

A just-in-time adaptive intervention to break physically inactive phases in the SMARTFAMILY2.0 trial.

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Introduction

Just-in-time adaptive interventions (JITAs) are promising technology-based interventions for behavior change (Wunsch et al., 2022). This study aimed to evaluate if a JITA can enhance physical activity in the subsequent hour depending on whether the JITA trigger has been answered ("engaged") compared to when it was not answered ("not engaged"). The JITA was delivered during waketime on provided smartphones if the accelerometer did record <100 steps and <2 metabolic equivalent (MET) counts in the previous hour.

Method

Data of the three-week intervention period of the SMARTFAMILY2.0 trial which aimed to promote physical activity in families (Wunsch et al., 2020) was used for analysis. Intervention content was stable throughout the three weeks. A total of 80 participants ($n = 47$ adults, 23 female, age: $M = 47$, $SD = 5.19$; $n = 33$ children, 15 female, age: $M = 11.5$, $SD = 3.40$) with 907 JITA triggers were included in this study. Two multilevel models were calculated (outcomes: MET and step count) using RStudio with measurements (level 1) nested in participants (level 2) including covariates (i.e. weekday/weekend, time of the day, adult/child).

Results

Results indicated significantly higher MET and step count in the engaged condition compared to the not engaged condition within-persons (level 1). Participants recorded 5.52 higher MET ($\beta = 0.08$, $p = .014$) and 113.16 more steps ($\beta = 0.08$, $p = .022$) in the following hour if they engaged with the JITA compared to if they did not engage with the JITA.

Discussion

Engaging with the inactivity JITA implemented in the SMARTFAMILY2.0 trial indicates promising results concerning physical activity enhancement in the subsequent hour. Here, the inclusion of further factors like the availability of the participant or the inclusion of affective variables into the design of the JITA might further enhance the effect in future studies.

References

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