IMPLEMENTATION OF ABNORMAL INVOLUNTARY MOVEMENT SCALE (AIMS) PROTOCOL FOR EARLY DETECTION OF TARDIVE DYSKINESIA IN OUTPATIENT PSYCHIATRIC CLINIC

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INTRODUCTION

- TD is a potentially irreversible adverse side effect of Antipsychotic drugs
  - First-generation antipsychotics (FGA) and Second-generation antipsychotics (SGA).
  - 1 in 3 patients on FGSs is affected with TD, versus1 in 5 patients on SGAs (Loughlin et al.,2019)

- 20% of patients on antipsychotic drugs will develop TD in their lifetime (CDC, 2018; Vasan & Padhy, 2012)

- TD affects the face, tongue, lip, neck, lower and upper extremities of the body

- AIMS tool is the gold standard for screening TD (Kane et al., 2018)

- Lack of identification has exposed pts to stigmatization, shame, poor medication adherence, and poor quality of life (Loughlin et al., 2019; Kremens, 2019; Desai et al., 2018).

PROBLEM STATEMENT

- TD management remains challenging and problematic to HCPs, even with the discovery of the SGA after 1970.

- Lack of adequate knowledge amongst the HCPs (Jain & Correll, 2018; Citrome & Saklad, 2020)

- Poor patient comprehension of symptoms (WHO, n.d.)

- Higher Healthcare cost utilization for those with TD, ($54,656 vs.$28,777) (Caroll & Irwin, 2019)

- Exacerbation of social stigmatizations, low self-esteem, unemployment, behavioral problems, and medication noncompliance (Jain & Correll, 2018; Carbon et al., 2018).

- The impact of TD on patients, families, and the healthcare system has been well documented and shown to be a genuine concern of interest (Kumsa et al., 2020; Desai et al., 2018)

ADDRESSING THE GAP WITH EVIDENCE-BASED INTERVENTIONS

- Early identification using the AIMS screening tool (Citrome & Saklad, 2020; APA, 2020; Kane et al., 2018; AAN, 2013).

- Utilization of FDA-approved drugs for the treatment (Kane et al., 2018, APA, 2020, AAN, 2013).

- Annual education for the providers (Kane et al., 2018)

AIM (PURPOSE)

The aim of this DNP project was to :

- Increase HCPs' knowledge in using the AIMS tool protocol in screening for TD in patients on antipsychotic medications

- Increase early detection of TD in patients on antipsychotic drugs and reduce or prevent the adverse side effects of these drugs

- Improve documentation of TD screening in patients' electronic medical records (EMRs).

PROJECT OBJECTIVES

In the 5-week timeframe of this Scholarly DNP project, the PI anticipated:

- An increase in knowledge and skill regarding TD and the AIMS screening tool by 80% pass rate post-educational intervention

- An 80% increase in new TD diagnosis using the evidence-based AIMS protocol post-implementation.

- A 90% increase in AIMS assessment documentation in patients' EMR

METHODOLOGY (PROJECT PLAN)

- Plan: Donabedian quality improvement health services model was utilized in planning from June 6 to July 9, 2022

- Population: Healthcare providers (HCPs)

- Setting: outpatient psychiatric medical clinic in the Inland Empire of Southern California

- Intervention: Educational presentation via PowerPoint (TD overview and AIMS tool assessment demonstration)

- Sample size: 16 participants, 12 providers (NPs and psychiatrists) and four non-providers (therapists, medical assistants, social workers)

- Delivery Modality: In-office and online versions were used due to the Covid-19 pandemic

- Data collection: Retrospective data collection before and after implementation for analysis

- Ethnic/human protection: Participation was voluntary. All personal information was strictly confidential by adhering to the HIPAA guidelines.

RESULT/FINDINGS
(KNOWLEDGE)

- The mean test score jumped from 93% to 98% (see table)

Descriptive Statistics

	N Statistic	Range Statistic	Minimum Statistic	Maximum Statistic	Mean Statistic	Std. Deviation Statistic	Skewness Statistic	Skewness Std. Error	Kurtosis Statistic	Kurtosis Std. Error
pre-test score	16	30	70	100	93.19	8.635	-1.413	.564	2.187	1.091
post-test score	16	10	90	100	98.75	3.416	-2.509	.564	4.898	1.091
Valid N (listwise)	16									

RESULT/FINDINGS (KNOWLEDGE)

- There was a statistically significant improvement in knowledge, as evidenced by the p-value of <0.05 (see table)

Paired Samples Test

| | | Paired Differences | | | | | | | Significance | |
| | | | | | 95% Confidence Interval of the Difference | | | | | |
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	One-Sided p	Two-Sided p
Pair 1	pre-test score - post-test score	-5.562	8.816	2.204	-10.260	-.865	-2.524	15	.012	.023

PRE AND POST-TESTS EDUCATIONAL SCORES

Pre and Post-tests educational scores

	Participant ID	Pre-test scores	Post-test scores
1	0	100	100
2	712	100	100
3	360	100	100
4	224	90	90
5	728	90	100
6	403	100	100
7	786	100	100
8	951	90	100
9	439	100	100
10	666	90	90
11	556	100	100
12	949	90	100
13	852	70	100
14	236	81	100
15	894	100	100
16	120	90	100
	Total	1491(93%)	1580 (98%)

RESULT/FINDING (KNOWLEDGE)

TEST SCORES

RESULT/FINDING
(KNOWLEDGE)

Test Scores

98 | 93
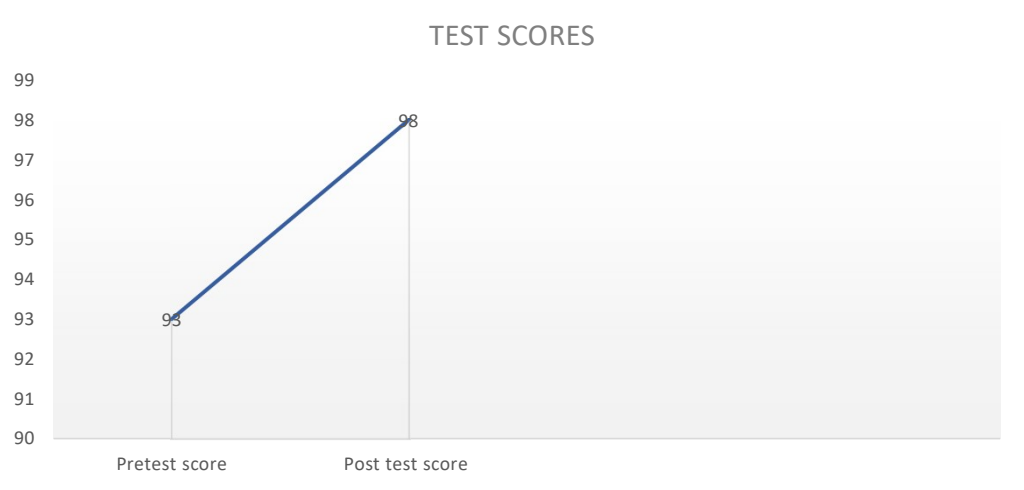
■ Pre Intervention ■ Post Intervention
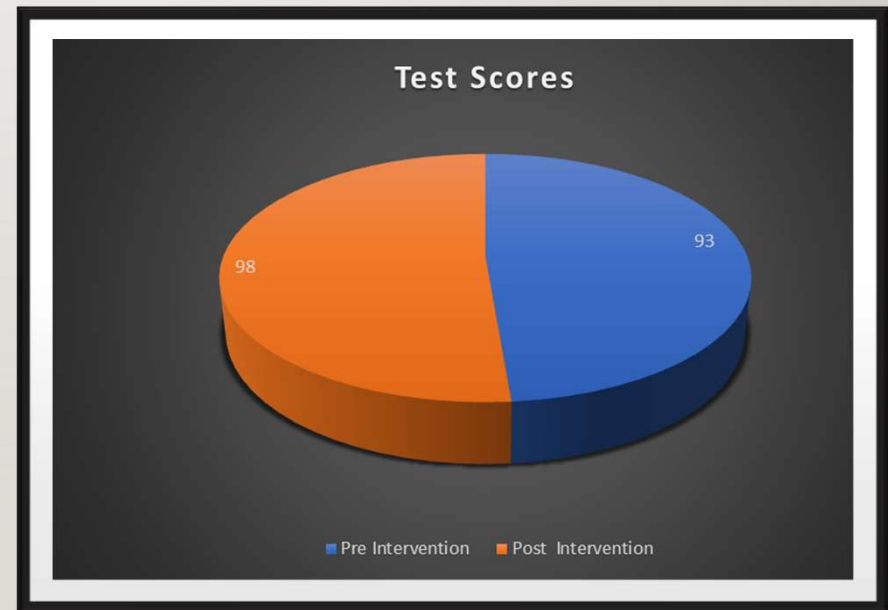
KNOWLEDGE IMPROVEMENT
THE GOAL IS 80% IMPROVEMENT POST-EDUCATIONAL INTERVENTION.

Test Scores
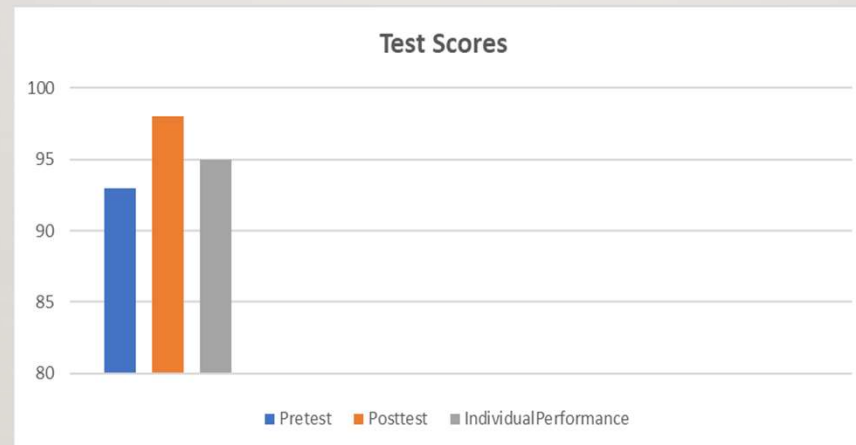
RESULT/FINDINGS (DOCUMENTATION)

The project objective was a 90% improvement post-intervention

Provider assigned identifiers	Number of patient records considered	Pre-intervention AIMS documentation	Post-intervention AIMS documentation
1	30	29	30
2	30	0	30
3	30	0	20
4	30	0	26
5	30	0	30
6	30	0	28
7	30	0	30
8	30	0	30
9	30	0	20
10	30	5	0
11	30	**7**	25
12	30	10	30
13	n/a	-	-
14	n/a	-	-
15	n/a	-	-
16	n/a	-	-
Total	360	51(14%)	309(86%)

DOCUMENTATION OF AIMS ASSESSMENT IN PATIENTS' EMRS
OBJECTIVE GOAL WAS 90% IMPROVEMENT POST-INTERVENTION
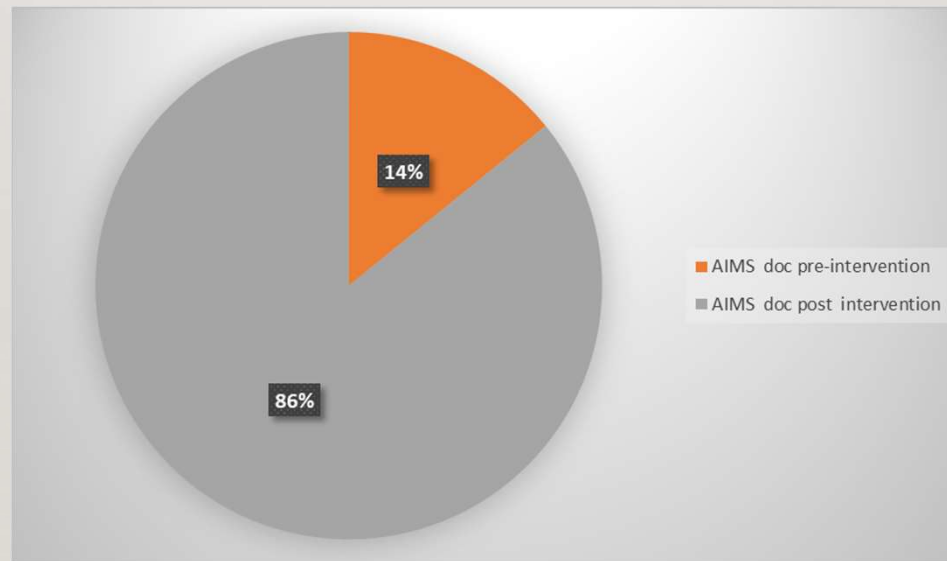
RESULT/FINDINGS
(TD DIAGNOSED)

- The Chi-square test for goodness of fit for the TD diagnosed post-educational intervention compared to the nationwide study, which states that at least 20% of patients treated with antipsychotic medications will develop TD in their lifetime, indicates considerable statistical significance with $p < .001$, supporting the nationwide study.

(see next slide)

COMPARING TD DIAGNOSED
WITH THE NATIONWIDE STUDY
THAT STATES THAT "AT LEAST
20%" OF PATIENTS ON
ANTIPSYCHOTIC DRUGS WILL
DEVELOP TD IN THEIR LIFETIME
(VASAN & PADHY, 2012).

Provider Assigned identifiers	# of chart reviewed per providers	# of TD codes (G24.01) Pre-intervention	# of TD codes (G24.01) Post-intervention	Comment
1	30	7	15	
2	30	0	3	
3	30	0	5	
4	30	0	3	
5	30	0	2	
6	30	0	2	
7	30	0	4	
8	30	0	2	
9	30	0	2	
10	30	5	3	
11	30	5	5	
12	30	5	10	
13	n/a	-	-	Non-provider
14	n/a	-	-	Non-provider
15	n/a	-	-	Non-provider
16	n/a	-	-	Non-provider
Total	360	22 (6%)	56(15%)	

NATIONWIDE PREDICTION OF TD COMPARED TO THE POST-IMPLEMENTATION TD DIAGNOSIS
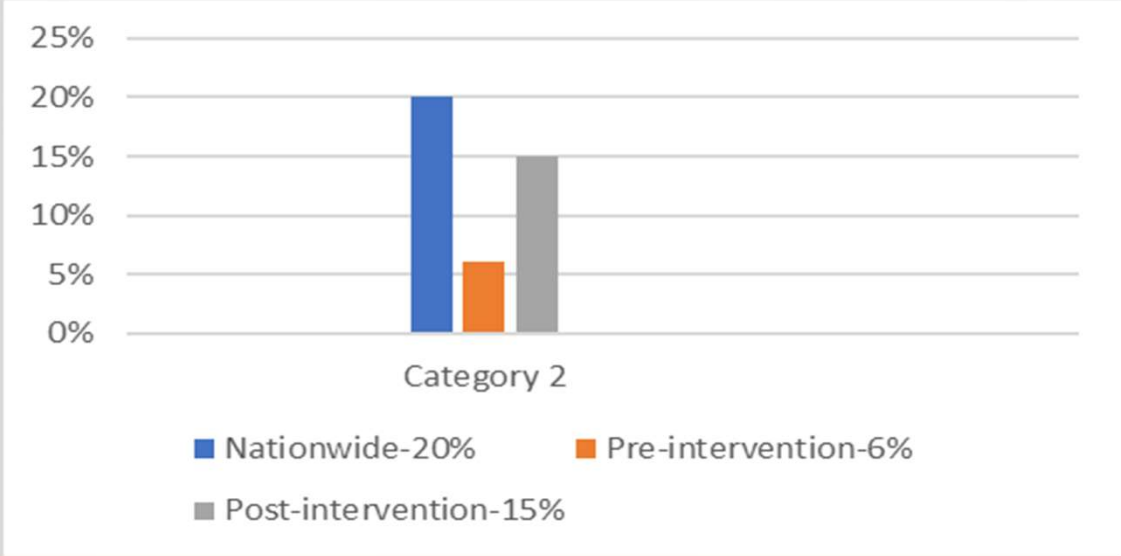
SUSTAINABILITY, IDEAS FOR FUTURE DISSEMINATION

- This DNP project contributed to the policy development of the AIMS protocol application in the medical group

- The stakeholders expressed their satisfaction and seriously considering making it part of their policy for annual refresher training for providers and non-providers and as a training module for onboarding providers, which will provide sustainability for the tool in the long run.

- This project will be presented in the quarterly meeting coming up in November for the host site.

- The project will be submitted to the doctoral project repository and at a nursing conference to disseminate the findings.

- It's advised that this project be replicated in the future with a larger sample size for generalization beyond the current project site.

DISCUSSION WITH KEY CONCLUSIONS

- TD is an irreversible adverse side effect of chronic use of antipsychotic drugs (FGA & SGA)

- There's a need for more education on TD knowledge and early identification

- AIMS screening has proven to be effective for TD identification

- Significant improvement in both knowledge and documentation of AIMS assessment in patient EMRS

- Low cost for the site, patient, and family in the long run

ACKNOWLEDGMENTS

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THE END

Q & A