



The Relationship between Online Activity and Biometric Tracking and Medication Adherence among Members with Diabetes

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This study demonstrated a significant relationship between member engagement in healthy activities and biometric tracking through Balance Rewards for healthy choices[®] and greater adherence to prescribed diabetes medications.

BACKGROUND

- In 2013, Walgreen Co., a national community pharmacy and retailer launched an online rewards program - Balance Rewards for healthy choices[®] (BRhc) - to help motivate program members to live healthier lives by tracking physical activity and biometrics such as walking, running, cycling, and body weight. In April 2014, the program expanded to offer incentives for connecting biometric devices and tracking blood glucose and blood pressure.

OBJECTIVE

- To determine the relationship between member engagement in BRhc and adherence to anti-diabetic medications, with focus on tracking physical activity and blood glucose.

METHODS

- Study design: Retrospective cohort study.
- Study sample: Members newly enrolled in the BRhc program between May 1 - June 30, 2014 who tracked an activity or biometric within 6 months of enrollment and had at least one fill of a diabetes medication in 2014 (GPI2=27).
- Outcome variable: Adherence to anti-diabetic medications using proportion of days covered (PDC)¹ calculated from each members' index prescription fill date to December 31, 2014.
- Activity variables: Blood glucose tracking and physical activity steps converted into miles on a 2,000:1 basis. Members were also segmented by those logging < or ≥ 180 miles within 6 months.
- Statistical analysis: Descriptive analysis, Student's t-test, and chi-square test. A p -value of <0.05 was considered significant. All statistical analyses were conducted using SAS version 9.3 (SAS Institute Inc., Cary, NC).

RESULTS

- Overall, BRhc members who filled diabetes medications were older and had more comorbidities compared to the general BRhc member population with any prescription fill in 2014. (See Table 1).

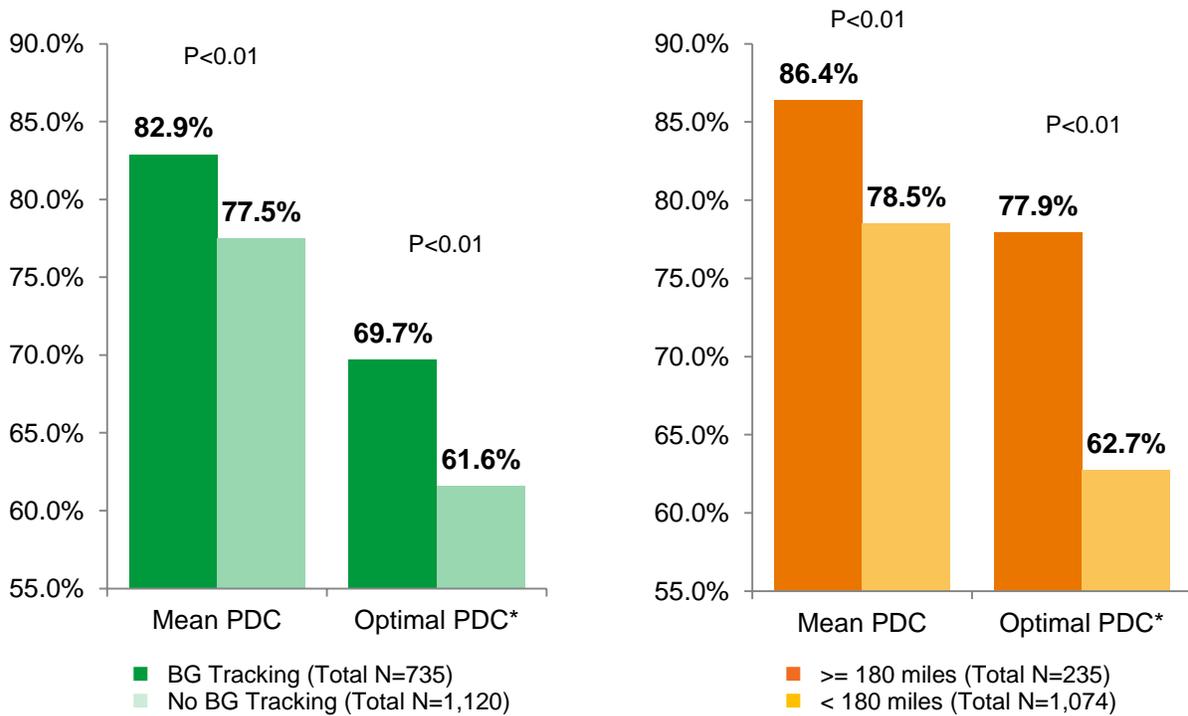
Table 1. BRhc members Demographics and Maintenance Medication Utilization

Characteristic	BRhc members (N=16,410)	BRhc members with Diabetes (N=1,855)
Median Age	40.0	45.3
Female %	81.7%	73.5%
Mean Maintenance GPI2	2.7	4.6
Median Maintenance GPI2	2.0	4.0

Among BRhc members with diabetes:

- 735 (39.6%) tracked their blood glucose and 1,309 (70.6%) tracked steps.
- Blood glucose tracking and higher levels of physical activity were associated with significantly greater levels of medication adherence (See Figure 1).

Figure 1. Mean and Optimal PDC by Blood Glucose Tracking Status and Total Miles Logged



CONCLUSIONS

- This study demonstrated a significant relationship between higher levels of member engagement in healthy activities and biometric tracking through Balance Rewards for healthy choices[®] and greater adherence to prescribed diabetes medications.

References:

1. Hess LM, Raebel MA, Conner DA, Malone DC. Measurement of adherence in pharmacy administrative databases: a proposal for standard definitions and preferred measures. *The Annals of pharmacotherapy*. Jul-Aug 2006; 40(7-8):1280-1288.

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