PMU106

Evaluating the Ability of a Mobile Medication App to Improve Adherence in a Chronically Non-adherent Population in Hypertension, Diabetes and Depression

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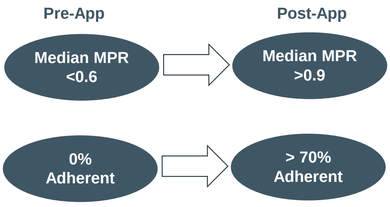
RESULTS AND CONCLUSIONS

- **Non-adherent (MPR<0.8) patients using the Medisafe app demonstrated significant improvements in adherence in all 3 therapeutic areas (TAs).**
  - **Pre to post index median MPR improved from <.6 to >.9. (Figure 1)**
  - **~70% of app users became adherent post-index. (Figure 1)**

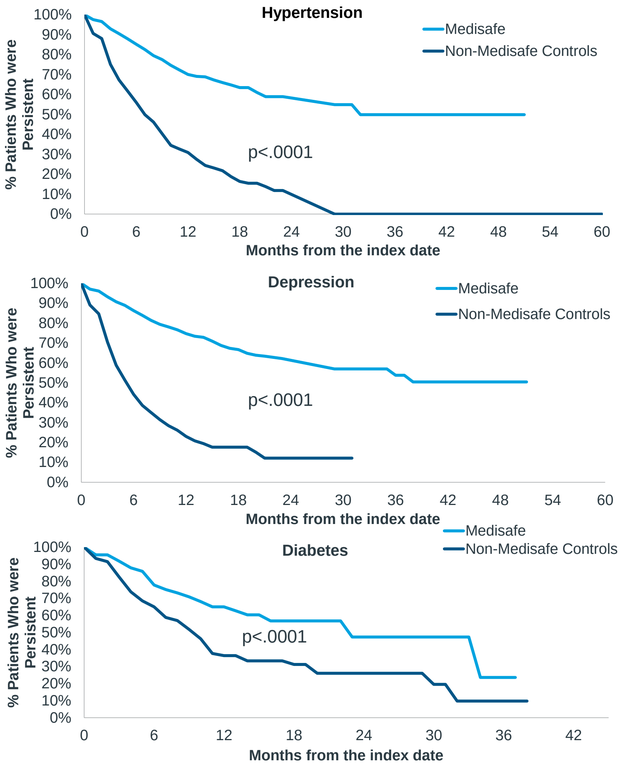
Figure 1. Median MPR and proportion adherent among app users (pre vs. post)



- **Time to non-persistence during the (pseudo) on-app period was significantly longer in Medisafe app-users compared to controls. (Figure 2)**

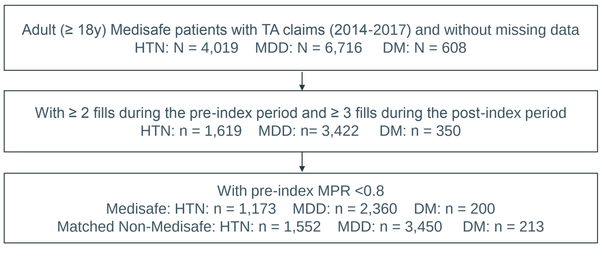
Persistence was significantly longer for app users vs. controls in all 3 TAs

Figure 2. Time to non-persistence during the (pseudo) on-app period



- **A cohort of 1,173 HTN, 200 DM, and 2,360 MDD users were matched to controls. (Figure 3)**

Figure 3. Patient attrition



- **Patient characteristics were similar between groups. (Table 1)**

Table 1. Patient characteristics at baseline

Characteristic	Hypertension^ Medisafe (N = 1,173)	Hypertension^ Non-Medisafe (N = 1,552)	Depression‡ Medisafe (N = 2,360)	Depression‡ Non-Medisafe (N = 3,450)	Diabetes³ Medisafe (N = 200)	Diabetes³ Non-Medisafe (N = 213)
Age, mean years (SD)	52.0 (11.6)	50.8 (11.4)	42.9 (13.6)	42.2 (13.9)	51.2 (10.9)	52.0 (10.6)*
Sex, n (%) male	612 (52.2)	810 (52.2)	608 (25.8)	860 (24.9)	102 (51.0)	94 (44.1)
Pre-index time, mean months (SD)	28.3 (14.1)	30.2 (14.7)	31.3 (13.9)	31.5 (13.8)	20.8 (13.5)	22.5 (14.2)
Post-index/on-app time, mean months (SD)	13.6 (8.5)	13.7 (8.2)	11.4 (8.3)	11.4 (7.9)	12.9 (9.3)	14.2 (9.5)

^ Patients using ACEi or ARBs; ‡ Patients using SSRIs or SNRIs; ³ Patients using DPP-4 inhibitors, SGLT2 inhibitors or GLP-1 agonists
*p<0.05

- **Compared to controls, the probability of persistence at month 12 was higher in app-users (Table 2)**

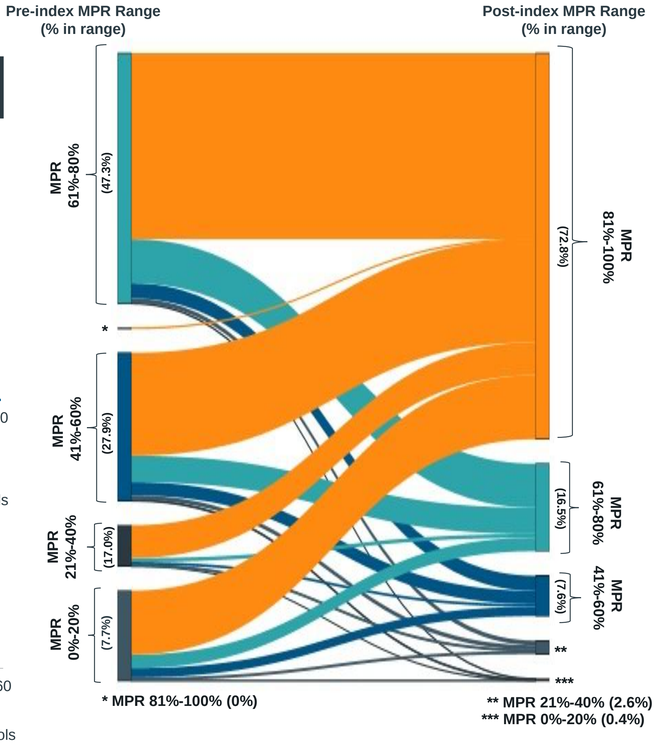
Table 2. Persistency at month 12 irrespective of on-app status (yes/no)

	Hypertension		Depression		Diabetes	
	Medisafe	Non-Medisafe	Medisafe	Non-Medisafe	Medisafe	Non-Medisafe
N at risk at month 12	307	163	517	157	36	46
K-M probability of persistence at month 12	42.3%	20.6%	35.9%	11.7%	33.5%	31.7%

- **MPR increased dramatically among many users. (Figure 4)**
- **The use of mobile app technology may benefit patients with a history of poor adherence.**

Many app users improved their adherence dramatically

Figure 4. Pre-post changes in MPR among app users (combined TAs)



BACKGROUND

- The high costs and negative outcomes associated with poor medication adherence are well established.[1,2]
- This study evaluated the impact of the Medisafe personalized medication app on adherence and persistence in three chronic therapeutic areas (TAs) among non-adherent patients.

METHODS

- This retrospective cohort study of patients using the Medisafe medication management mobile application examined data anonymously linked to IQVIA's longitudinal prescription claims (LRx).
- Patients with a pre-index medication possession ratio (MPR) <0.8 activating app alerts (users) for hypertension (HTN), depression (MDD) or Type 2 diabetes (DM) medications between 1/1/2014-12/31/2017 (index date) were matched (1:3, where possible) to non-app users (controls) with pre-index MPR <0.8 in the same TA and claims in the same month (assigned index date) as the app user. Additional matching variables included age (+/- 3 years), gender, geographic region, and categorical number of pre-index TA claims (0-5, 6-11, ≥ 12).
- All patients had ≥ 2 prescription claims pre-index and ≥ 3 claims post-index to allow for pre-post MPR calculations, while pre- and post-index periods were equalized for app users and controls.
- Pre- to post-index MPR change was assessed among app users using paired t-tests. Non-persistence was defined as > 60 day refill gap, evaluated using Kaplan-Meyer analysis/log-rank tests during the on-app period as well as throughout the entire post-index follow-up (irrespective of whether or not the patient was on-app).

LIMITATIONS

- The pre-post study design does not account for incident users.
- A selection bias may exist in the users as patients with increased motivation for change may be more likely to install the app.

ACKNOWLEDGEMENTS

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