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Improving Clinician Adherence Rates to AIMS Testing on Individuals Taking Long-Term Antipsychotics

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A Dissertation Submitted to The Graduate School at the University of Missouri-St. Louis in partial fulfillment of the requirements for the degree

Doctor of Nursing with an emphasis in Psychiatric Mental Health Nurse Practitioner

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Abstract

Problem: Tardive dyskinesia is a common problem that creates challenges in the lives of those affected by it. The Abnormal Involuntary Movement Scale records the occurrence of tardive dyskinesia in patients receiving neuroleptic medication. With this scale, clinicians can detect tardive dyskinesia and its severity over time. The aim of this study is to learn the current rate of adherence for clinicians at the organization and to create and implement an intervention that will increase that rate in an effort to improve patient outcomes and quality of life.

Methods: This quality improvement project will use a descriptive cohort design. A retrospective and prospective medical record review will be used to determine pre-post education effectiveness for AIMS screening.

Results: Of the 53 charts reviewed pre implementation, 62% had an AIMS screening, whereas post implementation 72% has an AIMS screening showing a 10% increase. Of those screened pre implementation, 6% had a positive AIMS scores compared to the 0% recorded post implementation.

Discussion: The increase in AIMS screenings helped to identify early symptoms of Tardive Dyskinesia and enabled early treatment, especially for those who were at an increased risk including older African American men prescribed first generation antipsychotics. This project identified a need to increase the number of providers trained on AIMS screening in an effort to increase the adherence rates facility wide.

Improving Clinician Adherence Rates to AIMS Testing on Individuals Taking Long-Term Antipsychotics

Thousands of individuals are affected by tardive dyskinesia annually. It is estimated that 500,000 persons in the United States have been affected by tardive dyskinesia with about 60% to 70% of the cases being mild, and 3 percent extremely severe (Robert, 2019). Tardive dyskinesia is characterized by involuntary stereotyped, choreic, athetoid, and/or dystonic movements in one or more areas of the body, including the orofacial region, extremities, and torso (Kane, Correll, Nierenberg, Caroff, Sajatovic, 2018). The clinical presentation of tardive dyskinesia may include but are not limited to tongue thrusting, lip smacking and or pursing, grimacing, stereotypic piano-playing movements, flexion/extension of the ankles or toes and pelvic rocking (Citrome, 2017). Tardive dyskinesia is caused by taking prescription medications such as antipsychotic, tricyclic antidepressants, and antiemetics. However, exposure to dopamine receptor blocking agents such as antipsychotics place individuals at an increased risk for developing tardive dyskinesia. In patients taking antipsychotics, 20% to 25% develop tardive dyskinesia (Citrome, 2017).

The Abnormal Involuntary Movement Scale (AIMS) (see Appendix A) is a rating scale that was designed in the 1970s to measure involuntary movements and is still widely used today (Brasic, 2018). The AIMS test has a total of 14 items rating involuntary movements of various areas of the patient's body. AIMS is used as an efficacy measure in clinical trials that focus on improvements in tardive dyskinesia. With this scale, clinicians can detect tardive dyskinesia and its severity over time. AIMS testing should be conducted every six months (Kane et al., 2018). However, Johnson

(2017) and Brasic (2018) state, AIMS testing should be done upon initiation of a neuroleptic medication and then every three months thereafter. Implementation of routine AIMS testing should help to decrease hospital related cost, decrease the numbers of those affected by tardive dyskinesia, and improve patient outcomes.

The purpose of this study is to increase clinician adherence to AIMS screening. The aim of this quality improvement project is to establish baseline of AIMS screening; disseminate data to the facility staff to improve adherence to AIMS screening in adult patients taking antipsychotic medications. Additionally, this project will provide education to providers on the current literature finding related to tardive dyskinesia including up to date recommendations and protocol for screening and treatment.

The questions for this project is:

1. In patients 18 years old or greater, who are prescribed a neuroleptic medication in a Midwestern urban mental health outpatient setting, what is the effect of implementing AIMS screening?
    a) How many were screened using the AIMS scale before and after implementation?
    b) What is the rate of positive AIMS score before and after implementation?
    c) When there is a positive AIMS score; what percentage had a change made to the treatment plan before and after implementation?
    d) Was there a difference in results as it relates to demographic data, including age, race/ethnicity, neuroleptic medication type, and diagnoses before and after implementation?

Review of Literature

A review of literature was conducted through University of Missouri-St. Louis library databases including CINHAL, Public/Publisher MEDLINE (PubMed), and Psychological Information (PsycINFO) databases for relevant articles related to tardive dyskinesia in the population of patients taking antipsychotics. Searches for articles were conducted on these databases from 2015 to 2019. Keywords used were *tardive dyskinesia, antipsychotics, adherences, AIMS, neuroleptic medication*. Initial results yielded over 3,000 findings which decreased to 16 based upon relevance to topic and the keywords used (Appenidix A). The majority of the articles used had publication dates within the past 5 years while a few others were slightly older. Access to more current releases of information were limited due to membership and availability.

Antipsychotics and Tardive Dyskinesia

Typical antipsychotics also known as first-generation antipsychotics have been associated with higher rates of tardive dyskinesia as compared to second generation antipsychotics. (Dolder & Jeste, 2003; Frei, 2019; Robert, 2019; and Solmi, Pigato, Kane, & Correll, 2018). First generation antipsychotics tend to occupy 85% of the D2 dopamine receptors while second generation antipsychotics tend to occupy 35% to 75% (Frei, 2019). Furthermore, a meta-analysis looking at 41 studies of patients with various psychiatric disorders treated with antipsychotics showed tardive dyskinesia prevalence to be 30.0% with first generation antipsychotics and 20.7% with second generation antipsychotics use (Frei, 2019). A longitudinal study of 352 outpatients with psychiatric disorders maintained on antipsychotics with four year follow up showed a cumulative

incidence of tardive dyskinesia at 44.9% with first generation antipsychotics and 24.1% with second generation antipsychotics use at six months (Frei, 2019).

Dopamine D2 blocking antipsychotic drugs work by accelerating firing in the cholinergic interneurons, then by increasing acetylcholine release which acts at M1 receptors, ultimately leading to motor side effects (Miller, 2009). As a result of decreased blockage of the D2 dopamine receptors, second generation or atypical antipsychotics have a significantly lower risk of progressing from borderline to definitive tardive dyskinesia (Dolder & Jeste, 2003). Currently, there is no safe dose of dopamine receptor blocking agents and the spectrum for a new onset of tardive dyskinesia varies from as early as 17 days following exposure of a dopamine receptor blocking agent to many years following initiation (Citrome, 2017).

Along with dopamine receptor blocking agents, there are several other known risk factors for tardive dyskinesia including the duration of mental health illnesses, type of antipsychotic agent, cumulative dose of dopamine receptor blocking agents, advanced age, female sex, and African American and Caucasian ethnicity (Frei, 2019; Solmi Pigato et al., 2018). Additional unmodifiable patient-related and illness-related risk factors include longer illness duration, intellectual disability and brain damage, negative symptoms in schizophrenia, mood disorders, cognitive symptoms in mood disorders, and gene polymorphisms involving antipsychotic metabolism and dopamine functioning (Solmi et al., 2018).

The higher incidence of tardive dyskinesia as it relates to the above mentioned risk factors indicates a need for providers to pay closer attention when prescribing medication for efficacy and tolerability ratios especially when choosing antidopaminergic

drugs and determining the frequency of tardive dyskinesia ratings. With regard to antidopaminergic treatment choice, providers should use antidopaminergic treatment only when indicated and for as short a period as necessary. Second-generation antipsychotics are preferable over first-generation antipsychotics. Choose antipsychotics with a lower propensity to cause acute motor syndromes (Solmi et al., 2018). Frequent starting and stopping of antipsychotic medication should be avoided. If necessary, medication should be tapered slowly (Solmi et al., 2018).

From this information, we can assume that providers are more apt to prescribe atypical antipsychotics over first generation antipsychotics; however, this is not always the case. When individuals have been stable on typical antipsychotics for many years, it may be difficult or even detrimental to alter the treatment plan. In this case, more patients are susceptible to undesirable side effects of tardive dyskinesia due to the extended period of time taking antipsychotics.

Quality of Life

Surveys taken in an outpatient setting on individuals with possible tardive dyskinesia reveal that 70% to 80% were aware of their movements and 50% to 60% felt embarrassed by them (Robert, 2019). With use of a Real-World Evaluation Screening Tool, Robert (2019) discovered that about 30% of patients who had Tardive Dyskinesia reported moderate to extreme difficulty in performing usual activities including work, housework and leisure activities. Furthermore, almost half of patients who had possible tardive dyskinesia, experienced moderate to extreme anxiety compared to the 40% of patients who did not (Robert, 2019).

With use of the Unified Dyskinesia Rating Scale (UDysRS) Pahwa, Isaacson, Jimenez-Shaheed, Malaty, Deik, Johnson, & Patni, (2019) assessed the impact of tardive dyskinesia. In this study, 10 activities of daily living were assessed including speech, chewing and swallowing, eating tasks, dressing, hygiene, handwriting, doing hobbies and other activities, walking and balance, public and social settings, and exciting or emotional settings. Information gathered from the (UDysRS) reveal that out of 196 individuals 73% were affected by tardive dyskinesia at least a mild impact on walking and balance. Additionally, the impact on public and social settings along with exciting and emotional setting were greater than or equal to 70% (Pahwa et al., 2019).

Mortality risks and Healthcare Cost

In addition to poor quality of life, tardive dyskinesia has had a significant impact on healthcare cost. Severe tardive dyskinesia could directly result in increased mortality through exhaustion, falls, poor nutrition, dysphagia, and pneumonia (Meara & Hobson, 2000). According to Madubueze, Hammonds, and Lindfors (2019) higher healthcare cost was primarily related to patients with tardive dyskinesia who experienced hospitalizations (56% and 17% for mental healthcare costs) and emergency room visits (62%; mental healthcare cost 27%). Assessing for tardive dyskinesia at the preventative level, may help to decrease the healthcare burden.

Abnormal Involuntary Movement Scale (AIMS)

Clinically assessing patients for tardive dyskinesia requires careful observation. Although other scales exist, the Abnormal Involuntary Movement Scale (AIMS) is arguably the best known and has also served as the primary outcome measure for recent studies of agents recently approved by the US Food and Drug Administration (FDA) for

the treatment of tardive dyskinesia (Citrome, 2017). AIMS was developed by the Psychopharmacology Research Branch of the National Institute of Mental Health (Brasic, 2018). The test is a simple 14-item checklist that can be done by most providers in under 10 minutes. An AIMS score of at least 2 (i.e., mild) in 2 or more body regions or a score of 3 (moderate) or 4 (severe) in at least one body region in a patient with at least 3 months of cumulative antipsychotic drug exposure equates to a probable diagnosis of tardive dyskinesia (American Psychiatric Association, 2013). AIMS is typically administered every 3 to 6 months to monitor patients at risk for tardive dyskinesia, or more frequently as indicated (Johnson, 2017). Baseline screening is recommended before patients begin taking a neuroleptic medication, whenever the dosage is changed, and at regular intervals as recommended by the healthcare provider (Kane et al., 2018). If a patient presents with new symptoms consistent with tardive dyskinesia or if the provider observes new abnormal movements, an AIMS screening is also indicated and should be performed. A full examination is warranted, especially since the presentation of tardive dyskinesia varies over time and may worsen due to various factors including emotional stress, leading to a necessary repeat examination (Brasic, 2018). Although, the AIMS is not used as a diagnostic measure, it does serve as a comprehensive screen to monitor a person's progress over time (Citrome, 2017).

PDSA Cycle

For improving the quality of healthcare delivered, the Plan-Do-Study-Act cycle (PDSA) is a preferred framework and scientifically valid process for testing change. The PDSA cycle is an iterative, four step model for improving a process (Christoff, 2018). The PDSA cycle provides a framework that develops, tests, and implements changes

leading to improvement. The PDSA cycle helps stakeholders to identify gaps in interventions prior to implementation, ultimately providing guidance on whether or not a project is going to succeed and helps identify learning opportunities and areas that need growth (Christoff, 2018). With regard to improving adherence rates to AIMS testing, the PDSA cycle can help implementing an intervention that improves patient outcomes and improving current practices being used. The learning and improvement in outcomes may be achieved through testing the changes made and measuring for improvement using small, incremental changes for each cycle.

For this quality improvement project, the plan included recruitment of all stakeholders to be a part of the decision-making process. All roles and responsibilities were clearly identified. Meetings were used to establish the aim of the project and determined the goals to be accomplished. The aim was clearly defined; to improve AIMS screening. Dissemination of information and education on AIMS screening was introduced to the stakeholders of the agency as a way to improve AIMS screening rates. At this time, a data collection tool will be created to record baseline data as well as current findings. In the study portion of the cycle, all findings will be analyzed and processed to determine areas of improvement and unintended outcomes. The final step in the PDSA cycle will be to make use of the results and develop a standardized approach to for long term improvements agency wide.

Methods

Design

This quality improvement project used a descriptive cohort design. PDSA cycle will be implemented. A retrospective and prospective medical record review was used to determine pre-post education effectiveness for AIMS screening.

Setting

The setting for this project was a Midwestern urban behavioral health outpatient

treatment facility. This organization provides services to 2,400 persons annually for various behavioral health concerns including substance abuse and mental illness. This facility is the only behavioral health center within the area with the federal designation of "Certified Clinical Behavioral Health Organization." This organization has now been restructured and now offers a continuous treatment team approach, offering support 24 hours a day, 365 days a year. Individual, group, and family outpatient therapies built on our strength in provide evidence-based practices to address a diverse area of mental health needs.

Sample

A convenience sample of 70 patient records of adults 18 and older who have a psychiatric diagnosis and who are currently prescribed a neuroleptic medication. Inclusion criteria included adults 18 and older taking typical and/or atypical antipsychotics on the Forensic Assertive Community Treatment Team (FACT). Exclusion criteria included individuals who are not currently prescribed any antipsychotics and those who are not a part of the FACT team.

Approval

This project obtained approval from the University of Missouri-St. Louis doctoral committee, graduate school, and Institutional Review Board (IRB). Additionally, approval was obtained from the Director of Nursing at the behavioral health outpatient organization. With records review and no collected identifiers, minimal risk were not associated with this quality improvement project.

Data Collection and Analysis

Data was collected via medical record review from March, 2020 to May, 2020. All data was de-identified to minimize breach of confidentiality. Pre education data was

collected, using retrospective medical record review, from May through October 2019. Post education data was collected, using a prospective medical record review, for March 2020. Data collected included age, race/ethnicity, neuroleptic medication type, diagnoses, when AIM screening was completed in the last 6 months, results of AIMS screening, and if follow up treatment medications were prescribed, for both pre and post education groups (see Table 2) Data from the pre education group was coded as M01, M02, MO3, etc. , whereas the charts from post education were coded as J01, J02, J03, etc. The data was collected and stored on a password protected computer and password protected jump drive by the primary investigator. The data was analyzed using Intellectus Statistics, descriptive statistics and t-test was used to measure the difference between pre and post education groups.

Procedures

A team of key stakeholders was formed in October 2019, including the primary investigator, practice physicians, nurses, and office staff. There were several meetings regarding AIMS screening, high rates of tardive dyskinesia as it relates to neuroleptic medications and increasing the rate of AIMS testing from 6 months to 3 months as a potential standardized AIMS screening tool facility wide. A decision was made to utilize and implement the AIMS screening tool at a 6-month interval into the practice. This quality improvement project used this information will be used to develop an educational offering to be provided to all clinicians performing an AIMS screening to use as a standard guideline within the facility. Information was shared via email communication, individual meetings with key stakeholders, and posters throughout the facility (see Figure B).

Results

Of the 70 participants that were initially included in the chart review, 17 did not meet inclusion criteria pre and post implementation including not being prescribed a neuroleptic medication, poor documentation of an AIMS screening, medication prescribed, or the patient being difficult to locate. The total number of participant charts reviewed pre educational offering from May through October 2019 and post educational offering in March 2020 was 53. All demographic data refers to both pre and post implementation groups. The age of the patients ranged from 22-76 years in both pre and post implementation groups (*m*=50.6; *sd=13.9*) (see Table 2). Amongst all race and ethnicities included, African Americans had the highest frequency at (*n*=35, 66%) (see Table 2). Caucasians had the second highest frequency at (*n*=16, 30%). The other two categories of ethnicities included Asian and Biracial which had the lowest frequency at (*n*=2, 4%) *Schizophrenia* was the most frequently observed category of diagnoses (*n*=24, 45%). Schizoaffective disorder, bipolar type had the second highest frequency at (*n*=18, 34%). Schioaffective disorder, depressive type had (*n*=6,11%) a lower frequency compared to the other diagnoses. The majority of participants were prescribed Second Generation Antipsychotics (SGA) (*n*=37, 70%) (see Table 2). The most frequently observed category of gender was male (*n*=45, 85%) (see Table 2)

Of the 53 charts reviewed pre implementation, 62% (*n*=33) had an AIMS screening completed. Those same charts were reviewed again in March following the implementation of the educational offering in which 72% (*n*=38) had an AIMS screening performed showing an increase of 10% (see Figures 3 &4). Of those screened pre implementation, 6% (*n=3)* had a positive AIMS scores, whereas no (*n*=0, 0%) positive

AIMS scores were recorded post implementation. All participants with a positive AIMS screen had a change to their treatment plan including further follow up, medication changes, and an additional AIMS screening.

The results of the Chi-square test were not significant based on an alpha value of 0.05, $\chi^2(1) = 0.71$, $p = .399$, suggesting that the AIMS screenings performed prior to the educational offering and the ones performed post educational offering could be independent of one another. This implies that the observed frequencies were not significantly different than the expected frequencies (see Table 1).

Discussion

The results suggest that implementing an educational measure to providers about the importance of and frequency of AIMS screening may increase adherence rates. There was an increase in the number of AIMS screenings conducted from 62% to 72% following the educational offering to participating providers (see Figures 3&4). Although not statistically significant, the improvement in the numbers of screenings have helped to identify early symptoms of Tardive Dyskinesia and enable early treatment, especially for those who are at an increased risk.

While most patients screened negative for being at risk for Tardive Dyskinesia, all who screened positive required follow up treatment including but not limited to being lowering the dosage of their current medication, supplementing with a dopamine depleting medication such as Ingrezza (valbenazine), an additional AIMS screening at 3 months, and over the counter medications that would help with symptoms of Tardive Dyskinesia (melatonin, vitamin B6, or Ginkgo biloba). Additionally, those who did

screen positive had a negative result in the post implementation data collection period. Furthermore, the group of participants that had a positive AIMS screening were provided education on the signs and symptoms of tardive dyskinesia .

These clinically significant results further emphasize the importance of performing routine AIMS screenings for at risk populations. This data opens up the opportunity for continued education or professional development with regard to diagnosing and treatment. Additional information obtained through data analyses builds on the existing evidence that First Generation Antipsychotics (FGA's) have an increased tendency to cause tardive dyskinesia compared to Second Generation Antipsychotics (SGA's) (Dolder & Jeste, 2003; Frei, 2019; Robert, 2019; and Solmi, Pigato, Kane, & Correll, 2018). Further, the demographic data revealed that older African American males prescribed neuroleptic medication were the only participants who screened positive for tardive dyskinesia within the entire group of participant charts reviewed. This information confirms the risk factors presented earlier including the type of antipsychotic agent (FGA), African American ethnicity and advanaced age that have all been linked to tardive dyskinesia (Frei, 2019; Solmi Pigato et al., 2018).

The generalizability of the results is limited by time constraints, and the complexity of participants. Following the implementation of an educational offering, there was a short turn around before the collection of post educational data was to be performed. This makes it difficult to collect data related to the frequency of AIMS screenings over time. Standard guidelines recommend routine screening at least every six months, therefore if a person was previously screened, a change wouldn't be observed in post study measurements. Further research is needed to confirm the impact of

implementing an educational offering for routine AIMS screenings to healthcare providers and the effect on adherence rates over a longer period of time. A future quality improvement project with a longer timeline may yield more statistically significant results.

Difficulty locating participants also impacted the results as AIMS screenings can't be performed if clients aren't present for the assessment. Many of the clients are homeless and have no way of being reached unless they decide to show up at random. Additionally, for some providers, time constraints and complex schedules didn't allow for additional time to administer an AIMS screening. This limitation demonstrates a need to introduce more clinicians into practice in an effort to improve adherence rates to AIMS screening within this facility.

Conclusion

This project aimed to establish baseline of AIMS screening; disseminate data to the facility staff to improve adherence to AIMS screening in adult patients taking antipsychotic medications. Based on the data analysis, it can be concluded that implementing educational offering to healthcare providers does improve the rate of AIMS screenings. The results indicate a 10% increase in AIMS screening post implementation compared to the pre implementation screenings. Although not statistically significant, this quality improvement yielded clinically significant results which will impact the current medical practice at this Midwestern outpatient psychiatric facility. Providers will now be able to identify early results of tardive dyskinesia, screen routinely, become aware with known risk factors as it relates to tardive dyskinesia, and

create a treatment protocol in the event that someone screens positive.

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Table 1

Observed and Expected Frequencies

AIMS Screening Performed (Pre and Post)	No	Yes	χ^2	*df*	*p*
No	7[5.66]	13[14.34]	0.71	1	.399
Yes	8[9.34]	25[23.66]			

Table 2

Frequency Table for Nominal Variables

Variable	*N*	*%*
Race_Ethnicity		
African American	35	66.04
Asian	1	1.89
Biracial	1	1.89
Caucasian	16	30.19
Missing	0	0.00
AIMS_Screening Performed_Pre		
No	20	37.74
Yes	33	62.26
Missing	0	0.00
AIMS_Screenings perfromed Post		
No	15	28.30
Yes	38	71.70
Missing	0	0.00
Diagnosis		
F20.9	24	45.28
F25.0	18	33.96
F25.1	6	11.32
F29	1	1.89
F31.11	1	1.89
F31.2	1	1.89
F33.3	2	3.77
Missing	0	0.00
Results from AIMS screening Pre		
Negative	50	94.34
Positive	3	5.66
Missing	0	0.00
Results_from_AIMS_screening_Post		
Negative	53	100.00
Missing	0	0.00
Follow_up_required		
No	50	94.34
Yes	3	5.66
Missing	0	0.00
Drug_Type		
FGA	15	28.30
SGA	37	69.81
SGA and FGA	1	1.89

Missing	0	0.00
Gender		
Female	8	15.09
Male	45	84.91
Missing	0	0.00

Figure 1: Abnormal Involuntary Movement Scale

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. Select 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	0 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

Figure 2 Informational

Brochure

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Have you checked for tardive dyskinesia lately?

Your Guide to AIMS Testing

Figure 3

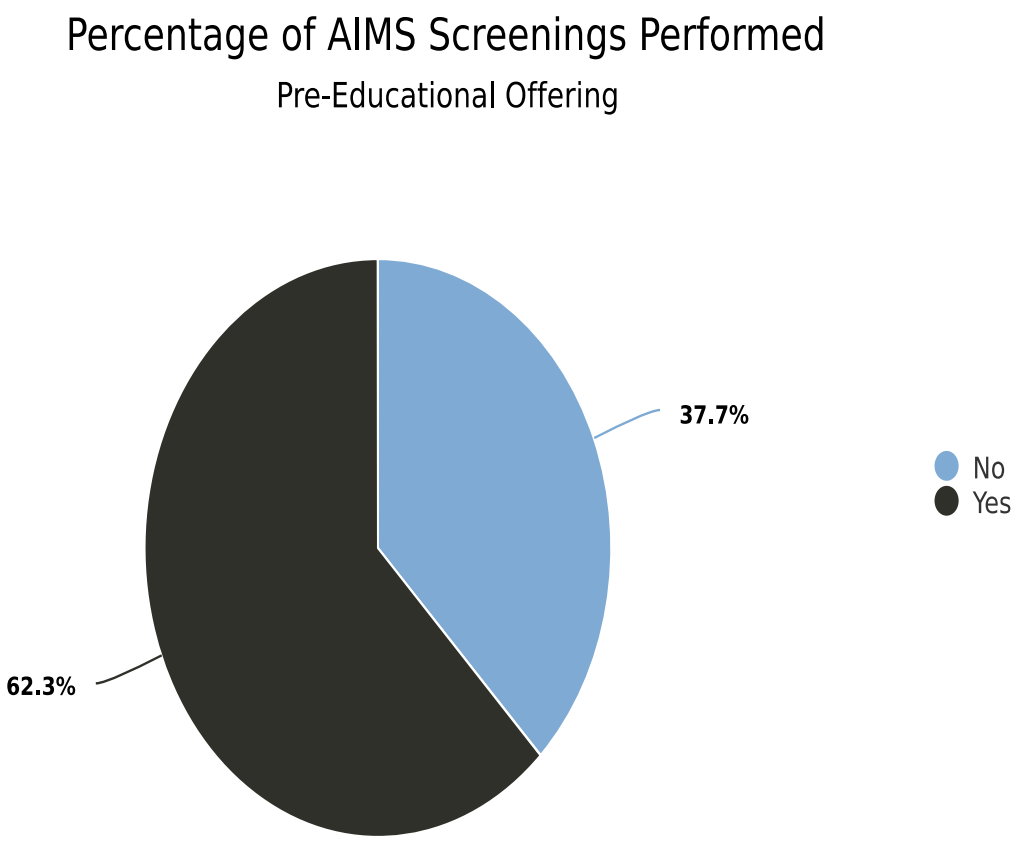
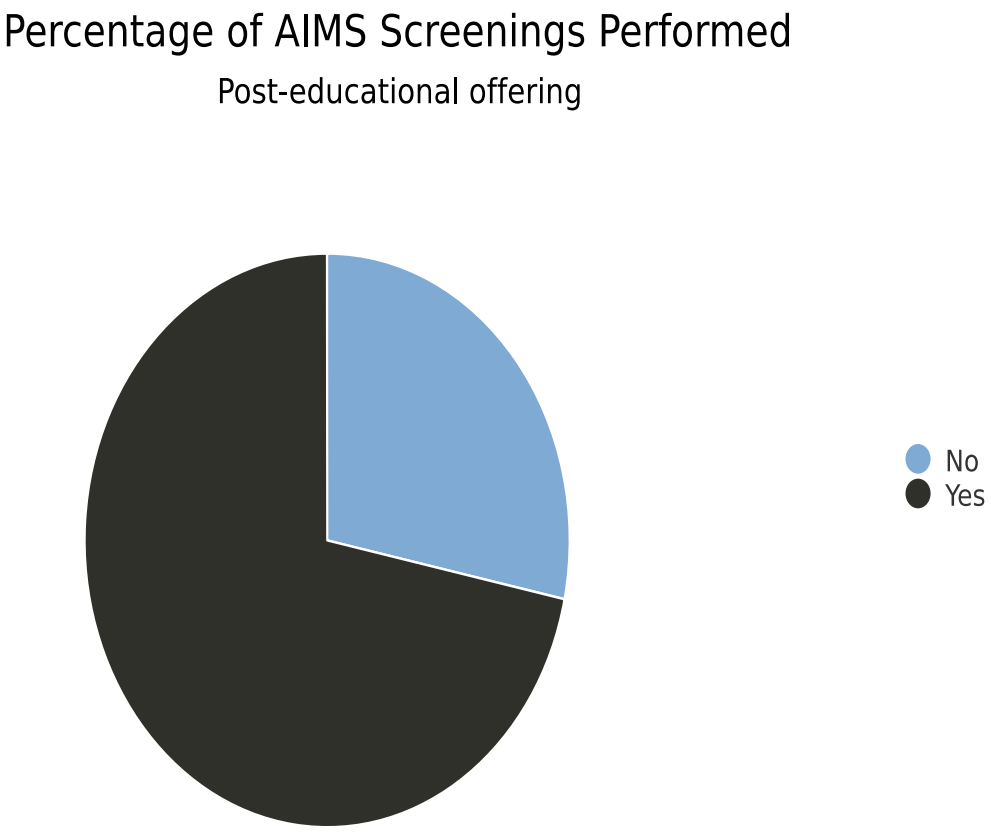

Percentage of AIMS Screenings Performed
Pre-Educational Offering
37.7%
62.3%
No
Yes

Figure 4


Percentage of AIMS Screenings Performed
Post-educational offering
No
Yes