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HEALTH ACTIVITY TRACKING IS ASSOCIATED WITH HIGHER MEDICATION ADHERENCE

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Purpose: Adherence to medication is associated with better health outcomes and lower total healthcare costs for patients with certain chronic conditions, but the relationship between medication adherence and patient behavior has not been established. We leveraged data from patients who have adopted digital health and wellness tracking tools to examine this relationship.

Method: We conducted a retrospective analysis of deidentified medical and pharmacy claims from a large national insurer for patients with hypertension, diabetes, or dyslipidemia. Adherence was measured in terms of medication possession ratio (MPR), calculated from pharmacy claims using both a fixed and a variable MPR methodology. We used our unified data aggregation platform to collect and sanitize step counts, sleep, weight, and food log data for patients who have adopted relevant activity trackers. We computed perpatient metrics on the frequency of tracking and the extent to which patients engaged in each activity. Finally, we used ordinary least square regression with fixed effects to model the relationship between MPR and the activity tracking metrics, including age and gender as fixed effects.

Result: Medication adherence increases with age and exhibits a small but significant correlation with gender, with males with diabetes or dyslipidemia having slightly higher adherence than females with those conditions. Including age and gender as fixed effects, patients who tracked steps, sleep, weight, or diet were significantly more adherent to medication than patients who did not track any activities. Furthermore, patients who tracked activities more frequently were more adherent when including age and gender as fixed effects. We found no significant correlation between the extent of activity tracked (e.g., number of steps, hours of sleep, etc.) and medication adherence.

Conclusion: Adopters of digital health activity trackers tend to be more adherent to hypertension, diabetes, and dyslipidemia medications, and adherence increases with tracking frequency. As such, use of activity trackers can serve as an effective predictor of medication adherence in clinically relevant decisions such as targeting patients for clinical trial enrollment.