

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

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*THIS PROJECT IS IN PARTIAL FULFILLMENT OF THE DEGREE  
REQUIREMENTS FOR THE DOCTOR OF NURSING PRACTICE AT TOURO  
UNIVERSITY NEVADA.*

# 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 FGAs is affected with TD, versus 1 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

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- 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)

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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

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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)

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- 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)

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

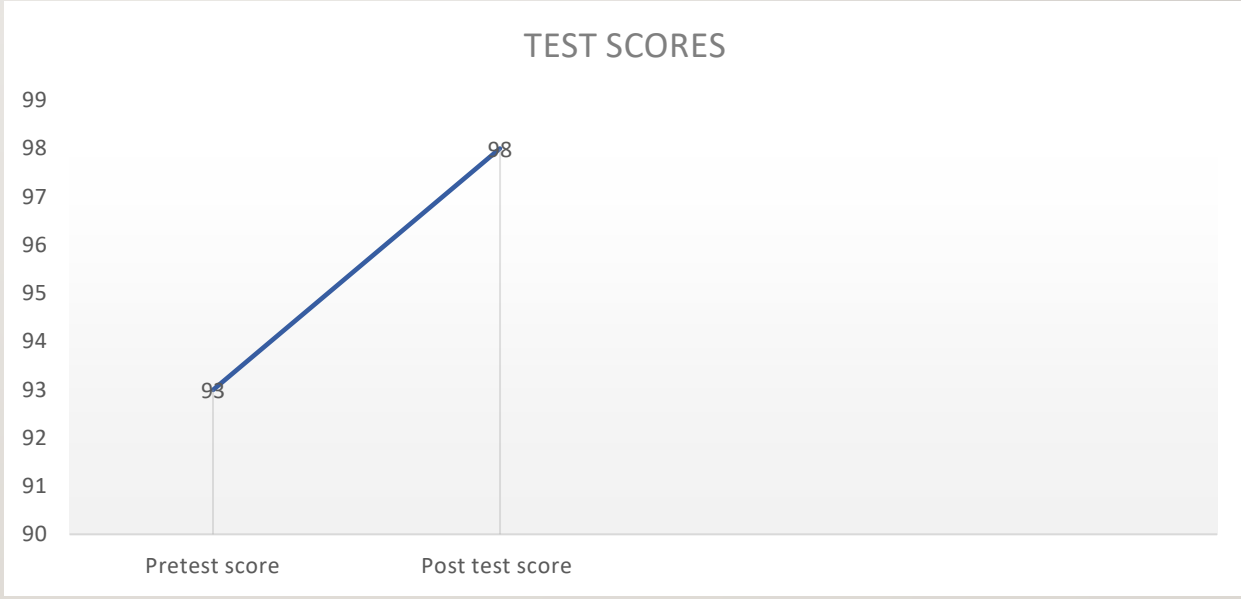
## PRE AND POST-TESTS EDUCATIONAL SCORES

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%)

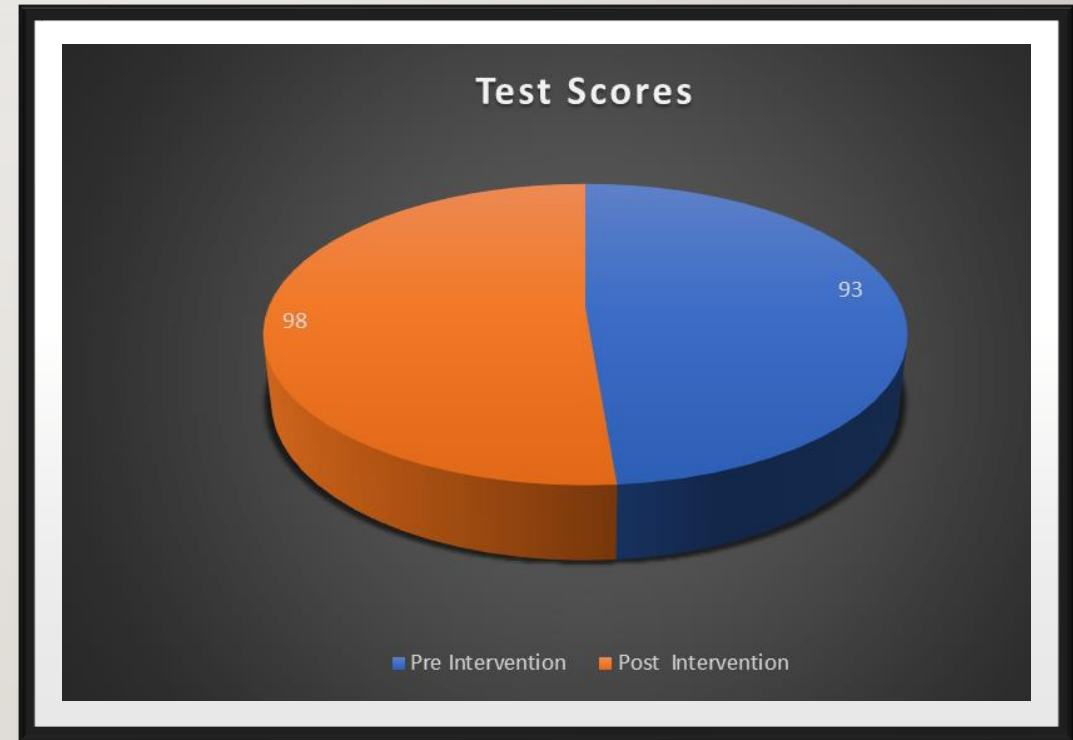
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# RESULT/FINDING (KNOWLEDGE)



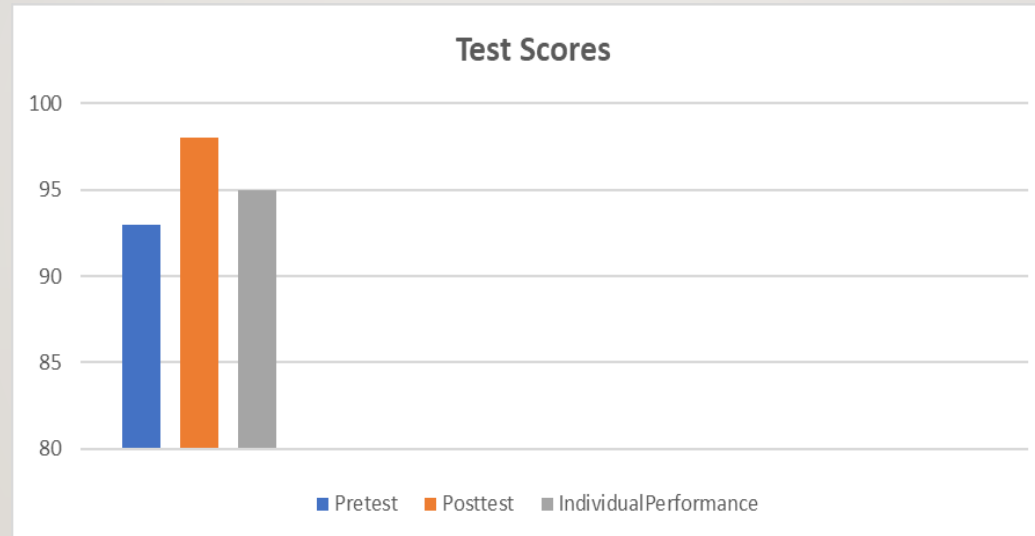
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## RESULT/FINDING (KNOWLEDGE)



**KNOWLEDGE IMPROVEMENT**  
**THE GOAL IS 80% IMPROVEMENT POST-EDUCATIONAL INTERVENTION.**

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# RESULT/FINDINGS (DOCUMENTATION)

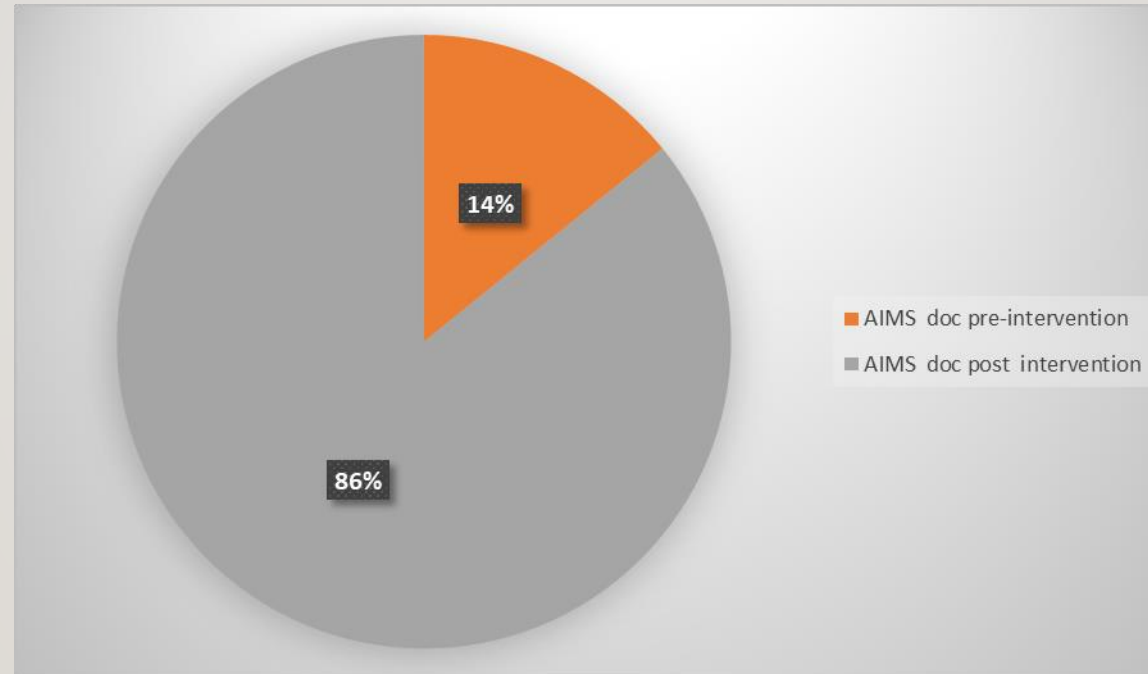
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The project objective was a **90%** improvement post-intervention

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**

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# RESULT/FINDINGS (TD DIAGNOSED)

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- 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)



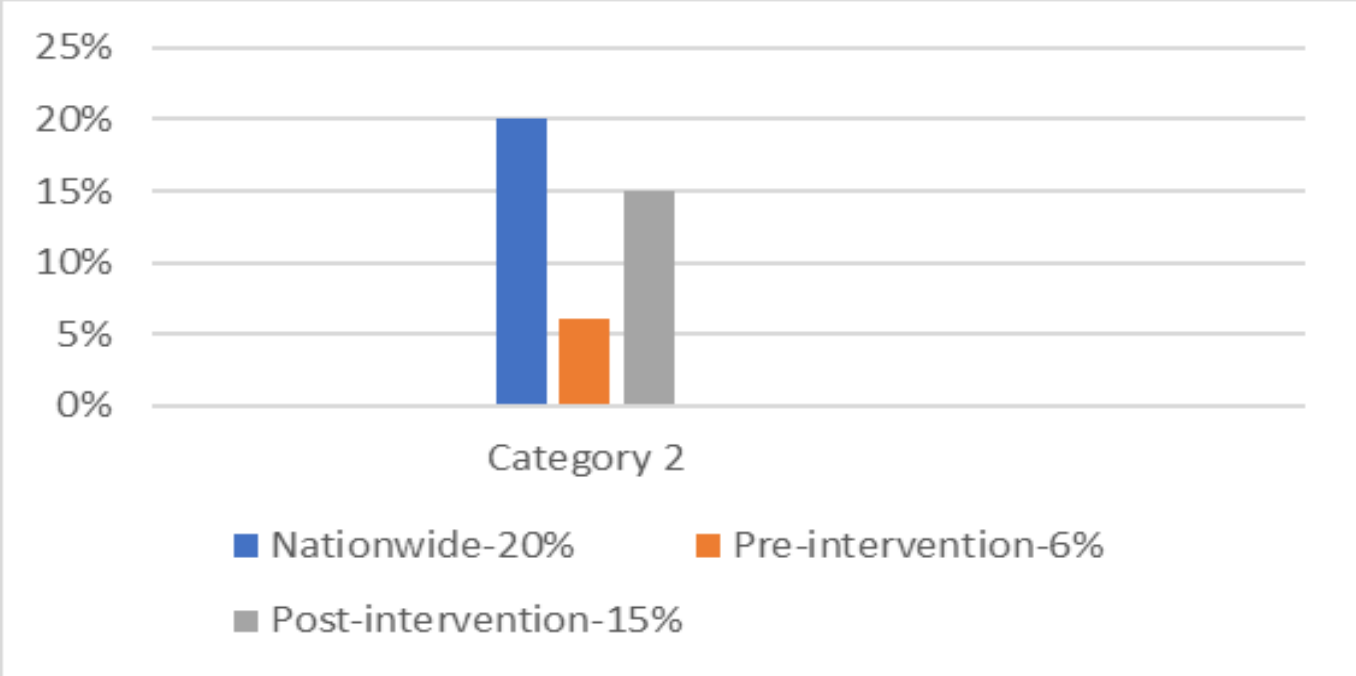
COMPARING TD DIAGNOSED WITH THE NATIONWIDE STUDY THAT STATES THAT “AT LEAST 20%” OF PATIENTS ON ANTIPSYCHOTIC DRUGS WILL DEVELOP TD IN THEIR LIFETIME (VASAN & PADHY, 2012).

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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

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# SUSTAINABILITY, IDEAS FOR FUTURE DISSEMINATION

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- 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

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- 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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This DNP project has allowed me to sincerely dig deep into mental health and learn more about the target population I have chosen to work with; with ample evidence-based resources, no patient should be left untreated or allowed to suffer. A prudent provider would provide the most basic and essential intervention to the patient by educating them on their disease process and the potential adverse side effects of their medications.

I appreciate the opportunity this DNP project has given me to witness that education can change the trajectory of care delivery. I greatly appreciate all the Touro University instructors who gave their time, energy, and patience in making this final product of the DNP a great success: Dr. Hill, Dr. Johnston, Dr. Peckham, Dr. Johnson, Dr. Astrella, Dr. Grimm, Dr. Zabriskie, Dr. Vanier, and all other faculty members of the Nursing department who, one way or the other, contributed to the accomplishment of this final project.

A special thanks to the project team committee Dr. Andrea Hill, my course instructor, who took the time to sift through my work with robust feedback that propelled this project to its final product. Also, thanks to Dr. Misie Daramola, my project mentor, who dedicated her time to guiding the project in the clinical setting; and taking my calls at odd hours to answer my "burning questions." Dr. Henrietta Nwamu, the content expert, provided her expertise and knowledge on mental health from an academic perspective. Great cheers to the Inland Psychiatric Medical Group executives and staff who supported and allowed this project to be conducted on the site. I am short of words to express my gratitude. I love you all, and you all are my heroes. Finally, to my family, who stood beside me through thick and thin in this rigorous and successful journey. My sincere appreciation to God Almighty, who made this journey fruitful. He says, "give me all your burdens, and I will carry them for you." Thanks, everyone. I love you all.



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THE END

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Q & A