

# Improving Advanced Practice Provider Knowledge and Screening for Medication Adherence in Cardiovascular Patients

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## Background

- Medication non-adherence is a widespread problem among cardiovascular patients that leads to negative patient outcomes.<sup>1-7</sup>
- One third of prescribed medications are not filled and half are not taken as prescribed.<sup>1</sup>
- Screening for medication adherence (MA) is supported by several leading cardiovascular organizations including the American Heart Association (AHA) & the American College of Cardiology (ACC).<sup>8</sup>
- Assessment of MA using self-report is comparable to other methods used for assessment.<sup>9,10</sup>
- Advanced practice providers (APPs) play a critical role in screening for MA on admission to the acute care setting.
- APPs should have knowledge of MA & access to a screening tool within the electronic medical record (EMR) to provide comprehensive care to cardiovascular patients.

## Purpose & Aims

**Purpose:** To examine if an education module improves APP knowledge of MA & changes current APP screening practices for MA in cardiovascular patients upon admission to the acute care setting.

- Aim 1:** To improve cardiology APP knowledge of MA & screening for MA by 20% over 12-weeks using an educational module
- Aim 2:** To improve screening for MA by cardiology APPs using DOSE-Nonadherence in cardiovascular patients by 40% over 6-weeks.

## Methods

**Design:** Quasi-experimental pre- & post- intervention

**Setting:** Large urban integrated academic medical center in the Southeast within the Division of Cardiology

**Sample:** Convenience sample of APPs in the Division of Cardiology

**Intervention:** Education module on MA & screening for MA in the EMR

**Measures:**

- 10-item surveys using a 5-point Likert scale to rank the APP's knowledge of MA before & after the intervention
- Subjective surveys for current APP screening & documentation practices (pre-intervention) & completion of the intervention (post-intervention)
- Retrospective chart review for MA screening performed by APPs using keywords & DOSE-Nonadherence

## Results

Demographic Characteristics

Demographic Characteristic, n (%)	(N = 33)
<b>Age group</b>	
25-30	7 (21.2)
31-35	12 (36.4)
36-40	5 (15.2)
41-45	1 (3.0)
46-50	4 (12.1)
51-55	1 (3.0)
56-60	3 (9.1)
<b>Gender</b>	
Male	3 (9.1)
Female	30 (90.9)
<b>Ethnicity</b>	
White	29 (87.9)
Hispanic/Latino	0 (0)
Black/African American	1 (3.0)
Native American/American Indian	0 (0)
Asian/Pacific Islander	3 (9.1)
Mixed race	0 (0)
<b>Education level</b>	
Masters	29 (87.9)
Doctoral	4 (12.1)
<b>Professional role</b>	
Nurse Practitioner	24 (72.7)
Physician Assistant	9 (27.3)
<b>Years Practicing as APP</b>	
<1 year	3 (9.1)
1-5 years	15 (45.5)
6-10 years	5 (15.2)
11-15 years	7 (21.2)
15-20 years	0 (0)
>20 years	3 (9.1)

### Aim 1

- APP knowledge of MA increased by 37.3%.
- The mean score significantly increased from pre-intervention ( $M = 28.7$ ,  $SD = 4.8\%$ ) to post-intervention ( $M = 39.4$ ,  $SD = 3.3\%$ ).
- The mean difference between the pre- & post- intervention ( $M = 10.7$ ,  $SD = 5.9\%$ ) was found to be statistically significant ( $t(15) = 7.279$ ,  $p < .001$ ).

### Aim 2

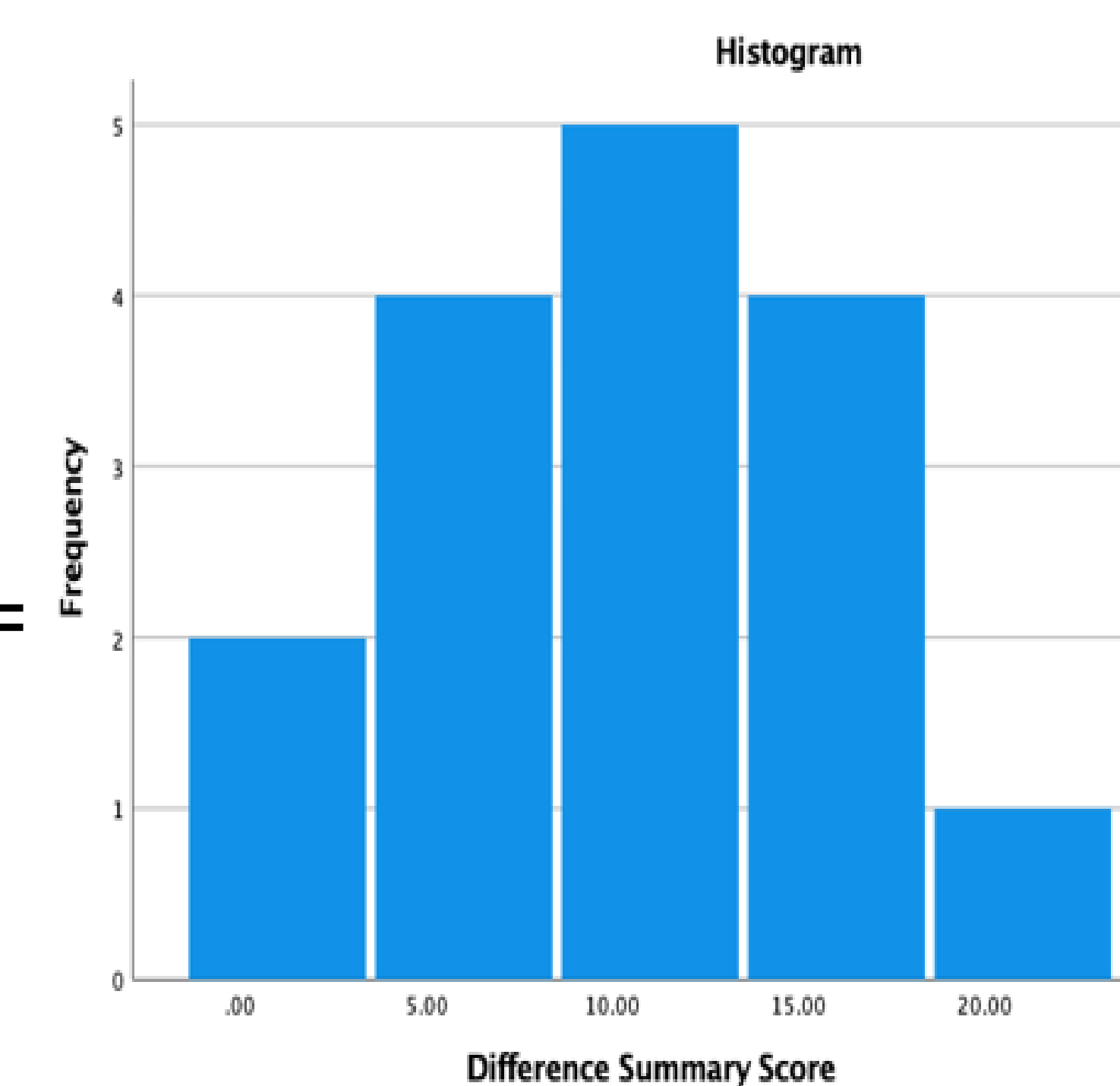
- APP screening for MA increased by 69.6%. The relationship between these variables was statistically significant,  $\chi^2(1, N = 16)$ ,  $114.49$ ,  $p < .001$ .

APP Subjective Reporting of Screening and Documenting

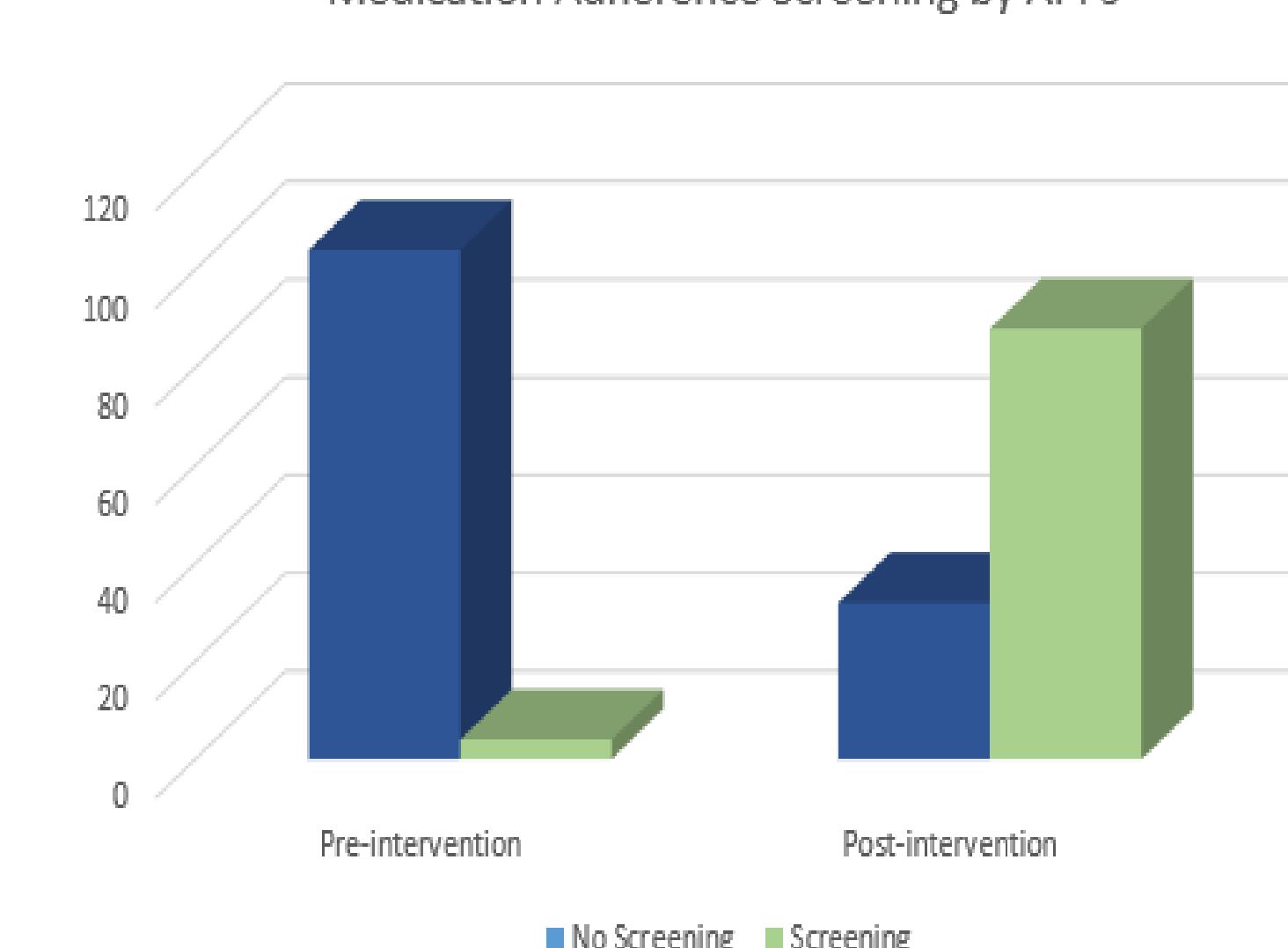
Subjective Variable, n (%)	(N = 29)
<b>Screening</b>	
None of the time	0(0)
Rarely	2(6.9)
Some of the time	8(27.6)
Most of the time	11(37.9)
All the time	8(27.6)
<b>Documentation</b>	
None of the time	2(6.9)
Rarely	6(20.7)
Some of the time	12(41.4)
Most of the time	5(17.2)
All the time	4(13.8)
<b>Place of Documentation</b>	
History of present illness	25(86.2)
Assessment & Plan	2(6.9)
Problem list	2(6.9)
Other	

APP Subjective Reporting of Intervention Completion

Subjective Variable, n (%)	(N = 20)
<b>Viewed education module</b>	
Yes	17(85)
no	3(9.1)
<b>Performed dose-nonadherence</b>	
yes	20(100)
no	0(0)



Medication Adherence Screening by APPs



## Discussion

- Studies are limited specifically evaluating the impact of clinician knowledge on screening rates for MA.
- Screening for MA on admission has the ability to identify at-risk patients, allowing for earlier intervention & elimination of barriers to MA during the hospitalization.<sup>11</sup>
- An education module on MA increased knowledge among cardiology APPs & documentation of MA screening by cardiology APPs improved by providing a place in the EMR for documentation.
- Findings suggest there is a need for increased knowledge for MA in cardiovascular patients among cardiology APPs & a demand to integrate a standardized screening tool in the EMR.

## Limitations

- May not be representative of the population due to convenience sample.
- Limit generalizability & confounders may be present due to lack of randomization.
- Lacked a validated tool for surveys & was not piloted before use to assess for validity & reliability.
- Viewing of the education module did not have objective means of assessment.
- Attrition: 51.5% of the data is missing, which was likely due to survey fatigue & competing professional priorities.

## Conclusions

- Educating APPs on MA & providing a valid & reliable MA screening tool in the EMR can improve APP knowledge & screening in cardiovascular patients upon admission to the acute care setting.
- Translation to practice:**
  - Dissemination of finding at different levels within the organization
  - Organization taking steps to integrate MA screening into the permanent EMR
- Future projects/research:**
  - Specific populations including patients undergoing evaluation for advanced heart failure therapies
  - Identification of reasons for nonadherence & interventions for medication nonadherence

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