

Patterns of Adolescent Physical Activity

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12/8/2021

Abstract

Introduction Paragraph or two

Regular physical activity can provide a myriad of benefits for adolescents. Benefits are not exclusive to physical health (e.g., bone and muscle), but also include enhancement of cognitive health and a risk reduction of depression (US Department of Health 2018). As a response to the health benefits from participating in physical activity, the U.S. Department of Health and Human Services has set national guidelines for recommendations in engaging in adequate physical activity. Specific to adolescents, these individuals should achieve at least 60 minutes of moderate-to-vigorous physical activity (MVPA) each day of the week (US Department of Health 2018). Unfortunately, the majority of adolescents in the U.S. are not meeting these recommendations for maximal health benefits, with only about eight percent of adolescents achieving 60 minutes of MVPA each day (Trost et al. 2002).

The aim of this study is to determine how adolescent MVPA may vary based on demographic characteristics (e.g., age, sex, and body mass index [BMI]). This study will also investigate if there is an association between type of schools adolescents attend and MVPA participation.

Research Questions (to be changed based on figures. included as placeholders)

1. How do patterns of physical activity for adolescents vary by BMI and demographics (school type, sex and age)?
2. How does the total amount of exercise relate to BMI and demographics?

Methods

note to team: I think methods in terms of to answer RQ, not to work with data? Sample
The Family Life, Activity, Sun, Health, and Eating (FLASHE) dataset that was used for this study was gathered by the National Cancer Institute from April to October 2014. The study has been explained in detail elsewhere (Oh et al. 2017). Briefly, it consists of a cross-sectional, internet-based study that was completed by adolescents and their parents. For the purposes of this study, only the adolescent surveys, the demographic and physical activity-related surveys, were used. **Measures** *Demographic Information* The adolescent survey included questions about age, sex, race/ethnicity, and type of school (e.g., public school). Race/ethnicity was determined with two questions. First the survey asked “Are you Hispanic, Latino/a or Spanish origin?”, followed with “Which one or more of the following would you say is your race? Please select all that apply.” Responses to these questions were then collapsed by the original researchers to create the race/ethnicity variable with observations of “Hispanic,” “Non-Hispanic Black or African American Only,”

“Non-Hispanic White only,” and “Non-Hispanic Other”. Responses for the type of school attended included *“Public school,” “Private school,” “Home-schooled,” and “Another kind of school”.*

Moderate-to-Vigorous Physical Activity

#can insert inline code into each section below

Joining Data Sets

Our data was split into 2 files for size/downloadable reasons so we joined it to make one usable data file. We chose full join because we wanted all of the variables to appropriately merge the data sets.

Cleaning data - {select}, {characterize}, and {filter}

We then wanted to characterize only select variables, hence the use of the {select}-> {characterize} functions. We could not find a way to characterize the data set as a whole without turning some variables' values to NA, so we selected certain variables, characterized them, then rejoined the data sets with the newly characterized data.

Our analysis focuses on adolescents so we {filter}ed out participants age 13-18.

Calculating BMI - {mutate}

Body Mass Index (BMI) is an effective measure of _____(Esme and Zach this is your wheel house, so leaving this definition and noting importance of BMI to you :) To calculate BMI, we utilized the {mutate} function.

Calculating Mean Physical Activity - {summarize} and {group_by}

The {group_by} function allowed us to organize our data by school type and sex to appropriately assess for associations between those demographic variables and average total weekly physical activity.

{pivot_Longer} for organizing when physical activity occurs

The initial data set divided when physical activity was completed by during the week in school (XTPREDWEEKS), during the week out of school (XTPREDWEEKOFS), and on the weekend(XTPREDWEEKW). Using {pivot_longer}, we combined the variables of when/where the physical activity was completed to better visualize across the pattern of when/where and any associations with demographic variables.

Results

We found that... ## Summary Table

Table 1. Descriptive Characteristics

Characteristic	N = 1,192 ¹
Sex	
Female	599 (50%)
Male	593 (50%)
School Type	

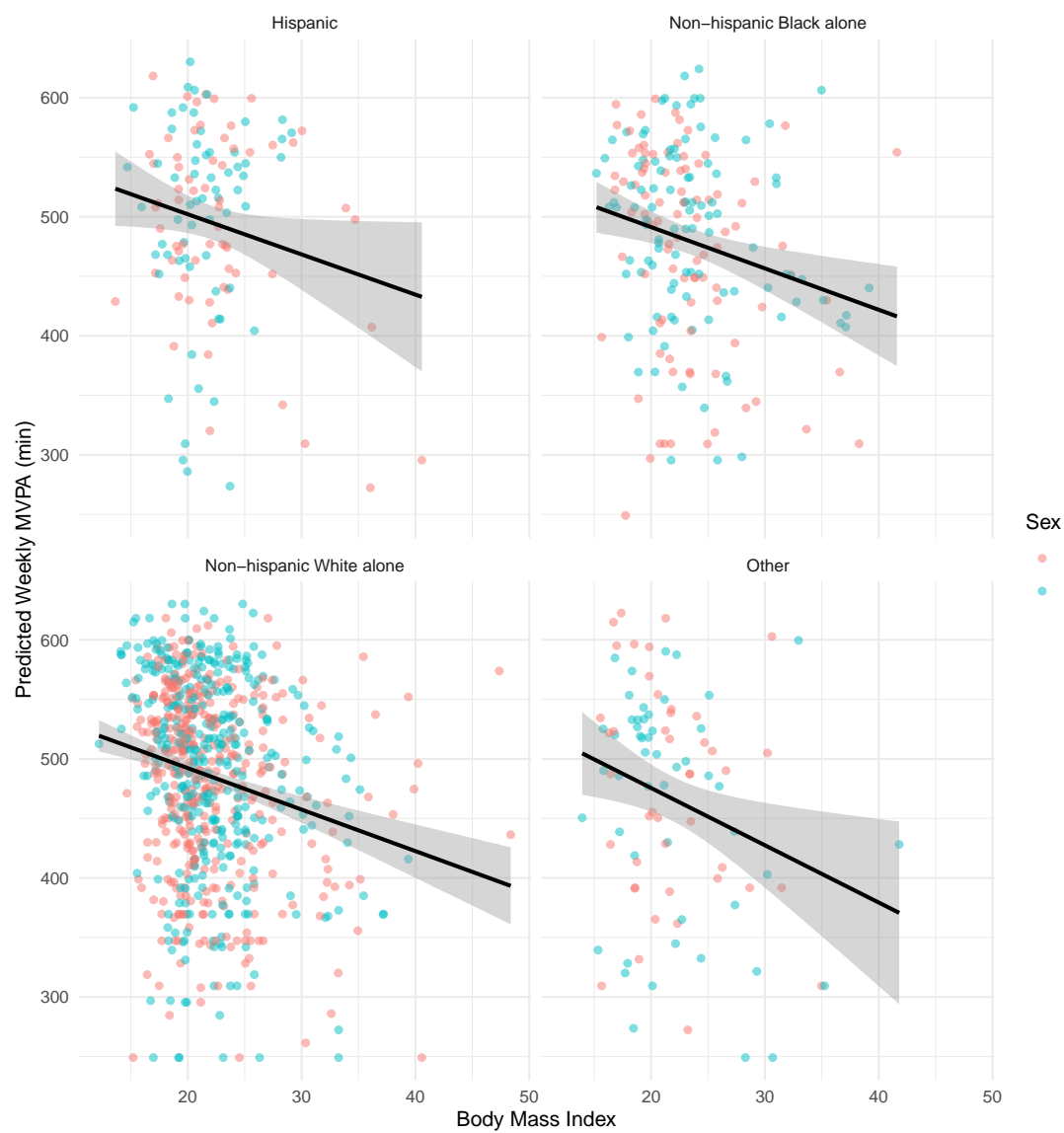
Another kind of school	18 (1.5%)
Home-schooled	65 (5.5%)
Private school	84 (7.0%)
Public school	1,025 (86%)
Race/Ethnicity	
Hispanic	127 (11%)
Non-hispanic Black alone	195 (16%)
Non-hispanic White alone	775 (65%)
Other	95 (8.0%)
Age	
13 years old	280 (23%)
14 years old	223 (19%)
15 years old	241 (20%)
16 years old	286 (24%)
17 years old	162 (14%)

¹n (%)

have code for the summary table in script and can turn it into a plot like bar/col or error bars ## MVPA by

Figure 1

Physical Activity and Body Mass Index
by Race/Ethnicity



MVPA by School Type

Figure 2

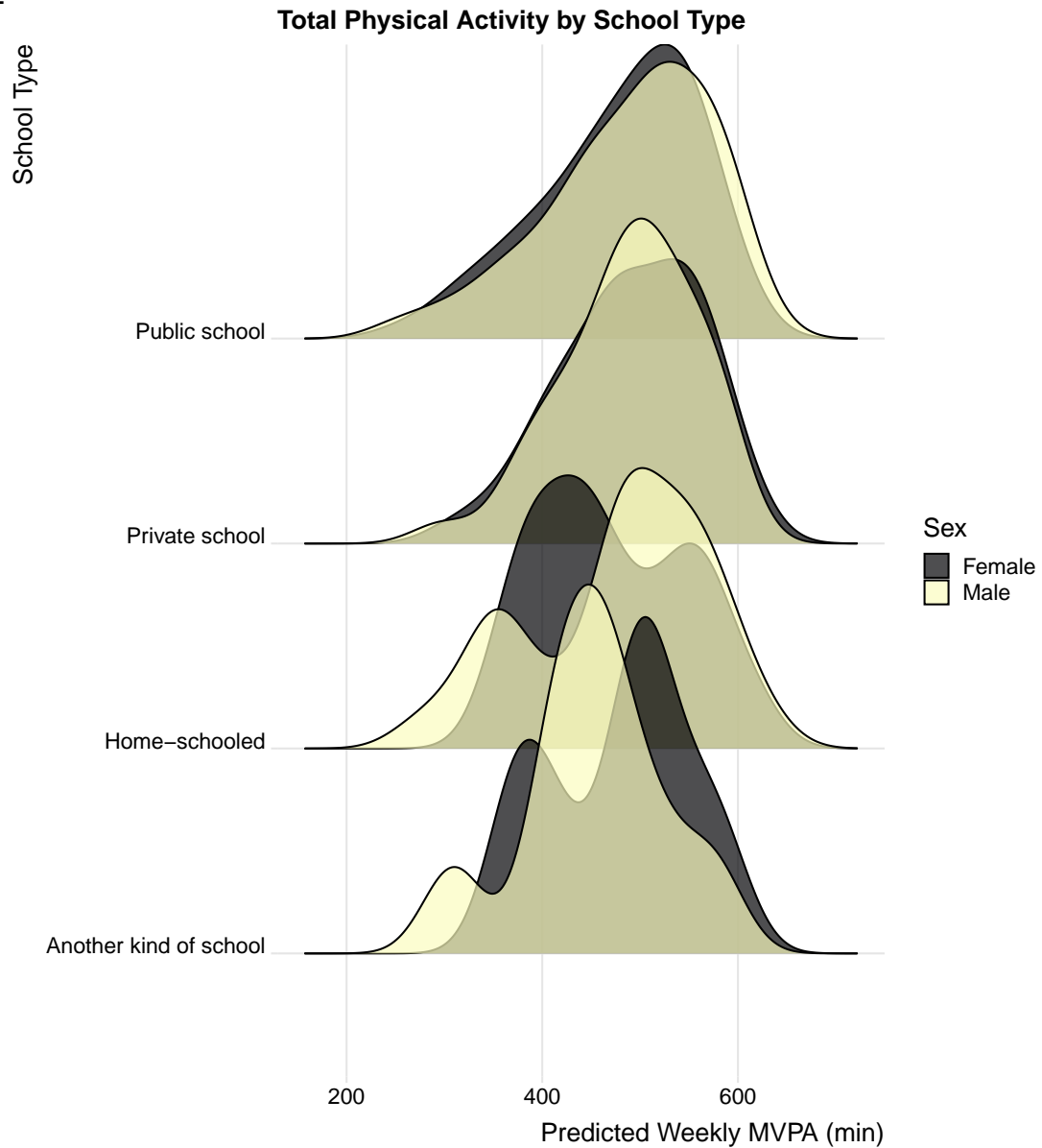


Figure 3

Discussion

Based on our analysis of adolescents who participated in the FLASE study... Implications for programs to promote physical activity in or out of school.. Implications for policy.. Next steps for research include examining what motivates adolescents to complete physical activity, and how their environment moderates or mediates the amount of physical activity they complete.

References

note I cannot correctly format US Dept of HHS

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- US Department of Health, Human Services. 2018. "Physical Activity Guidelines Advisory Committee Report." <https://www.cdc.gov/healthyschools/physicalactivity/facts.htm>.