

Project Title

Impact of Patient–Reported Outcome Measures on Medication Adherence and Drug-Related Problems

Project Lead and Members

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Organisation(s) Involved

Tan Tock Seng Hospital

Healthcare Family Group(s) Involved in this Project

Allied Health, Pharmacy

Project Period

Start date: December 2020

Completed date: December 2022

Aims

1. To describe the domains of DOSE and BMQ before and after pharmacist interventions.
2. To describe medication adherence DRPs (MA-DRPs) between patients with good adherence and poor adherence.
3. To describe MA-DRPs between patients with minimal concerns on medications and more concerns on medications.

Background

See poster attached/below

Methods

See poster attached/below

Results

See poster attached/below

Lessons Learnt

See poster attached/below

Conclusion

See poster attached/below

Additional Information

Accorded the Singapore Health & Biomedical Congress 2023 (Singapore Young Investigator Award (Health Services Research) Merit Award

Project Category

Applied/ Translational Research

Qualitative Research

Keywords

Medication Management, Screening Tool, Patient-Centered Care

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Background

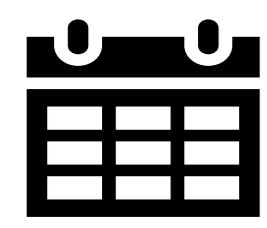
Medication adherence can affect the quality of life, health outcomes, and overall healthcare costs^[1]. Medication non-adherence is considered a type of drug-related problem (DRP).

A **Population**-based approach to **Medication Management (PopMed)** service for patients with multiple morbidities and polypharmacy was developed to provide person-centered care to address DRPs in a multi-disciplinary collaboration. Patient Reported Outcome Measure (PROM)^[2] was adopted to assess medication adherence (DOSE)^[3] and patients' concerns and beliefs on medications (BMQ)^[4], and to facilitate communication between pharmacists and patients.

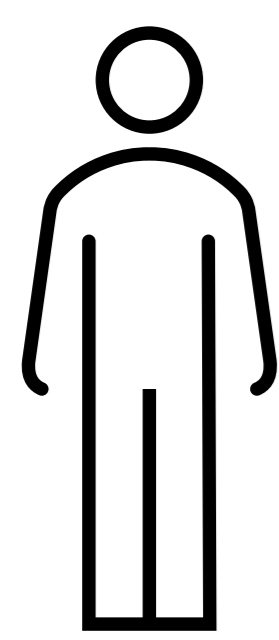
Objectives

- To describe the domains of DOSE and BMQ before and after pharmacist interventions.
- To describe medication adherence DRPs (MA-DRPs) between patients with good adherence and poor adherence.
- To describe MA-DRPs between patients with minimal concerns on medications and more concerns on medications.

Methodology



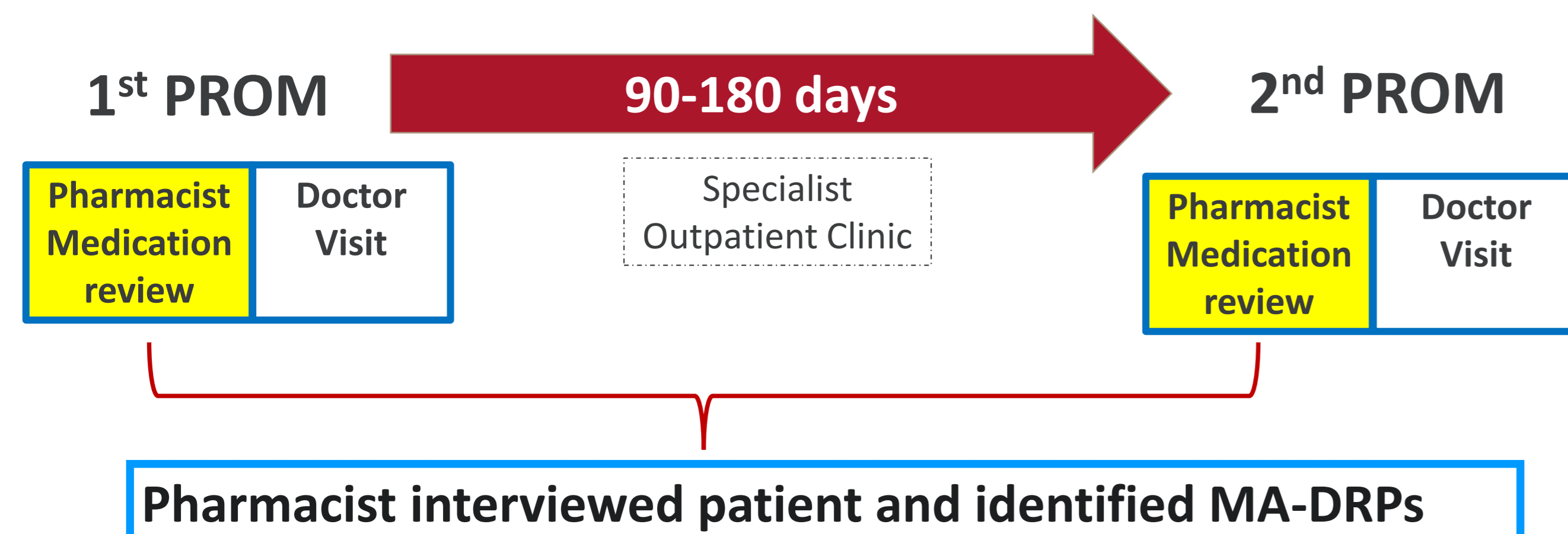
December 2020 to December 2022



Total of 77 patients

Self-administered PROM prior to each PopMed session

8 multiple-choice questions
Time required: 5-10 minutes
Platform: Form SG (Mobile, Tablet), Paper
Language: English, Chinese, Malay



PROM Questions and Scoring scale

1. DOSE: Measure of Medication Adherence		
Questions	Options	Numerical Score
Qn 1. I missed my medicine by accident	None of the time	1
	A little of the time	2
Qn 2. I skipped a dose of my medicine on purpose	Some of the time	3
	Most of the time	4
Qn 3. I did not take a dose of my medicine	Every time	5

Liau YW, et al. Patient Prefer Adherence. 2019 Jul 29;13:1241-1252.

2. BMQ Subscale of DART: Measure of beliefs and concerns with medicine use		
Questions	Options	Numerical Score
Qn 4. I'm worried about taking my medicine	Yes	1
Qn 5. Sometimes I worry about the long term effects of my medicine	Partial	3
	No	5
Qn 6. I do not understand what my medicine is for		
Qn 7. My medicine interferes with my life		
Qn 8. Sometimes I worry about becoming dependent on my medicine		

Kaufmann CP, et al. BMJ Open 2018;8:e016610.

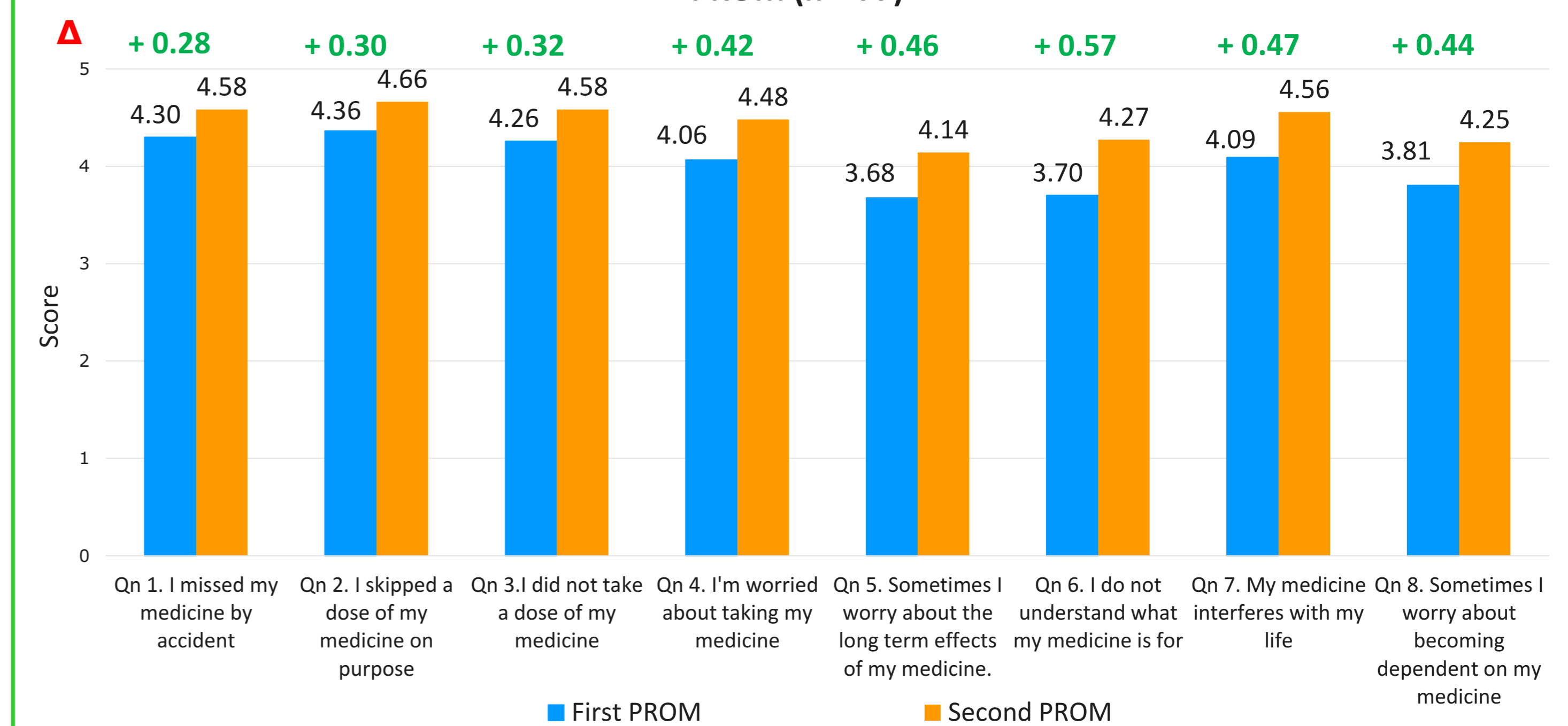
Patient with score above 4.0 arbitrarily defined as:

- Good adherence for DOSE
- Minimal concerns on medications for BMQ

Results

- Seventy-seven enrolled patients completed at least 2 PROMs over an average of 90 ± 38 days.
- DOSE scores improved between the first and second PROM, median (range), 5.0 (1.0-5.0) vs. 5.0 (3.0-5.0), P<0.05.
- BMQ scores improved between the first and second PROM, median (range), 4.2 (1.4-5.0) vs. 4.6 (2.2-5.0), P<0.05.
- About 33% of patients had at least a 1-point improvement in at least 1 of the 3 questions in DOSE.
- About 58% of patients had at least 1-point improvement in at least 1 of the 5 questions in BMQ.

Table 1. The Mean Scores of Individual Questions for DOSE and BMQ at the First and Second PROM (n = 77)



Adherence and MA-DRPs For First PROM

70% (54/77 patients) of patients had good adherence and an average of 0.75 MA-DRPs per patient.

30% (23/77 patients) of patients had poor adherence and an average of 2 MA-DRPs per patient.

Box 1. Patients with good adherence had lower MA-DRPs per patient compared to those with poor adherence. Median (range), 1 (0-2) vs. 2 (0-5), P < 0.05.

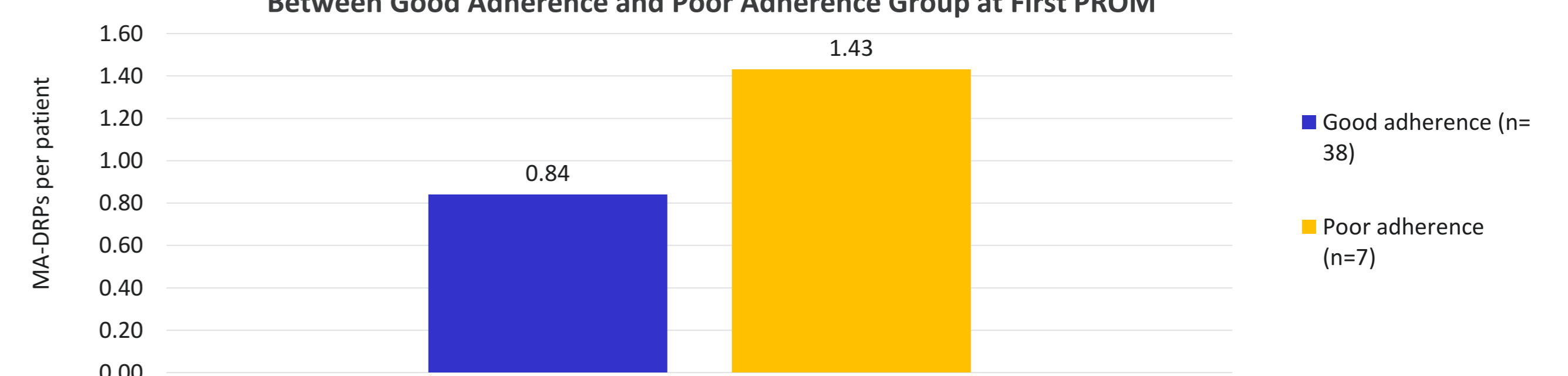
Concerns on Medications and MA-DRPs For First PROM

58% (45/77 patients) of patients had minimal concerns on medications and an average of 0.93 MA-DRPs per patient.

42% (32/77 patients) of patients had more concerns on medications and an average of 1.38 MA-DRPs per patient.

Box 2. Patients with minimal concerns on medications did not significantly have lower MA-DRPs per patient compared to those with more concerns. Median (range), 1 (0-2) vs. 1 (0-5), P = 0.35.

Table 2. MA-DRPs for Patients with Minimal Concerns on Medications Between Good Adherence and Poor Adherence Group at First PROM



In patients with minimal concerns on medications, those with good adherence did not significantly have lower MA-DRPs compared to patients with poor adherence. Median (range), 1 (0-2) vs. 1 (0-3), P = 0.12.

Discussion

- Median DOSE and BMQ scores improved at the second visit after the pharmacist's coaching and addressing of patients' concerns.
- All the questions of PROM improved at the second visit.
 - The question with the greatest improvement was "I do not understand what my medicine is for", which showed that the pharmacist can improve patients' understanding of the indications of their medications.
- Patients with good adherence had significantly lower MA-DRPs compared to those with poor adherence. This demonstrated the potential of DOSE to detect patients with more MA-DRPs.
- In patients with minimal concerns on medications, those with good adherence did not necessarily have fewer MA-DRPs, when compared to those with poor adherence. Further studies can be performed to examine the association and its contributing factors.

Conclusion

DOSE and BMQ supported person-centered care models as demonstrated by the improvements in medication adherence and concerns about medications. The association between adherence and the number of MA-DRPs can be further explored for DOSE to be a screening tool to identify patients with multiple morbidities and polypharmacy who have more MA-DRPs.

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