

Factors Related to Accelerometer-determined Patterns of Physical Activity in Adults: The Houston TRAIN Study

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ABSTRACT

Meeting U.S. Physical Activity (PA) Guidelines has health benefits. Yet, little is known about the factors related to changes in PA over time, particularly among minority populations. **PURPOSE:** To examine sociodemographic, PA preferences, and health factors related to accelerometer-derived patterns of 1-year PA change in the Houston Travel Related Activity in Neighborhoods (TRAIN) Study, a majority-minority cohort. **METHODS:** Participants wore an ActiGraph wGT3X-BT monitor and completed self-report surveys at baseline and follow-up. Valid wear time was defined as ≥ 4 days, ≥ 10 hrs/day. PA was stratified by meeting Guidelines using total MVPA, defined by Freedson. Four PA patterns were defined: (i) 'maintain high' activity above Guidelines, (ii) 'increased' to meet Guidelines, (iii) 'decreased' from meet to not meet Guidelines, and (iv) 'maintained low' activity. Multinomial logistic regression was used to examine associations between studied factors and each PA pattern, with the 'maintain high' group as referent. **RESULTS:** Complete data were available for 153 adults (19% maintained high activity, 8.5% increased, 13% decreased, 59.5% maintained low activity). Controlling for all variables, males (OR = 0.3, 95% CI = 0.1, 0.9) had lower odds of being in the 'maintain low' group. Blacks (vs. whites, OR = 18.8, 95% CI = 2.6, 275.0), those liking biking (vs. strongly liking, OR = 4.6, 95% CI = 1.3, 15.6), and older participants (vs. younger, on continuous scale, OR = 1.1, 95% CI = 1.0, 1.1) had higher odds of being in the 'maintain low' group. Factors directly associated with being in the 'increased' group were being black (vs. white, OR = 17.9, 95% CI = 1.3, 120.9), strong dislike for biking (vs. strongly liking OR = 25.2, 95% CI = 1.6, 401.3), and having more chronic diseases (vs. less, on continuous scale, 95% CI = 1.5, 11.7). Having low educational attainment (vs. high, OR = 0.04, 95% CI = 0.0, 0.9) was inversely associated with being in the 'increased' group. No studied factors were significantly associated with being in the 'decreased' group. **CONCLUSION:** PA patterns are dynamic and suggest that sociodemographic, PA preferences, and health factors relate to change patterns over time. Future studies should examine the role of these factors over longer follow-up periods, and consider these factors when designing interventions.