https://doi.org/10.6063/motricidade.31700

Abstract

Could an intermittent programming unit based on the use of activity wristbands in Physical Education improve adolescents' objective habitual physical activity and sedentary behavior levels? A cluster-randomized controlled trial. Fit-Person study

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Conflict of interest: nothing to declare. **Funding:** This research is part of the I + D + i Fit-Person project (Reference: PID2019-110179GB-100), funded by the MCIN/AEI/10.13039/501100011033.

The benefits of regular PA practice have been clearly proved by research in previous literature (World Health Organization, 2020). Unfortunately, most children and adolescents do not accomplish the recommendations (60 minutes daily of moderate-to-vigorous PA) (Guthold et al., 2020). According to this situation, promoting adequate levels of PA in schoolchildren is a priority public health challenge. Consequently, this study aimed to analyse the effect of an intermittent teaching unit based on activity wristbands and behaviour modification strategies on habitual PA

and SB levels in high school students in the Physical Education (PE) context. Following a cluster-randomized controlled trial, 176 participants (45.5% females) aged between 11-17 years old were divided into a control group (CG, n = 76) and an experimental group (EG, n = 100). The EG performed an intermittent teaching unit (Viciana & Mayorga-Vega, 2016) during eight weeks (with two PE sessions a week). Using scientific evidence regarding the use of behaviour modification techniques towards more active behaviour (Casado-Robles et al., 2022), PA wristbands, educational counselling, progressive objectives toward 10000 steps/day, and alerts and messages to encourage active behaviour were applied during the last 15 minutes of the 16 PE sessions. Objective measurements of PA and SB were registered by GT3X+ accelerometers during eight days with a one-second epochs before and after the intervention. Results of the Multilevel Lineal Model did not show statistically significant differences in PA variables (i.e., light PA, moderate-to-vigorous PA, steps per day) or SB between participants in the CG and the EG (p > 0.05). In previous research, the results of comparable interventions have been similar. For instance, Corepal et al. (2019) did not find any positive results in their 22-week intervention using the Fitbit Zip monitor in adolescents. Evans et al. (2017) with an intervention of six weeks, Kerner et al. (2019) with a five-week intervention program, and Remmert et al. (2019) with a 12-week program did not find any positive results either. Although it has been shown that wearing a PA wristband is considered a highly recommended tool to increase motivation towards PA practice in schoolchildren (Casado-Robles et al., 2022), as they have a great affinity to new technologies, it seems that similar to previous cases, short programs have not had positive results in changing active behaviour in PE setting.

Acknowledgements

The authors thank Aliisa Hatten for the English revision of this abstract.

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