

Physical Activity Epidemiology

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Abstract

The association between parenting practices and out-of-school physical activity in US adolescents in 2014

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Introduction and Objective: Lack of physical activity has been associated with increased risk of obesity, type 2 diabetes, hypertension, cardiovascular diseases, and cancer. Only 25% of US youth achieve recommended amounts of physical activity. Parenting practices have been shown to influence the physical activity of young children, but there's little evidence regarding this relationship in adolescents. The objective of this study was to examine whether parenting practices are associated with out-of-school physical activity in US middle school and high school adolescents, aged 12-17 years old, in 2014.

Methods: This cross-sectional study analyzed data collected by the FLASHE study, a web-based, self-administered survey of parent-adolescent dyads in 2014. Inclusion required parents (≥18 years old) with at least one adolescent (12-17 years old) in their household and dyads having completed all questions. Physically-limited adolescents and/or elementary school students were excluded. Main exposure variables (six parenting practice constructs): modelling, monitoring, facilitation, restriction, guided choice, and pressure. Main outcomes were out-of-school physical activity Youth Activity Profile (YAP) composite scores (a validated tool for estimating youth physical activity). Odds ratios (OR), and 95% confidence intervals (CI), were calculated using unadjusted and adjusted logistic regression analyses.

Results: Parental pressure was positively associated with out-of-school physical activity (OR 1.46; 95% CI 1.00-2.14). Guided Choice was associated with a 2.12-fold increased odds of a higher out-of-school physical activity for 15-17 year olds (OR 2.12; 95% CI 1.17-3.84). Facilitation was associated with more out-of-school physical activity for 12-14 year olds (OR 2.21; 95% CI 1.13-4.33). Monitoring was associated with 66% less out-of-school physical activity for 15-17 year olds (OR 0.34; 95% CI 0.20-0.57) and 55% less for 12-14 year olds (OR 0.45; 95% CI 0.27-0.74). Friend Support increased the odds of being more physically active out-of-school in the 15-17 age group by 403% (OR 4.03; 95% CI 2.29-7.08) and 12-14 year olds by 305% (OR 3.05; 95% CI 1.69-5.51).

Conclusion: Overall, while certain parenting practices positively relate to higher teen out-of-school physical activity, there's an apparent shift of influence from parenting practices to teen independence with increased age. Future interventions should target increasing identified parenting practices, teen decision-making, and teen friend support.

Administer health education strategies, interventions and programs Advocacy for health and health education Chronic disease management and prevention Epidemiology Public health or related education

Abstract

Does participating in physical activity moderate the relationship between adverse childhood

experiences (ACEs) and chronic health conditions?

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Background: Adverse childhood experiences (ACEs) increase one's risk for many chronic health conditions (CHCs), likely resulting from overstimulation of the stress-response system. Evidence suggests that physical activity may reduce stress and the effects of chronic conditions, but it is unclear if physical activity mitigates the negative health impact of ACEs on CHCs.

Objective: This study examines whether participating in recommended levels of physical activity moderates the relationship between ACEs and CHCs.

Methods: Data were analyzed from the 2015 Behavioral Risk Factor Surveillance System (BRFSS), focusing on three states that included all questions in the optional ACE module. Eligible participants (n=20,172/36,015) were queried on all variables of interest (ACEs, physical activity and CHCs). We compared associations between ACE exposure and CHCs (heart attack, cardiovascular disease (CVD), stroke, chronic obstructive pulmonary disease (COPD), skin cancer, cancer, asthma, arthritis, depression, and kidney disease) using multivariable logistic regression and tested whether physical activity moderates this relationship. Models were weighted using population estimates and adjusted for age, race, sex, education, income, employment, and marital status.

Results: Slightly more respondents were female (51%), >55yrs (38%), and married/in domestic partnerships (53%). Respondents were predominantly White (64%); 20% were Hispanic, and 9% were Black. 40% of respondents reported 0 ACEs, 44% reported 1-3 ACEs, and 15% reported >4 ACEs. 55% of respondents met at least one physical activity recommendation (aerobic or strengthening); 41% met neither. Significant dose-response relationships exist between ACEs and CVD, asthma, arthritis, COPD, kidney disease and depression (OR range: 1.3=ACE₁₋₃ to 5.7=ACE_{>4}). Those who met physical activity requirements had significantly lower odds for depression, kidney disease, CVD, COPD, and arthritis (OR range: 0.66 to 0.80). At lower ACE exposures, those with higher physical activity had lower probability of kidney disease, stroke, CVD, cancer, and arthritis; at higher ACE exposures, increased physical activity was associated with higher probability of the outcomes.

Conclusions: ACE exposure and inadequate physical activity are associated with higher probability for CHCs. Findings suggest physical activity may modify the relationship between ACEs and CHCs, but additional work is needed to explain these differences.

Chronic disease management and prevention Epidemiology Public health or related research

Abstract

Sleep is associated with sedentary time but not physical activity among pre-adolescent youth with elevated BMI

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Purpose: This exploratory study examined whether sleep was associated with sedentary time and moderate-to-vigorous physical activity (MVPA) among pre-adolescent youth with elevated BMI, and whether associations differed by weight category. An exploratory aim examined whether controlling for screen time changed the association of sleep with sedentary time.

Design: Methods entailed secondary analysis of baseline data from a school-based healthy weight intervention.

Setting: Data were collected from June-August 2014-2018 in metropolitan Minnesota.

Sample: Participants (N=114) included eight-to-12 year old children with BMI $\geq 75^{\text{th}}$ percentile.

Measures: Sleep and screen time were measured by validated survey, MVPA and sedentary time by Actigraph, and BMI by study staff.

Analysis: Analyses entailed descriptive statistics and multivariate linear regression.

Results: For every increased hour of sleep, children engaged in half an hour less sedentary time ($\beta = -0.55 [-1.03, -0.06]$ $p=0.03$). Subgroup analyses demonstrated this was driven by children with obesity ($\beta = -1.34 [-2.10, -0.58]$, $p<0.01$), not children without obesity ($\beta = 0.21 [-0.40, 0.81]$ $p=0.50$). The association was not influenced by screen time. Sleep was not associated with MVPA ($\beta = -0.03 [-0.10, 0.05]$ $p=0.51$), regardless of weight category.

Conclusion: Obesity reduction efforts focused on children's sleep and activity may benefit from tailoring by activity type (physical activity versus sedentary time) and weight category. Future research, including studies with larger samples and longitudinal designs, is needed.

Chronic disease management and prevention Planning of health education strategies, interventions, and programs Public health or related research

Abstract

The importance of physical activity among women in correctional settings

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purpose: Over 20 million Americans have been or are currently incarcerated and women are the fastest growing incarcerated population in the US. While incarcerated, women often experience psychological distress, which may contribute to high rates of violence and poor safety conditions in the correctional facilities. Physical activity may create safer, healthier environments in correctional institutions through biological, social, and structural mechanisms. However, little research exists on physical activity levels in jail settings. Thus, we estimated the proportion of women in a Southwest, rural jail who participated in recreation time, a structured time dedicated to being physically active, and described their physical activity levels.

methods: Our multidisciplinary research team, in collaboration with jail administrators, adapted the System for Observing Play and Recreation (SOPARC) for use in the correctional setting. As the first use of this tool, trained observers used the adapted SOPARC tool to measure the proportion of women who participated in recreation time and their physical activity levels (sedentary, walking, or vigorous) during 20 scheduled recreation times.

results: Over observed recreation times, 25% (range: 0-58%) of women incarcerated attended recreation time. Those that attended recreation time were generally sedentary (56%), with a smaller percentage choosing to walk (45%). Only very rarely did our team observe any incarcerated women engaging in vigorous exercise (5%).

conclusions: Most women incarcerated in a Southwest, rural jail did not attend recreation time and those who attended were generally sedentary. As physical activity can improve psychological distress, promoting physical activity among women incarcerated should be a priority to improve the health and safety environments of correctional facilities.

Chronic disease management and prevention Public health or related research Social and behavioral sciences

