Comparison of self-reported physical activity with objective accelerometry from the PACE-Lift trial in older adults in a primary care setting

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Background

Increasing physical activity (PA) in older adults has well-recognised health benefits and is an important public health focus. We compared objective accelerometry with self-report PA data in 60-75 year old PACE-Lift trial participants.

Methods

Objective accelerometry and self-report short International Physical Activity Questionnaire (IPAQ) trial data at baseline, 3 and 12 months were analysed (control n=148, intervention n=150). The main statistical analyses consisted of: i) Comparing change in PA based on IPAQ with accelerometry ; ii) Assessing construct validity of accelerometry and IPAQ against known PA predictors in older adults.

Results

3-month accelerometry showed a significant difference for increase in both daily steps (1041, 95% CI 519-1563, p<0.001) and weekly minutes of moderate to vigorous physical activity (MVPA) (63, 95% CI 40-86, p<0.001) between control and intervention groups. This treatment effect was still evident at 12-months. No treatment effects were seen for IPAQ data.

Factors associated with change in MVPA from IPAQ included only gender (male 169; 67 to 271), pain (moderate/extreme -192; -257 to -27) and depression score (high -233; -439 to -27). Change in accelerometry steps was associated with many variables: age (70-75y -1215; -2062 to -368), general health (fair -1528; -2632 to -423), chronic disease score (3+ diseases -1658; -2888 to -429), disability score (moderate to severe -2475; -4556 to -393), longstanding illness (limiting illness -896; -1656 to -137), pain (moderate/extreme -1322; -2352 to -292), depression score (high -2365; -3641 to -1089), self-efficacy (high 1060; 262 to 1858), brisk walking pace 2618;1341 to 3895) and BMI (obese -1556; -2398 to -714).

Discussion

The increase in PA outcome measures by accelerometry were not shown by the short IPAQ. Acclerometry showed much stronger construct validity than the short IPAQ. Objective accelerometry is a better measure of PA change for use in trials, compared to self-report short IPAQ.

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