

Evaluating the long-term effectiveness of three physical activity programs among older adults

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Research aim

To evaluate and compare the effectiveness of three physical activity programs varying in terms of counselling intensity, to assist older adults in pursuing and maintaining a physically active lifestyle.

Procedures

Participants

442 Flemish sedentary adults (mean age = 69.48 ± 6.71 years; 33.3% men) were randomized to one out of three physical activity interventions.

1. Physical activity promotion condition (PROM) (n = 146)

Single advice session in which the coach clarified existing local physical activity opportunities. The role of the coach was to provide practical information (e.g., hour and location of course), and thus similar to the role of a sport promoter in local communities (minimal intervention).

2. Walking condition (WALK) (n = 146)

Single advice session in which the coach additionally explained a prestructured individually-tailored walking program.

3. Individualized need-supportive condition (COACH) (n = 150)

Regular contacts in which an individualized physical activity plan was set up. The coach explicitly fostered the basic psychological needs outlined by the self-determination theory¹, i.e.

- Autonomy
- Competence
- Relatedness

Measurements

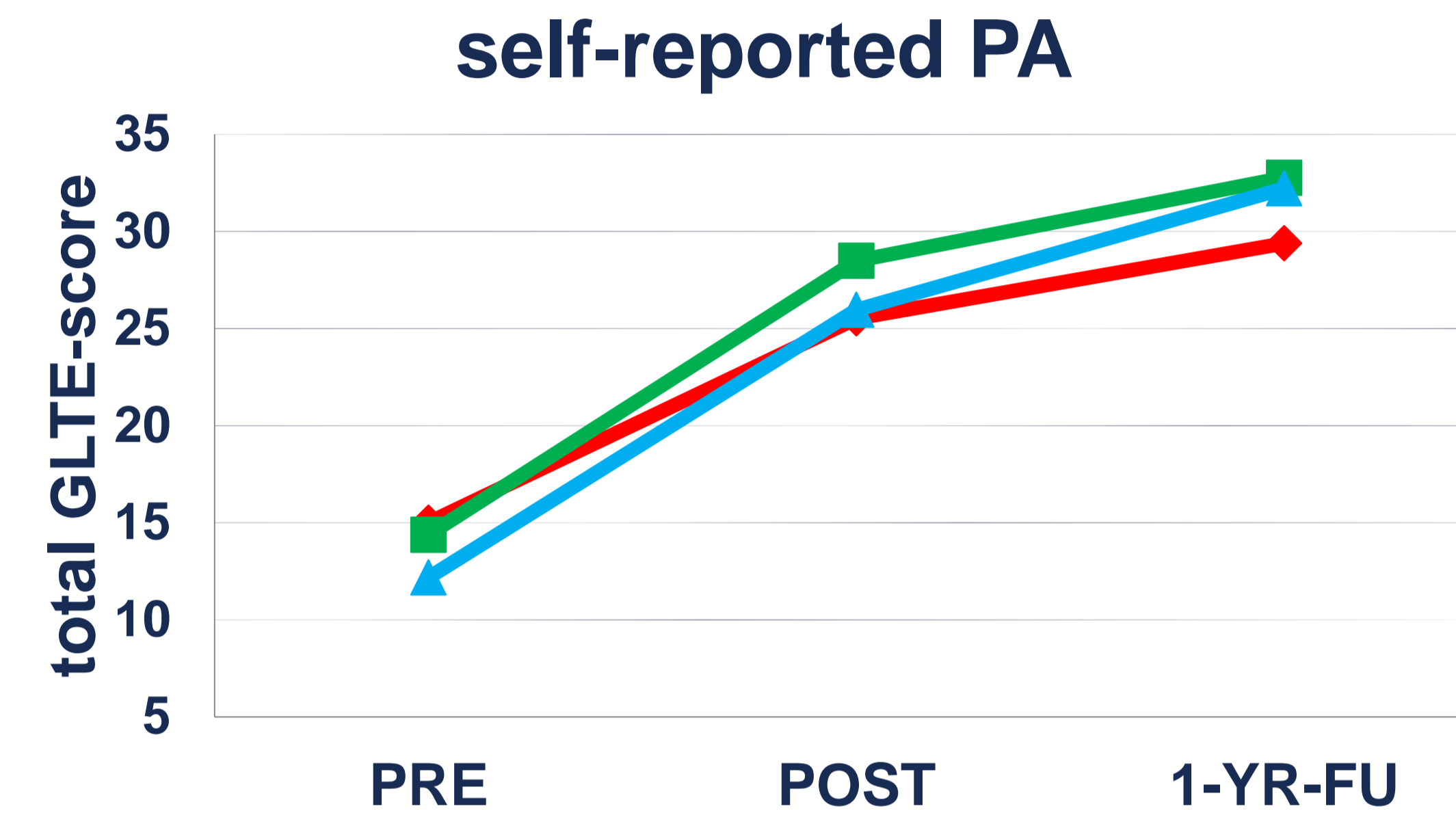
Before (pre), immediately after (post) and one year after the beginning of (follow-up; fu) the ten-week intervention.

- Self-reported physical activity (Godin Leisure-Time Exercise Questionnaire; GLTE)
- Objective physical activity - number of daily steps (pedometers, OMRON Walking Style One)
- Autonomous motivation (Behavioural Regulation in Exercise Questionnaire-2)
- Perceived need-support (only post) (Teacher As Context Questionnaire; TASCQ)

Results

Effects on physical activity (PA) (by Linear Mixed Model analyses)

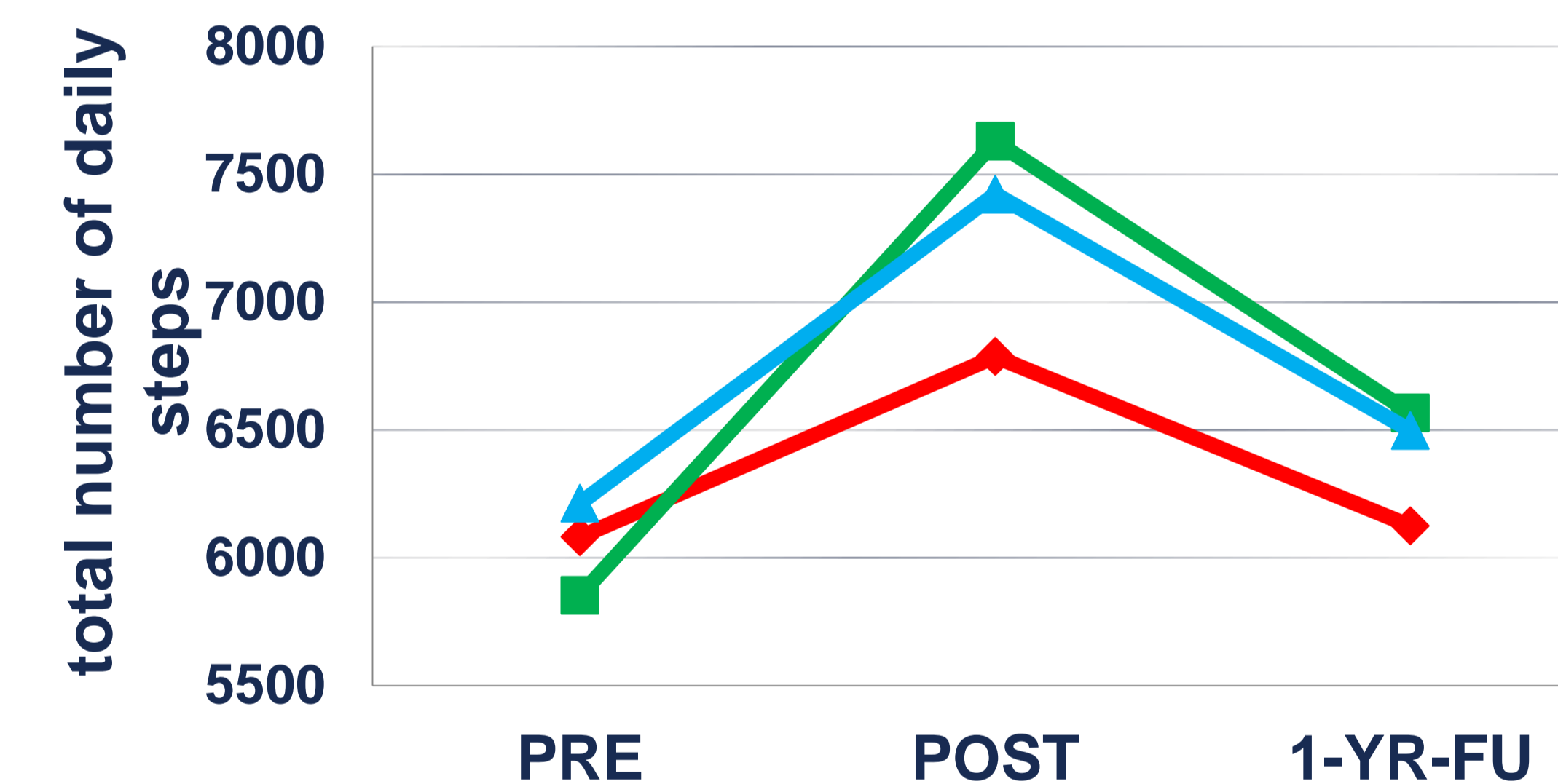
* $p < .05$; # $p < .01$; £ $p < .001$; & $p = .054$



pre to post
time effect in PROM[£], WALK[£], COACH[£]
time x condition: ↑WALK[#] & ↑COACH^{*} > ↑PROM

pre to fu
time effect in PROM[£], WALK[£], COACH[£]
time x condition: ↑WALK^{*} & ↑COACH[#] > ↑PROM

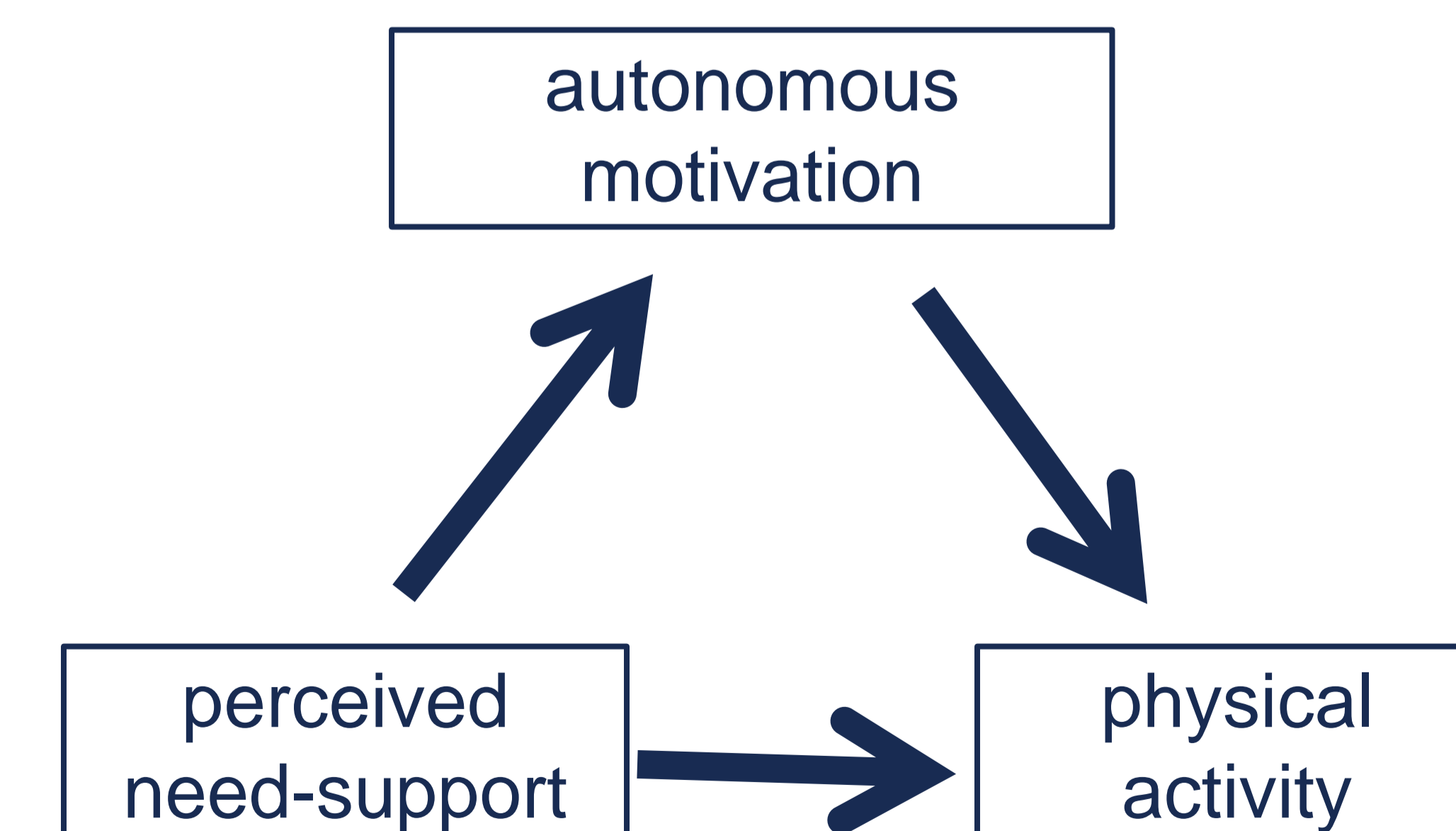
objective PA



pre to post
time effect in PROM[#], WALK[£], COACH[£]
time x condition: ↑WALK^{*} & ↑COACH[&] > ↑PROM

pre to fu
time effect in WALK^{*}, COACH^{*}

Mediations (by bootstrapping macro of Preacher & Hayes, 2008)



Note. Pre-test values of PA were included as covariate.

* $p < .05$; # $p < .01$; £ $p < .001$; & $p = .054$

Post-intervention

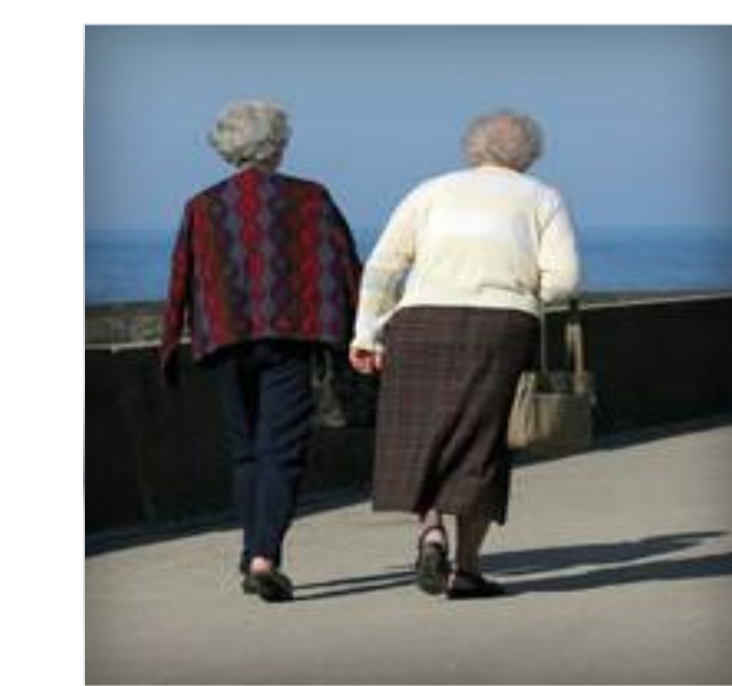
- Self-reported PA
 $R^2 = .0849$, $F = 11.8492$ £
- Objective PA
 $R^2 = .2958$, $F = 49.8415$ £

At 1-year-follow-up

- Self-reported PA
 $R^2 = .1135$, $F = 12.9802$ £
- Objective PA
 $R^2 = .3367$, $F = 48.3871$ £

Conclusions

- The **effectiveness** of physical activity programs varying in counselling intensity among sedentary older adults was demonstrated.
- Providing a **structured individually-tailored** walking program (implicit need-support) or setting up an **individualized** physical activity plan in combination with intensive need-supportive coaching (explicit need-support) seem to be more effective than simply referring older adults to widespread existing physical activity opportunities.
- Irrespective of intervention condition, more experienced need-support yield increased physical activity through higher levels of autonomous motivation. This implies the importance of **high quality (self-determined) motivation** to perform a behaviour in the short and the long term.
- The **discrepancy** between self-reported and objective physical activity after the intervention needs further consideration.



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¹ Deci, E. L., and R. M. Ryan. *Intrinsic motivation and self-determination in human behavior*. Plenum, New York, 1985.