¿LAS PULSERAS DE FITNESS SON VÁLIDAS PARA ESTIMAR LA ACTIVIDAD FÍSICA TOTAL EN ADOLESCENTES?

ARE ACTIVITY WRISTBANDS VALID TO ESTIMATE TOTAL PHYSICAL ACTIVITY IN ADOLESCENTS?

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RESUMEN

El objetivo principal del estudio fue examinar la validez de cuatro modelos de pulseras de fitness para estimar los niveles diarios de actividad física total y distancia. Una muestra de 85 estudiantes de Educación Secundaria Obligatoria y Bachillerato participaron en el presente estudio. La actividad física total y distancia fueron medidas objetivamente mediante acelerómetros GT3X+ (ActiGraph, LLC, Pensacola, FL, EE. UU) colocados en la cadera derecha de los participantes y cuatro pulseras de fitness (Garmin Vivofit 4, Fitbit Alta HR, Polar A360 y Xiaomi Mi Band 2) colocadas en la muñeca de la mano no dominante durante un día completo. La Xiaomi Mi Band 2, Fitbit Alta HR y Garmin Vivofit 4 parecen ser buenos instrumentos para estimar la distancia. Sin embargo, para estimar la actividad física total, sólo la Xiaomi Mi Band 2 parece ser adecuada.

PALABRAS CLAVE: pulseras de actividad, actividad física total, jóvenes, km diarios.

ABSTRACT

The main objective of the study was to examine the validity of four models of activity wristbands to estimate the daily levels of total physical activity and distance. A sample of 85 high-school and bachelor students participated in the present study. Total physical activity and distance were measured objectively by GT3X+ accelerometers (ActiGraph, LLC, Pensacola, FL, USA) placed on the participants’ right hip and four activity wristbands (Garmin Vivofit 4, Fitbit High HR, Polar A360 and Xiaomi Mi Band 2) placed on the wrist of the non-dominant hand for a full day. The Xiaomi Mi Band 2, Fitbit High HR and Garmin Vivofit 4 seem to be good instruments for estimating distance. However, to estimate total physical activity only the Xiaomi Mi Band 2 seems to be adequate.

KEYWORDS: activity wristbands, total physical activity, young people, daily km.
1. INTRODUCTION

Daily levels of total physical activity, and not only moderate-to-vigorous physical activity, are associated with numerous health benefits in adolescents\(^1,2\). In this sense, activity wristbands can be an effective tool for the promotion of physical activity in adolescent users\(^3,4,5\). Consequently, the main objective of the study was to examine the validity of four models of activity wristbands to estimate the daily levels of total physical activity and distance.

2. MATERIAL AND METHODS

A sample of 85 high-school and bachelor students participated in the present study. Total physical activity and distance were measured objectively by GT3X + accelerometers (ActiGraph, LLC, Pensacola, FL, USA) placed on the participants’ right hip and four activity wristbands (Garmin Vivofit 4, Fitbit High HR, Polar A360 and Xiaomi Mi Band 2) placed on the wrist of the non-dominant hand for a full day.

3. RESULTS

The Xiaomi Mi Band 2 (MAPE = 17.1; ICC = 0.92; LOA = -0.6), Fitbit High HR (MAPE = 20.2; ICC = 0.78; LOA = -1.8) and Garmin Vivofit 4 (MAPE = 18.4; ICC = 0.87; LOA = -0.9) showed relatively good results for distance. The Polar A360 showed poor results both in total physical activity (MAPE = 74.0, ICC = 0.09, LOA = -185.0) and distance (MAPE = 34.0, ICC = 0.75, LOA = -1.4). Only the Xiaomi Mi Band 2 showed moderately good results for total physical activity (MAPE = 13.2, ICC = 0.46, LOA = 29.5).

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4. DISCUSSION AND CONCLUSIONS

The Xiaomi Mi Band 2, Fitbit High HR and Garmin Vivofit 4 seem to be good instruments for estimating distance. However, to estimate total physical activity only the Xiaomi Mi Band 2 seems to be adequate.

REFERENCES


