

Adherence to Statins in Patients with Type 2 Diabetes: Sometimes You Just Need a Nudge

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PROBLEM STATEMENT

- Atherosclerotic cardiovascular disease (ASCVD) = cerebrovascular disease, coronary heart disease and peripheral arterial disease.
- ASCVD in patients with type 2 diabetes mellitus (T2DM) leads to an estimated \$37.3 billion dollars in spending annually (American Diabetes Association [ADA], 2018).
- ADA guidelines - most adults with T2DM should be taking at least a moderate intensity statin to decrease their risk ASCVD (ADA, 2020).
- The guidelines are followed at the project site but patients with chronic conditions are not always adherent to their medication regimens.
- Data at the site indicated that the adherence to statins in patients with T2DM ranged from 60 to 77% in the first quarter of 2020.

PROJECT PURPOSE

The aim of this project was to conduct a quality improvement intervention to determine whether in patients over the age of 40 with T2DM, the implementation of the text-based reminder function of the electronic health record (EHR) would improve the adherence to statin therapy as evidenced by improved self-reported adherence scores in a three- month period

MODEL/NURSING THEORY

Pender's Health Promotion Model was used to design a quality improvement initiative to modify adherence by introducing a situational influence in the form of text messages to support the perceived benefits and self-efficacy of the individual patients in taking their statin medication

METHODS

Participants

- Convenience sample - at least 40 years of age and had T2DM.
- Exclusion criteria - under age 40 or over 85 years of age, documented cognitive impairment, dementia, or other condition limiting ability to self manage medication.

Setting

A private primary care practice serving patients in South Florida.

Instruments/Tools

- Two self reported adherence tools were utilized in the intervention.
- Adherence Estimator® (AE) - three-item screening tool used to identify those at risk of chronic disease medication non-adherence.
- ARMS scale- twelve-item tool evaluating medication adherence in patients with chronic diseases.
- Both tools are scored on Likert type scale with a lower the score implying a higher the likelihood of adherence.
- The secondary outcome measure was the pill count adherence ratio (PCAR), calculated at the second visit. Adherence is equivalent to taking $\geq 80\%$ of the dispensed amount of their statin medication.

Intervention and Data Collection

- The tools were administered to each patient, the DNP student calculated the scores and determined each patient's potential barriers to adherence.
- These findings guided the discussion with the patient on his/her current adherence status. Education on the importance of medication adherence and the activities which could be done by the patient to support adherence to the treatment regimen were emphasized.
- The education which the patients received was then reinforced through series of individualized text message reminders.
- Each patient then had a follow-up visit within 2 to 3 months of their initial visit.
- The tools were administered, a pill count was performed, and the findings were again used to guide the discussions with the patient.

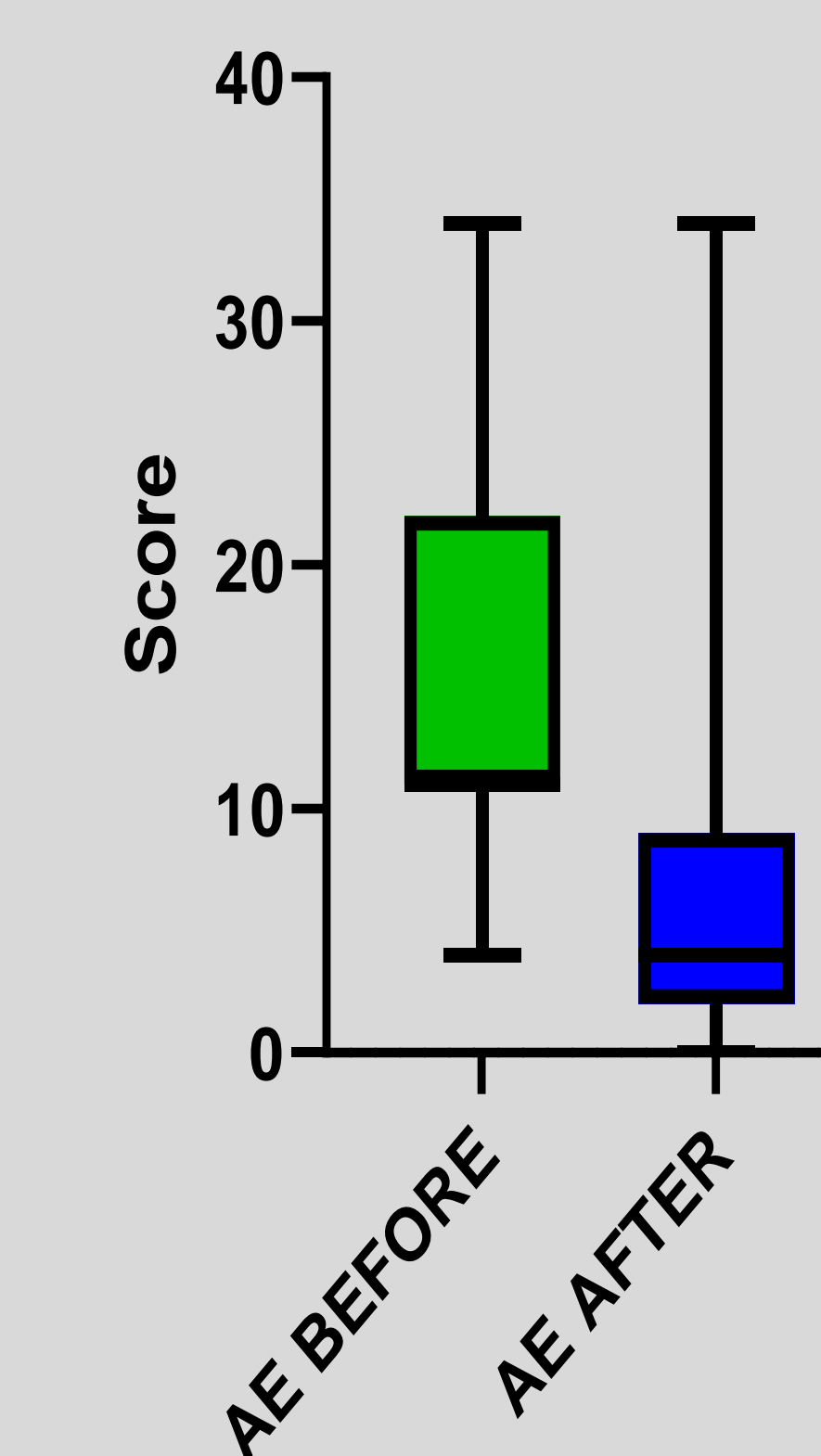
RESULTS

- 29 patients participated in the project. Age range 47 to 80 years, mean age 70.6 years. 66% were female and 34% were male.
- Each patient was sent 12 text messages.
- Paired-samples t-test were used to compare the repeat measures. The results suggest that the text intervention had a statistically significant effect on self-reported adherence scores.
- 90% of patients had a PCAR consistent with adherence at the end of the intervention.

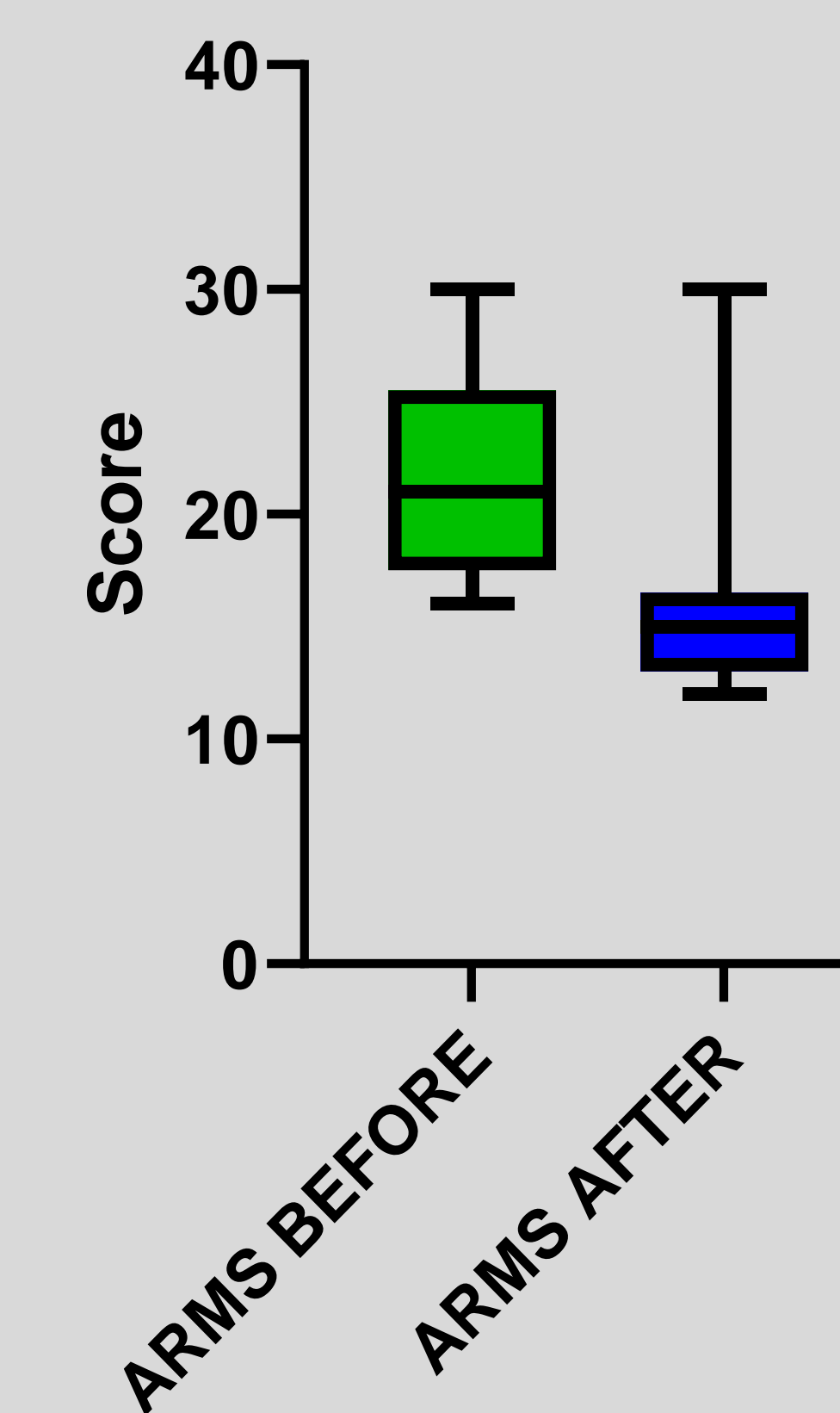
Paired Samples Statistics				
	Mean	N	Standard deviation	Standard Error of Mean
AE before	16.41	29	9.68	1.80
AE after	6.83	29	7.82	1.42
ARMS before	21.62	29	4.45	0.83
ARMS after	15.41	29	3.87	0.72

Paired Samples Tests							
	Mean	Paired Differences			t	df	Sig (2-tailed)
		Standard Error of Difference	95% confidence interval				
			Lower	Upper			
AE before to AE after	9.59	1.055	7.43	11.75	9.0902	28	0.0001
ARMS before to ARMS after	6.21	0.507	5.17	7.25	12.2414	28	0.0001

Scores on Adherence Estimator Before and After Intervention



Scores on ARMS Before and After Intervention



DISCUSSION

The discussions generated after the administration of the AE and ARMS tools revealed that non-adherence to statins in this patient group resulted from both intentional and non-intentional reasons. Having non-judgmental, open conversations allowed the DNP student to address these barriers to adherence. This was reinforced by the text messages which were sent to the patients leading to improvements in both objective and subjective adherence.

IMPLICATIONS FOR ADVANCE PRACTICE NURSING

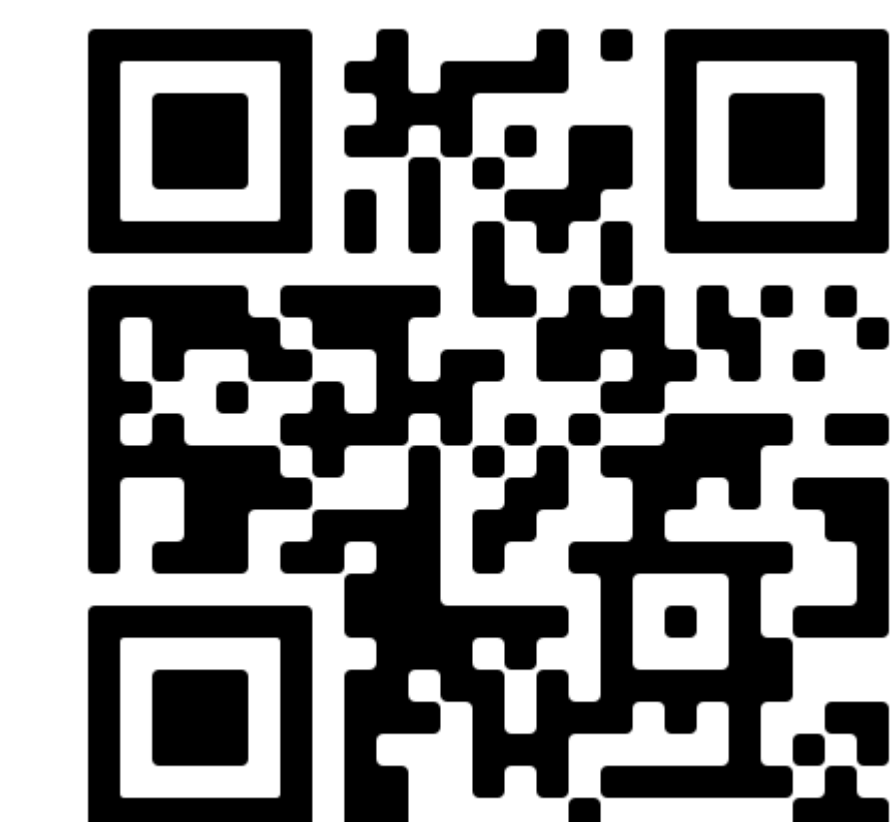
Simple, cost- effective interventions such as text messages may lead to increased adherence as shown in this small QIP. This project demonstrated that using tools to purposefully evaluate patient adherence, followed by focused education and text message reminders provided a low cost yet high impact mechanism of improving the care delivered.

SUSTAINABILITY

The QIP can easily be integrated into the care process of the clinic since it utilizes the text message functionality of the EHR. Sending text message reminders to patients which complement and reinforce the education they have received is a cost-effective mechanism of improving medication adherence, ultimately leading to improved health outcomes.

REFERENCES

- American Diabetes Association. (2020). American Diabetes Association standards of medical care in diabetes—2020. *Diabetes Care*, 43(Supplement 1), S1. <https://doi.org/10.2337/dc20-Sint>



Using individualized text message reminders can enhance adherence to statins in patients with type 2 diabetes mellitus.