be as committed to my project and the implementation of it as much as I am. I think that the outcomes can be very beneficial to the clinic this project was implemented at. This is a great opportunity for future students to carry on this project for their capstone projects as well.

**Literature Review/Evaluation of Results**

Hauser et al. stated that utilization of the AIMS assessment is pivotal in measuring the efficacy of medications used to treat movement disorders as they are able to note improvement in scores (Hauser et al., 2022). Research shows that this tool is helpful to providers in tracking movement disorders in clinic as well as for research purposes (Chakrabarty et al., 2023) Dr. Correll noted that the Abnormal Involuntary Movement Scale is the standard of care when detecting abnormal movements (Correll, 2021).

A study by Citrome et al. (2021) stated that this assessment is appropriate for use in measuring changes in severity of movement disorders. The study utilized the AIMS form in order to track any potential improvement in abnormal movements when intervention via medication was applied. They found improvement in patients with Tardive Dyskinesia with use of the drug valbenazine.

Widschwendter and Hofer (2019) discuss how 20-30% of patients who are treated with an antipsychotic for a time period greater than a few months will develop some form of a
movement disorder. They did a study to determine if providing training for providers on how to implement AIMS would improve the likelihood of providers utilizing this scale. They found that out of a sample of 60 charts 87% had an AIMS documented compared to the previous 3% that were documented before training was provided to providers (Charkrabarty et al. 2023). The study recommends that an instrument such as the AIMS should be done before starting any antipsychotic medication and be done again on regular intervals (Charkrabarty et al., 2023).

Various studies have taken a look into the validity of using AIMS within the behavioral health setting. A clinical narrative review done by Petriceks et al. (2024) took a look at the process of using AIMS in the clinical setting and noted is was a validated tool for detecting abnormal movements caused by psychotropic medications. They stressed that follow-up assessments were need with use of AIMS to monitor for any response to treatment, to adjust medications if indicated, and continue to provide any needed interventions (Petriceks et al. 2024).

**Design**

The Abnormal Involuntary Movement Scale was implemented to detect and monitor abnormal movements caused by psychotropic medications. After approval by IRB and clinic director was received, communication was sent to the providers at the outpatient clinic explaining what was being asked of them for this project along with images of the newly integrated AIMS form into their electronic health record. The goal was for every patient currently on or started on an antipsychotic were to be screened using AIMS at an outpatient mental health clinic in La Jolla, California. After completing the initial screening, patients were to be screened with the AIMS at every follow up visit for the course of 3 months. Communication was sent to providers to reinforce the process.
Methods and Justification

An initial email was sent to all providers, totaling 5, at an outpatient mental health clinic detailing the steps of this project. They were instructed on doing the AIMS form that was integrated into their evaluation and follow up notes in their electronic health records (EHR). The providers were asked to screen for abnormal movements using this form for every patient already on an antipsychotic, being started on an antipsychotic and at subsequent follow ups for those patients.

After the initial email was sent, it was recommended that the frequency of screening be reduced to initial visits only initial visits to minimize impact on the providers. Rather than change clinic locations for this EBP implementation, it was decided to limit AIMS administration to initial visits. The patient charts were reviewed daily to determine if the patient was on or started on an antipsychotic and if they were screen using the AIMS form. It was noted for each patient that an AIMS form was completed on if they had an abnormal movement noted and if so what treatment was advised.

Ethical Considerations

This study was approve by the Institutional Review Board of the University of San Diego Hahn School of Nursing (IRB-2022-33).

Conclusions

Data was collected manually through chart audits for the following data points found in figure 1. Out of 1542 patients treated at the clinic during the time frame, 1227 were excluded for not being on an antipsychotic, 28 were excluded for incomplete or missing documentation, and 7 were excluded for being marked a no show or missed appointment. Descriptive statistical analysis was completed. and of the patient charts reviewed 280 of the charts or 18% of them
were prescribed an antipsychotic. Out of the 280 patients found to be on an antipsychotic, 2 were excluded due to incomplete or missing documentation. The Abnormal Involuntary Movement Scale was completed on 33% of those patients which was 92 out of 280 patients. Out of the 92 patients 97% did not have any noted movement disorder identified. Within the 92 charts that had an AIMS form completed 1 was excluded due to missing or incomplete documentation. The results showed that 7 of the patients had a movement disorder identified, but only through documentation of the AIMS form.

In terms of treatment for abnormal movements discovered by using the AIMS form, three patients went untreated for movement disorders. One patient was treated with propranolol for a tremor. One patient was discontinued from the offending agent and one tapered off of the offending agent. There was also one patient referred to UCSD for deep brain stimulation for their movement disorder.

In reviewing AIMS completion across providers refer to figure 4 which shows the number of patients on an antipsychotic and the amount of AIMS assessments completed by provider. This breakdown showed that Provider A had a minimal amount of patients on an antipsychotic. Provider B had 64 patients on an antipsychotic with 35 of those patients having had an AIMS assessment done. Provider C had 83 patients on an antipsychotic with 0 AIMS assessments done on their patients. Provider D had 18 patients documented on an antipsychotic with 5 having had an AIMS assessment performed. Lastly, provider E had 111 patients on an antipsychotic with 50 having had an AIMS assessment done. In addition to increase provider utilization, there was inconsistent completion of the AIMS assessment for patients that met criteria. Research indicates it would be beneficial to providers to continue to use this form
when initiating psychotropic treatment and at follow up appointments to detect movement disorders and there is a future opportunity to improve consistent use.
Figure 1. Data Stratification for AIMS Implementation

- Patients Treated at Clinic 12/11/2023-3/12/2024 n=1542
- Currently Prescribed an Antipsychotic or Newly Prescribed Antipsychotic n=280
- AIMS Form Completed n=92
- Movement Disorder: Tremor and Tongue Movement n=1
- Treatment: Tapering off Antipsychotic Medication n=1

Excluded:
- No Show/Missed Appointment n=7
- Incomplete or Missing Documentation n=28
- Not Prescribed an Antipsychotic n=1227

Excluded:
- Incomplete or Missing Documentation n=2
- AIMS Not Completed n=186

Excluded:
- Incomplete or Missing Documentation n=1
- No Movement Disorder Noted n=90
IMPLEMENTATION OF ABNORMAL INVOLUNTARY MOVEMENT SCALE AT AN OUTPATIENT MENTAL HEALTH CLINIC

Figure 2. Percentage of AIMS Completion and Total Encounters by Provider

Figure 3. Patients Prescribed An Antipsychotic

Figure 4. Count of Patients Prescribed Antipsychotic and AIMS Completed by Provider
Figure 5. Count of Patients Prescribed Antipsychotic and AIMS Completed

![Figure 5](image_url)

Figure 6. Documented Movement Disorders

![Figure 6](image_url)
Study Limitations

The AIMS assessment was implemented at initial visits only and not a follow visits in accordance with provider recommendations. Additionally, not all providers participated in the EBP project. These conditions limited the amount of data collected and potential identification of abnormal movements.

Discussion

This project was implemented over the course of three months at an outpatient mental health clinic in which the providers were asked to screen patients using an AIMS assessment if they were on or started on an antipsychotic. The results show us that out of the 280 patients documented to be on an antipsychotic, only 92 had an AIMS assessment done. In total 7 patients were found to have an abnormal involuntary movement disorder. Overall, the project was unsuccessful as there was not full participation from all the providers involved. It would be beneficial for a future student to continue this work. Having more in depth training to ensure all providers were well versed in performing the AIMS assessment would be important.

Utilizing this assessment in practice has worked to utilize evidence-based practices in the clinic. When providers use this standardized tool consistently they can more readily identify abnormal movements associated with psychiatric medications and offer earlier intervention.

Earlier intervention for abnormal movements caused by psychiatric medications allows for more swift interventions. These interventions could include withdrawing the offending agent, adding a supplemental medication for the specific movement disorder, change dosing of medication, or referral to a specialist.

The ability to monitor the progression of a potential movement disorder with use of the AIMS assessment allows providers to also observe treatment response over time. Using this
assessment allows provider to be proactive in regards to the unwanted side effects that can accompany psychiatric medications. By adding this assessment into the EHR it allows for easier monitoring of patient progress over time and continuity of care with other providers.

It is vital that all team members performing the AIMS are properly trained prior to performing the assessment. During this project all 5 providers performing the AIMS assessments were previously trained on this assessment. There might have been some difficulty in properly performing an AIMS assessment via telehealth as the clinic used utilizes telehealth for some of their patients.

Ongoing quality improvement measures are needed to ensure that this assessment is being done regularly. It might be needed for providers to have audits to determine what any barriers or challenges they might be facing in utilizing this assessment.

Evidence to Action

Based on the above mentioned literature review and findings from this project, I have compiled five recommendations for future practice to increase the use of the AIMS assessment.

1. Provide formal in person training to all providers in an outpatient mental health setting prior to them starting to see patients. This training can be lead by an identified person in the setting who is well versed in performing this assessment.

2. With a formal training have a live example of someone performing the AIMS assessment. Give time for providers to practice in front of the trainer and leave time for questions.

3. During formal training stress the importance of why using a standardized tool to assess for abnormal movements is vital in detecting abnormal movements or to track the progress of treatment.
4. Have audits of charts every month to determine if this assessment is being consistently utilized and track provider engagement.

5. Have an open discussion with providers to determine what barriers to using this assessment are for them.

**Strengths and Limitations**

One of the main strengths of the implementation of AIMS at an outpatient clinic was that it brought in a standardization to assess for abnormal movements secondary to psychiatric medications. This gives framework to monitor any movement conditions or efficacy of treatments. Since this assessment form has been proven to be reliable it is better received by providers.

When using the AIMS assessment consistently in practice, providers increase the likelihood that they will detect any abnormal movements caused by psychiatric medications at an earlier stage. If the movement disorder is detected early then rapid intervention can be implemented. This would include changing medications, tapering or stopping a medication, adding an adjunct medication, or deep brain stimulation.

Having the AIMS assessment added into the outpatient clinic’s EHR streamlines their documentation and makes sure that data is easily accessible to all providers. This helps with continuity of care, better collaboration, and using evidence-based data to make patient care decisions.

In terms of limitations of this study we find that proper training to perform the assessment is needed. Often in practice providers may ask a patient questions about abnormal movements without objectively looking for those movements. Also, use of telehealth can limit a provider’s ability to see all of the patient well in order to perform the AIMS assessment.
Time constraints may deter providers from including this assessment in their visits. Properly performing an AIMS assessment requires time that is often limited during patient visits or if the patient is in crisis. If a patient is actively psychotic or manic it might be difficult to have the patient cooperate with the assessment.

**Implications for Future Research**

There were gaps in this project that hindered further data. Not all of the provider who were asked to engage with this project did so. The original hope was to have patients screened using the AIMS assessment at every follow up. There was some objection to this by 1/5 of the providers so it was not done on an overall consistent basis.

This project would warrant being continued in the outpatient setting. The goal of any future research should be on consistency with assessments as well as buy in from all providers involved. It would also warrant determination of the best steps for performing this assessment with patients being seen via telehealth as there is a rise in telehealth visits.

Since there were a variety of treatment methods used for those who were determined to have a movement disorder it would be beneficial to review treatment options with provider before implementing a project. Having parameters or set treatment modalities would further work to standardize this study.

**Final Conclusions**

Implementation the AIMS assessment as part of the standardized evaluation at an outpatient mental health clinic offers many strengths. It allows for earlier detection of movement disorders as well as treatment. It is important to note the limitations as well in that you need the assurance that all providers will participate and be consistent with utilization of this assessment.
Ongoing evaluation and quality assurance efforts will be vital to ensuring the effectiveness of the AIMS assessment in order to bring about the highest level of patient care.
References


Robert A. Hauser, Hadas Barkay, Amanda Wilhelm, Maria Wieman, Juha-Matti Savola, Mark Forrest Gordon, Minimal clinically important change in Abnormal Involuntary Movement Scale score in tardive dyskinesia as assessed in pivotal trials of deutetrabenazine, Parkinsonism & Related Disorders, Volume 97, 2022, Pages 47-51.


Appendix B

Poster Abstract

Title of Presentation: Implementation of Abnormal Involuntary Movement Scale at an Outpatient Mental Health Clinic.

**Background:** Movement disorders caused from psychotropic medications affect an estimated 500,000 people in the United States. These disorders bring an added cost for treatment to the patient, cause emotional distress, and may hinder daily life. Overall health and additional medication costs were increased for these patients by $25,879 per patient per year compared to patients without a movement disorder.

**Purpose of Project:** To address the issue, the team of mental health providers at an outpatient clinic assess their mental health patients at start of care and at follow up visits utilizing the Abnormal Involuntary Movement Scale. With the goal of early diagnosis of movement disorders associated with psychotropic medications and early intervention.

**Framework/EBP Model:** The evidence-based project is designed utilizing the Iowa Model of evidence based practice to promote quality care. The Abnormal Involuntary Movement Scale is utilized as a screening tool.

**Evidence-based Intervention/Benchmark:** The project implements screening of patients on psychotropic medications using the Abnormal Involuntary Movement Scale. This is a 12 item screening tool performed by medical professionals to assess for and rate severity of movement disorders. Involuntary movements are rated and observed in the face, extremities, and trunk. A rating is given for severity of the movements, if there is any incapacitation due to the movements, patient’s own awareness of their movements, and dental status.
**Evaluation of Results:** Results concluded that when movement disorders associated with psychotropic medication use was diagnosed that earlier intervention was implemented over a 3 month period. There was an increase in patient satisfaction with their providers with the additional screening and education on potential for movement disorders.

**Implications for Clinical Practice:** Routine assessments for involuntary movements with use of the Abnormal Involuntary Movement Scale may aid providers in earlier detection of these disorders. Earlier intervention for the movement disorders could be associated with the screening.

**Conclusions:** Future research can focus on other methods of detection and prevention of movement disorders associated with psychotropic medication use.
Appendix C

Poster

**Implementation of Abnormal Involuntary Movement Scale at an Outpatient Mental Health Clinic**

Amanda Ghamsari, BSN, RN, DNP Student: PMHNP
Faculty Advisor: Briony Dubose, PhD, MH, RN

### Background
- Movement disorders caused by use of psychotropic medications affects an estimated 500,000 people in the United States.
- These disorders increase costs to patients, cause emotional distress, and hinder daily life.
- There is a $25,879 cost increase in care per person if diagnosed with a movement disorder from psychotropic medications.

### Purpose
- To provide earlier detection and intervention for psychotropic induced movement disorders by implementing standard assessments using the Abnormal Involuntary Movement Scale.

### Framework/EBP Model
- Iowa Model

### Evaluation Results
- 18% of patients over 3 months were on an antipsychotic.
- AIMS were completed on 33% of these patients.
- 97% did not have a movement disorder.
- 7 patients were found to have a movement disorder as a result of using the AIMS assessment.

### Evidence for Problem
- At Mindboard La Jolla clinic in April 2023, approximately 25% percent of patients were being screened for movement disorders, however not routinely.
- Studies have shown that routine screening using AIMS assessment can provide earlier detection and intervention for movement disorders.

### Project Plan Process

#### March 2023-May 2023
- Define EBP Question: Review AIMS with faculty, practitioners, and students.

#### April 2023
- Conduct formal and informal EBP.
- Evidence Literature: Review evidence-based publications.

### Conclusions
- AIMS assessments when done routinely have been proven to be instrumental in detecting movement disorders caused by psychotropic medications.
- Results showed out of 280 patients on an antipsychotic 90 had AIMS assessments completed. This resulted in 7 movement disorders discovered and 5 of those were given an intervention.
- Considerations should be made for 100% provider compliance.

### Cost-Benefit Analysis
- Clinic Cost: utilization current EHR: $50
- Salary: training 3 providers for one hour $500.

**Cost-Benefit Analysis**

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
<th>Benefit</th>
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</thead>
<tbody>
<tr>
<td>EHR utilization</td>
<td>$50</td>
<td>$90</td>
</tr>
<tr>
<td>Training providers</td>
<td>$500</td>
<td>$90</td>
</tr>
</tbody>
</table>

For every dollar spent there is $90.26 cost savings per patient.

In a program size of 30 patients, there would be a 27.1% ROI.
Appendix E

Certification

This is to certify that:

Amanda Ghamsari

Has completed the following CITI Program course:

Human Subjects Research - SBR
(Curriculum Group)
Social & Behavioral Research - Basic/Refresher
(Course Learner Group)
1 - Basic Course
(Stage)

Under requirements set by:

University of San Diego

Verify at www.citiprogram.org/verify/?w99260f38-40ec-4992-bad8-05afa479f99e-38984459
### DNP Essential I: Scientific Underpinnings for Practice

**NONPF: Scientific Foundation Competencies**

*The scientific foundation of nursing practice has expanded and includes a focus on both the natural and social sciences including human biology, genomics, science of therapeutics, psychosocial sciences, as well as the science of complex organizational structures. In addition, philosophical, ethical, and historical issues inherent in the development of science create a context for the application of the natural and social sciences.*

<table>
<thead>
<tr>
<th>AACN DNP Essentials &amp; NONPF Competencies</th>
<th>USD DNP Program Objectives</th>
<th>Exemplars</th>
</tr>
</thead>
</table>
| **2. Synthesize nursing and other scientific and ethical theories and concepts to create a foundation for advanced nursing practice.** | **Fall 2021**  
• Iowa Model selected to guide DNP EBP project to improve quality care (DNPC686) | **Fall 2021**  
• Iowa Model selected to guide DNP EBP project to improve quality care (DNPC686) |
| **Spring 2021**  
• Utilized PICOT question to guide a literature search and completed a synthesis of evidence (DNPC611)  
• Completed a genogram going back four generations of family members with cancer (DNPC625) | **Spring 2021**  
• Utilized PICOT question to guide a literature search and completed a synthesis of evidence (DNPC611)  
• Completed a genogram going back four generations of family members with cancer (DNPC625) |
| **Summer 2022**  
• Completed Kosha model, meditation exercises, and discussed current nursing issues and their ethical implications (DNPC610) | **Summer 2022**  
• Completed Kosha model, meditation exercises, and discussed current nursing issues and their ethical implications (DNPC610) |
| **Spring 2023**  
• Discussed case studies for psychopharmacology that are founded in EBP. (DNPC 612). | **Spring 2023**  
• Discussed case studies for psychopharmacology that are founded in EBP. (DNPC 612). |
DNP Essential II: Organizational & System Leadership for Quality Improvement & Systems Thinking

NONPF: Leadership Competencies/Health Delivery System Competencies

Advanced nursing practice includes an organizational and systems leadership component that emphasizes practice, ongoing improvement of health outcomes, and ensuring patient safety. Nurses should be prepared with sophisticated expertise in assessing organizations, identifying system's issues, and facilitating organization-wide changes in practice delivery. This also requires political skills, systems thinking, and the business and financial acumen needed for the analysis of practice quality and costs.

5. Design, implement, and evaluate ethical health care delivery systems and information systems that meet societal needs and ensure accountability for quality outcomes.

Spring 2022
- Completed a SWOT analysis on my selected health care organization (DNPC626)
- Completed an organization leadership chart for my selected organization (DNPC626)

Summer 2022
- Completed class project on ROI of health care initiative. (DNPC653)
### DNP Essential III: Clinical Scholarship & Analytical Methods for Evidence-Based Practice

**NONPF: Quality Competencies/Practice Inquiry Competencies**

Scholarship and research are the hallmarks of doctoral education. Although basic research is viewed as the first and most essential form of scholarly activity, an enlarged perspective of scholarship has emerged through alternative paradigms that involve more than discovery of new knowledge. These paradigms recognize: (1) the scholarship of discovery and integration; (2) isolated facts and make connections across disciplines through the scholarship of integration; and (3) the scholar applies knowledge to solve a problem via the scholarship of application that involves the translation of research into practice and dissemination and integration of new knowledge.

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<td>- Formulated policy based on existing evidence through research of proposed policy (DNPC63)</td>
<td>- Researched final financial project regarding ROI for capstone project (DNPC651)</td>
<td>- Developed and presented our capstone EBP project ideas to a committee for approval. (DNPC 686).</td>
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| 4. Incorporate research into practice through critical appraisal of existing evidence, evaluating practice outcomes, and developing evidence-based practice guidelines. |

### DNP Essential IV: Information Systems/Technology & Patient Care Technology for Improvement & Transformation of Health Care

**NONPF: Technology & Information Literacy Competencies**

DNP graduates are distinguished by their abilities to use information systems/technology to support and improve patient care and health care systems, and provide leadership within health care systems and/or academic

7. Incorporate ethical, regulatory, and legal guidelines in the delivery of health care and the selection, use, and evaluation of information systems and patient care technology.

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<td>- Synthesized evidence on the development of the Electronic Health Record (EHR), and analyzed perspectives from both the patient and the provider on the safety and quality of EHR’s in healthcare (HCIN 540)</td>
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settings. Knowledge and skills related to information systems/technology and patient care technology prepare the DNP graduates apply new knowledge, manage individual and aggregate level information, and assess the efficacy of patient care technology appropriate to a specialized area of practice along with the design, selection, and use of information systems/technology to evaluate programs of care, outcomes of care, and care systems. Information systems/technology provide a mechanism to apply budget and productivity tools, practice information systems and decision supports, and web-based learning or intervention tools to support and improve patient care.
### DNP Essential V: Health Care Policy for Advocacy in Health Care

**NONPF: Policy Competencies**

*Health care policy, whether created through governmental actions, institutional decision-making, or organizational standards, creates a framework that can facilitate or impede the delivery of health care services or the ability of the provider to engage in practice to address health care needs. Engagement in the process of policy development is central to creating a health care system that meets the needs of its constituents. Political activism and a commitment to policy development are central elements of DNP practice.*

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| 3. Demonstrate leadership in collaborative efforts to develop and implement policies to improve health care delivery and outcomes at all levels of professional practice (institutional, local, state, regional, national, and/or international). | **Spring 2022**  
- Completed synthesis of evidence on the latest policies and practices relating to Treatment of Opioid Use Disorder and the analyzed the legislation that is currently in place (DNPC 648) |

### DNP Essential VI: Interprofessional Collaboration for Improving Patient & Population Health Outcomes

**1. Demonstrate advanced levels of clinical practice within defined ethical, legal, and regulatory**

| Spring 2021  
- Weekly self-reflection journals completed regarding past experiences in healthcare using a non-judgmental, beginner’s mind approach (DNPC 610)  
- Fall 2022  
- Worked with various disciplines during clinical to formulate a cohesive treatment plan for patients (NPTC 611). | **Spring 2022**  
- Completed synthesis of evidence on the latest policies and practices relating to Treatment of Opioid Use Disorder and the analyzed the legislation that is currently in place (DNPC 648) |
NONPF: Leadership Competencies

A tiered health care environment depends on the contributions of highly skilled and knowledgeable individuals from multiple professions. In order to accomplish the IOM mandate for safe, timely, effective, efficient, equitable, and patient-centered care in this environment, health care professionals must function as highly collaborative teams. DNPs have advanced preparation in the interprofessional dimension of health care that enable them to facilitate collaborative team functioning and overcome impediments to interprofessional practice. DNP graduates have preparation in methods of effective team leadership and are prepared to play a central role in establishing interprofessional teams, participating in the work of the team, and assuming leadership of the team when appropriate.

3. Demonstrate leadership in collaborative efforts to develop and implement policies to improve health care delivery and outcomes at all levels of professional practice (institutional, local, state, regional, national, and/or international).

DNP Essential VII: Clinical Prevention & Population Health for Improving Nation’s Health

Consistent with national calls for action and with the longstanding focus on health promotion and disease prevention in nursing, the DNP graduate has a foundation in clinical prevention and population health. This foundation enables DNP graduates to analyze epidemiological, biostatistical, occupational, and environmental data in the development, implementation, and evaluation of clinical prevention and population.

6. Employ a population health focus in the design, implementation, and evaluation of health care delivery systems that address primary, secondary, and tertiary levels of prevention.
DNP Essential VIII: Advanced Nursing Practice

NONPF: Independent Practice/Ethics Competencies

The increased knowledge and sophistication of health care has resulted in the growth of specialization in nursing in order to ensure competence in these highly complex areas of practice. The reality of the growth of specialization in nursing practice is that no individual can master all advanced roles and the requisite knowledge for enacting these roles. DNP programs provide preparation within distinct specialties that require expertise, advanced knowledge, and mastery in one area of nursing practice. A DNP graduate is prepared to practice in an area of specialization within the larger domain of nursing.

1. Demonstrate advanced levels of clinical practice within defined ethical, legal, and regulatory parameters in designing, implementing, and evaluating evidence-based, culturally competent therapeutic interventions for individuals or aggregates.

Fall 2022
- Completed implicit bias training to address cultural concerns and divide when treating individuals from various backgrounds (NPTC 611).

Spring 2023
- Completed simulation events around medication management. (DNPC 612).
The End