

Improving Medication Adherence Among Diabetes Patients Utilizing Mobile App and Pamphlet

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Problem Statement

- The American Diabetes Association (2019) set the antidiabetic oral medication adherence rate to 80%.
- Existing literature reports that the majority of patients with type 2 diabetes mellitus (T2DM) do not achieve this benchmark.
- Medication nonadherence is strongly associated with poor glycemic control resulting in more healthcare services utilization.
- The family clinic administrator noted that the majority of patients with T2DM are nonadherent to their medication.
- The standard of practice in the clinic is verbal health education among patients with T2DM.

Short-term and Long-term Goals

Purpose: Improve medication adherence through the implementation of the mobile health app reminder (MHAR) and diabetes adherence education pamphlet (DAEP).

Short term goals:

- At the end of four weeks of usage of the MHAR, 60% of the participants will achieve a low to medium likelihood of nonadherence (LON) post score.
- In the last week of implementation, 80% of patients seen will receive DAEP.
- At least 80% of participants will have a medication adherence rate at or above 80% after four weeks of using the MHAR.

Long term goal: At least 80% of patients with T2DM will achieve random blood sugar <180 mg/dL and HgA1c <7%.

Methods

Setting: Suburban Family Practice Clinic

Population: Adult patients (>18 years old) with T2DM who have at least one oral diabetic medication.

Implementation (13 weeks):

- Patients completed the likelihood of nonadherence online pre-survey
- The percentage of patients who received DAEP was recorded weekly.
- Patients who provided consent to call:
 - reported adherence rate after four weeks of MHAR usage and completed the LON post-survey.

Results

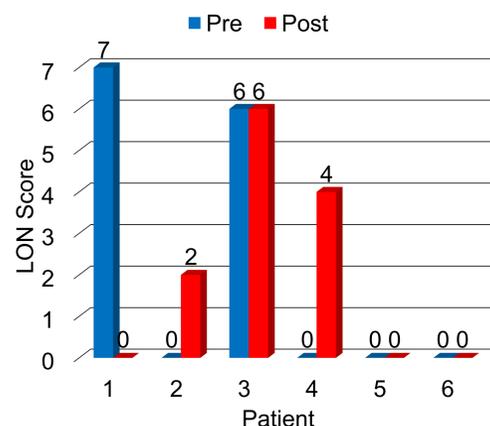


Figure 1. LON = likelihood of nonadherence (0-1 low, 2-7 medium, 8-36 high) pre-and post-score (N=6)

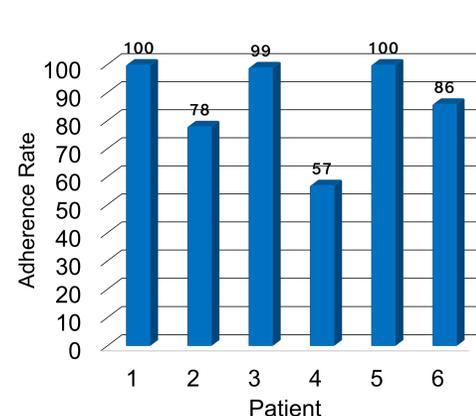


Figure 2. Adherence rate reported after MHAR usage (N=6)

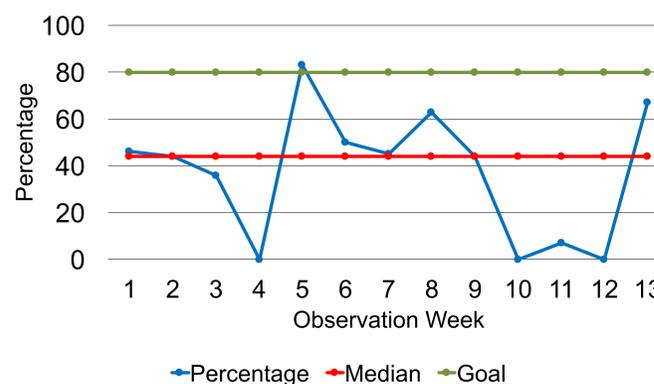


Figure 3. Percentage of patients who received diabetes adherence education pamphlet

Discussion

- 100% of participants (N=6) achieved low to medium LON post scores. This result means that the patients had a >75% probability of adhering to the medication.
- The average adherence rate reported by participants was 86.67%.
- 67% (n=4) of participants reported an 80% or higher adherence rate, and 33% (n=2) were nonadherent.
- This result supports existing literature that 67.9% of patients with T2DM are nonadherent to their medication.
- There is a weak negative correlation ($r=-0.31$) between adherence rate and LON post-score.
- In the last week of implementation, only 67% of patients seen received the DAEP.
- This project supports previous studies that utilizing MHAR and DAEP has the potential to improve medication adherence among patients with chronic diseases.

Conclusions

- A high rate of medication adherence continues to be a challenge among patients with T2DM.
- Higher LON scores may be indicative of lower actual compliance.
- The distribution of the pamphlet is more successful where there is monitoring, data reporting, re-education of staff, posting of reminders, and reinforcement from the administration.
- A baseline score on the LON will help the provider address patients' perceived barriers for compliance.
- Future QI projects may leverage the efficacy of these interventions to improve adherence among patients with other chronic diseases.
- Limitations:
 - Small sample
 - The sustained outcome is limited due to the length of MHAR usage (4 weeks).

References

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