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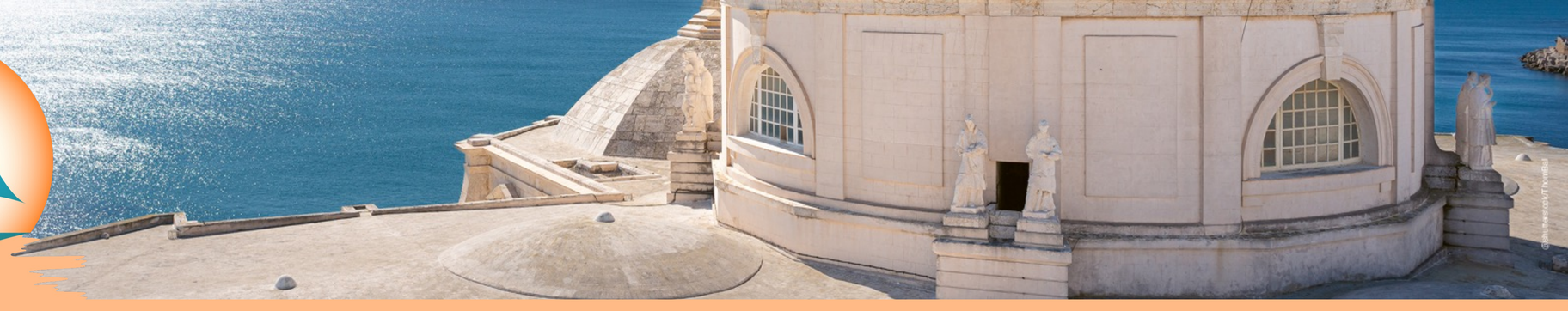

Goal-Setting and Walking in Older Persons with Multimorbidity: A Longitudinal Investigation

I-P-A.13

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INTRODUCTION

As the population ages, the number of older persons living with multimorbidity—two or more chronic health conditions—is increasing.

One way in which older persons with multimorbidity (PwMs) may manage their conditions is via physical activity (PA). Those who engage in PA achieve better physical and mental health outcomes[1]. However, older PwMs typically engage in less PA than recommended[2].

Research suggests that goal-setting can encourage greater PA in adults in the general population[3].

OBJECTIVE

Research had yet to explore the relationship between goal-setting and PA in older PwMs specifically.

Advances in digital health technology had also opened new avenues for the delivery of behaviour change solutions, including goal-setting.

The objective of this study was to explore the relationship between goal-setting and walking in older PwMs. Older PwMs could set goals via a multi-component digital health platform called ProACT, designed to support overall condition self-management, with support.

METHODS

Participants: 146 PwMs (n_{female}=67; n_{male}=79) aged 65 and older (M_{age}=73.51; SD_{age}= 6.25) in Ireland with at least two of: Diabetes, Heart Disease, Heart Failure, and Respiratory Disease.

Procedure: Participants received access to the ProACT platform for six months. The platform included health measuring devices (e.g., a blood pressure monitor, weight scale, and smartwatch), a tablet device, and the ProACT app. Of relevance to this study, participants could use the smartwatch and app to record and view their steps, set and revise step count goals, and view their goal progress (Figure 1). Each reading that participants took (i.e., each step) and each instance of use (i.e., whether they set a goal) were recorded.

Data Analysis: Multilevel Bayesian negative binomial regression analysis was used to explore how goal- and non-goal-setters' step counts per week evolved during their trial periods.

RESULTS

Table 1. Participants' median (and range of) step count per week

All Participants' Step Count	
17,285 (161 - 94,748)	
Goal-Setters' Step Count (n = 62)	Non-Goal-Setters' Step Count (n = 84)
20,801 (260 - 94,748)	13,387 (161 - 64,712)

Older PwMs who set a goal walked significantly more during their first week of trial participation than older PwMs who did not set a goal (β = 0.40 [95% CI: 0.03, 0.78]) (Table 2 and Figure 2).

The goal-setters retained their advantage throughout their trial periods, albeit their step count declined to an almost statistically significant greater extent (β = -0.04 [95% CI: -0.10, 0.01]) (Table 2 and Figure 2).

Table 2. Parameter estimates for step count by goal

	Estimate	Lower & Upper 95% CI
Non-Goal-Setters' Step Count Week 1 (Intercept)	9.35	9.10, 9.58
Goal-Setters' Step Count Week 1 (vs. Non-Goal-Setters' reference)	0.40	0.03, 0.78
Non-Goal-Setters' Step Count Change (Slope)	-0.02	-0.05, 0.02
Goal-Setters' Step Count Change (vs. Non-Goal-Setters' reference)	-0.04	-0.10, 0.01

Figure 1. The ProACT App's Step Count Features

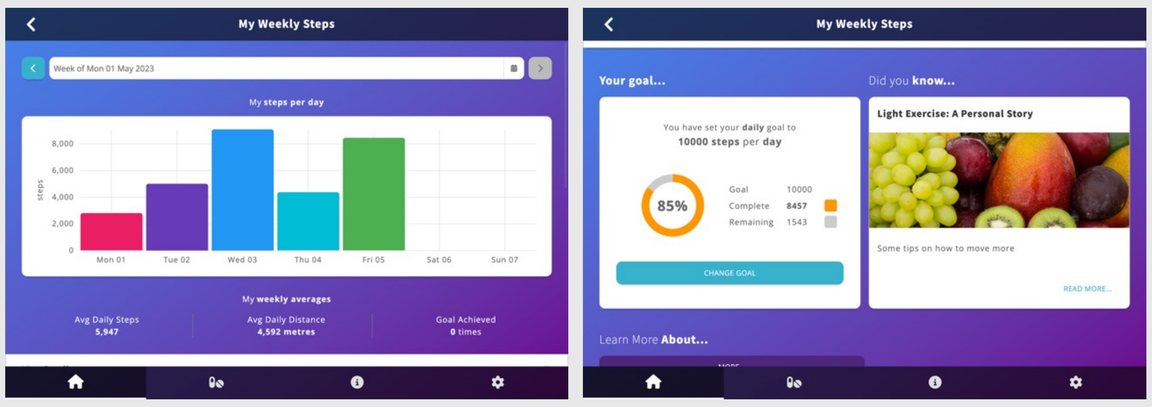
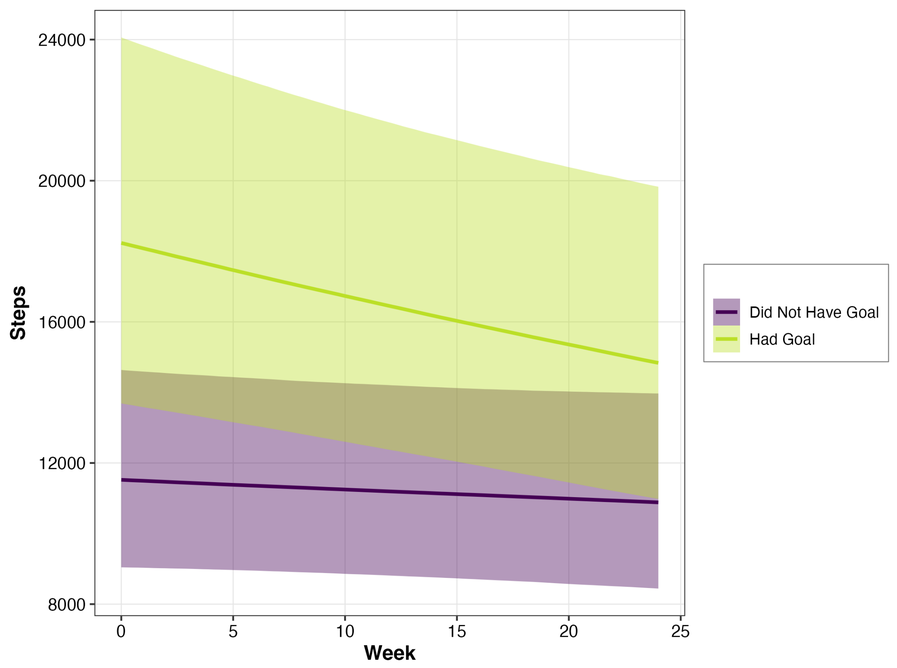


Figure 2. Goal-Setters' and Non-Goal-Setters' Predicted Median Step Count Change



CONCLUSIONS

The findings demonstrate that goal-setting via the ProACT digital health platform may help older PwMs to walk more and thus better manage their conditions.

Future research is needed to investigate how goal-setting can be implemented to facilitate sustained physical activity engagement over time.

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