

# Evaluation of Medication Adherence in Student-Run Community Clinic

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## Introduction

Non-adherence to medications has been associated with an increased risk of poor clinical outcomes, inevitably leading to increased morbidity, mortality, and greater consumption of healthcare resources (and subsequently higher costs).<sup>1</sup> The cost of poor medication adherence is tremendous—nearly \$177 billion each year in direct and indirect healthcare costs.<sup>1</sup> Certain patient populations that tend to have greater risks for non-adherence include individuals with the following characteristics: younger age, female sex, health literacy limitations, racial/ethnic minorities, lower levels of education, and lower income.<sup>2</sup>

The COVID-19 pandemic has had a negative impact on medication adherence. Review of US prescription drug claims during the pandemic has shown a significant decline in new patients starting drug therapy, along with a greater number of patients were likely to discontinue use of many drug classes.<sup>3</sup> The situation has particularly worsened for patients with low socioeconomic status due to several difficulties, including having less or no income, confinement to their homes, and increased personal stress.<sup>4</sup>

In New Brunswick, NJ, a significant portion of the population is at greater risk of non-adherence, as 36.2% of the population are racial/ethnic minorities, 34.4% of the population are below poverty level and 35.8% of the population age 25 years and older have less than a high school diploma.<sup>5</sup> As a resource to this population, the HIPHOP Promise Clinic, a student-run clinic, provides free healthcare to uninsured patrons of Elijah's Promise Soup Kitchen in New Brunswick, NJ. Promise Clinic has worked to attenuate the impact of the challenges this population faces by partnering with a local New Brunswick pharmacy to provide free medications to patients. Although patients pay no out-of-pockets costs for their medications, noncompliance in this population persists and needs to be addressed. The purpose of this study is to determine the rate of medication adherence/non-adherence among Promise Clinic patients from March 2020 to March 2021.



## Methods

The purpose of this study is to determine the rate of medication adherence among Promise Clinic patients from March 2020 to March 2021. Medication adherence was calculated using the medication possession ratio (MPR) through the information gathered through the Promise Clinic electronic medical/pharmacy records.

A retrospective chart review was conducted and included patients who met the following inclusion criteria:

- Patients receiving care from Promise Clinic and have had at least one visit during the study period of March 2020 to March 2021
- Patients who have received at least one prescription or over-the-counter medication through the Promise Clinic during the study period of March 2020 to March 2021
- Patients 18 years or older

Review of internal pharmacy data was conducted to calculate medication adherence, which was measured using the medication possession ratio (MPR) during the study period. MPR is defined as the proportion of days' supply obtained over a specific time period. Adequate medication adherence was defined as an MPR  $\geq$ 80%. The electronic health record was further reviewed to establish an association between the patient's MPR and the following factors:

- Average LDL
- Average BP
- Average A1C
- Number of comorbidities
- Number of total medications
- Number of medications for primary diagnosis
- Total number of clinic visits during study period
- Total medication cost for primary diagnosis
- Total medication cost for all diagnoses
- Use of prescription assistance program medications

## Results

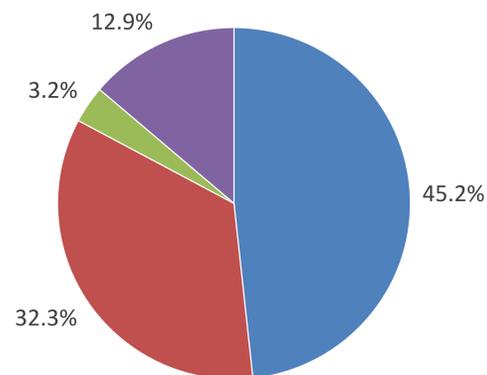
Table 1. Baseline Characteristics

Total # patients	31
Average age	55
Race/Ethnicity	
Hispanic/Latino	24 (77%)
Not Hispanic/Latino	7 (23%)
Female Gender	10 (32%)
Average # comorbidities	3
Average total meds	5
Average meds for primary dx	2
Average # clinic visits/encounters	7
Average med cost for primary dx per patient	\$58.84
Average med cost per patient	\$131.55
# of patients on Prescription Assistance Program	8 (25.8%)

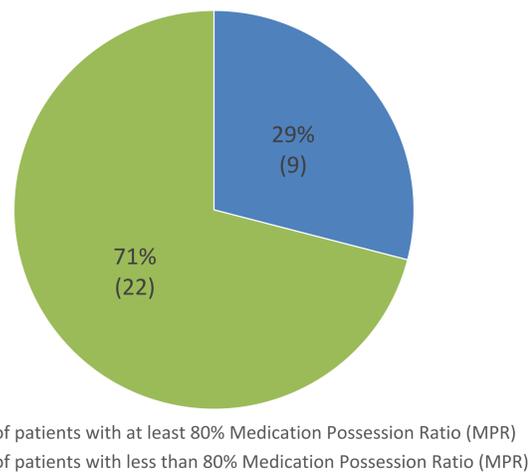
Table 2. Primary Diagnosis and Average Associated Outcomes

	Patients with at least 80% MPR	Patients with less than 80% MPR
Patients with dyslipidemia as primary diagnosis	0	2
Average LDL (mg/dL)	-	243
Patients with hypertension as primary diagnosis	3	8
Average BP (mmHg)	138/84	147/97
Patients with diabetes as primary diagnosis	6	8
Average A1C	10.3%	9.6%

Percentage of Promise Clinic Patients with Primary Dx of Diabetes, Hypertension, Dyslipidemia, or Other



Number and Percentage of Patients with at least 80% or less than 80% MPR



## Results (continued)

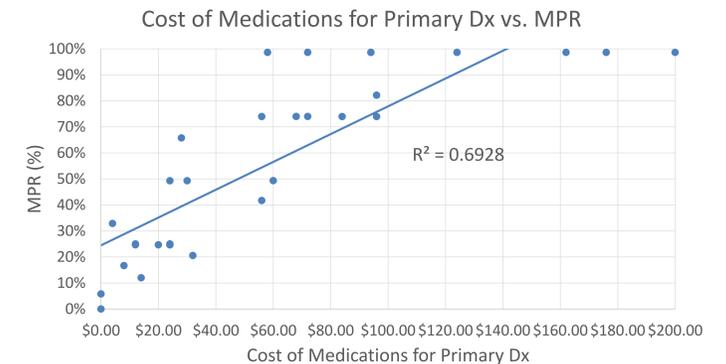


Table 3. T-Test Values (Non-Adherent vs. Adherent)

Parameter	T-Test Value
Average LDL	0.61
Average DBP	0.55
Average SBP	0.96
Average A1c	0.32

## Discussion

### Limitations:

- Retrospective chart review with a limited sample size
- Patients may not have been adherent during the one-year observation period due to pandemic barriers
- Majority of our patient populations have significant socioeconomic barriers to receiving medical care at baseline (i.e. low income, language barriers, low health literacy)

### Conclusion:

- While no statistically significant difference was seen in clinical outcomes (LDL, DBP, SBP, A1c) in adherent and non-adherent patients, there was a positive correlation between cost of medications for primary diagnosis and MPR ratios.
- A prospective study with a powered sample size is required to determine the statistical and clinical significance to ensure validity and generalizability of our conclusions.

## References

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