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Adolescent Sedentary Behaviors: Correlates Differ for Television Viewing and Computer Use

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Abstract

Purpose—Sedentary behavior is associated with obesity in youth. Understanding correlates of specific sedentary behaviors can inform the development of interventions to reduce sedentary time. The current research examines correlates of leisure computer use and television viewing among California adolescents.

Methods—Using data from the 2005 California Health Interview Survey (CHIS), we examined individual, family and environmental correlates of two sedentary behaviors among 4,029 adolescents: leisure computer use and television watching.

Results—Linear regression analyses adjusting for a range of factors indicated several differences in the correlates of television watching and computer use. Correlates of additional time spent watching television included male sex, American Indian and African American race, lower household income, lower levels of physical activity, lower parent educational attainment, and additional hours worked by parents. Correlates of a greater amount of time spent using the computer for fun included older age, Asian race, higher household income, lower levels of physical activity, less parental knowledge of free time activities, and living in neighborhoods with higher proportions of non-white residents and higher proportions of low-income residents. Only physical activity was associated similarly with both watching television and computer use.

Conclusions—These results suggest that correlates of time spent on television watching and leisure computer use are different. Reducing screen time is a potentially successful strategy in combating childhood obesity, and understanding differences in the correlates of different screen

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Implications and Contributions

Reducing sedentary behaviors may decrease obesity risk among teens. This is the first study to examine the independent association of a range of factors with different screen time behaviors. Understanding differences in correlates can inform the development of more effective interventions to reduce total sedentary time by targeting specific behaviors.

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time behaviors can inform the development of more effective interventions to reduce sedentary time.

Keywords

sedentary behavior; correlates; adolescent health; screen time

Background

Lack of physical activity and more time spent in sedentary behavior are associated with obesity in youth.^{1–3} Reducing time spent in sedentary behaviors may actually reduce the risk for obesity.^{4,5} The American Academy of Pediatrics and other experts recommend that adolescents limit television and other screen time to no more than two hours per day.^{6,7} However, the typical adolescent is estimated to watch 2.5 to 3 hours of television per day and to spend an additional 1.5 to 2 hours using the computer.⁸ In recent years the amount of time adolescents spend in sedentary activities has increased largely because of increases in the amount of time spent using computers.^{8–10}

Studies examining correlates of sedentary behavior in youth typically examine factors associated with television viewing alone or with total screen time (television viewing and computer time combined).^{11–14} Few studies have examined the factors associated with television use and computer use separately.^{15,16} However, the factors associated with time spent watching television may differ from those associated with time spent using the computer. Understanding these differences can inform the development of more effective interventions to reduce total sedentary time by targeting them to specific sedentary behaviors.

Previous research suggests that the factors associated with time spent watching television likely differ from those associated with time spent using the computer. Nelson and colleagues found significant increases in computer use with no significant changes in television viewing from 1999 to 2004.⁸ More recently, a descriptive analysis conducted by Sisson and colleagues examined age, sex, racial, and income differences in the prevalence of television viewing separately from computer use.¹⁵ They found more time spent watching television among low-income adolescents and children whereas time spent using the computer did not vary with income. In addition, television viewing varied more by race/ethnicity than did computer use.

To our knowledge, no study has compared the correlates of different screen time behaviors while adjusting for a range of factors. However, Sisson and colleagues have examined the association of different screen time behaviors with overweight status.¹⁶ The present study uses population-based data to examine time spent using the computer separately from time spent watching television to determine whether the factors associated with each activity differ. Doing so allows for identification of populations with the highest prevalence of each type of sedentary behavior, which can further inform targeted interventions. Additionally, the analyses presented include a number of potential correlates of adolescent screen time not examined in previous studies. Individual sociodemographic characteristics, as well as family and environmental factors are considered. Examining factors from multiple levels within an ecological model provides information useful for the development of strategies to reduce the amount of time adolescents spend in sedentary activities at both the individual and environmental levels.

METHODS

Data Source and Population

This research used data from the 2005 California Health Interview Survey (CHIS), a random-digit dial telephone survey of more than 43,000 households designed to be representative of California's non-institutionalized population. The 2005 data is the most recent CHIS data that allows the examination of total weekly screen time in conjunction with the range of sociodemographic, family and environmental factors included in the current analysis. One randomly selected adult (age 18 or older) was interviewed in each household. In households with adolescents ages 12–17, one adolescent was randomly selected and interviewed directly after obtaining parental permission and assent from the adolescent. A total of 4,029 adolescents completed the survey, representing a completion rate of 48.5%.¹⁷ Interviews were conducted in English, Spanish, Chinese, Vietnamese, and Korean. Detailed information about California Health Interview Survey methodology is available elsewhere.¹⁸

Outcome Measures

Adolescent responses to four questions were used to assess the amount of time spent watching TV/playing video games and using the computer for fun: (1) "Thinking about your free time on Monday through Friday, on a typical day, about how many hours do you usually watch TV or play video games (such as Playstation)?" (2) "Thinking about a typical Saturday and Sunday, about how many hours per day do you usually watch TV or play video games (such as Playstation)?" (3) "About how many hours per day on Monday through Friday do you use a computer for fun, not schoolwork?", and (4) "About how many hours per day on a typical Saturday or Sunday do you use a computer for fun, not schoolwork?" Responses were recorded as continuous variables. For each type of screen time, responses for weekdays were multiplied by 5 to reflect total hours for Monday through Friday, and responses for weekends were multiplied by two to reflect total hours for Saturday and Sunday. These were added together to estimate the total weekly hours for TV/video viewing and for computer use. Similar measures have been used in previous research and were found to have good reliability and validity for adolescents.^{4,19–21} Adolescents who reported having no television (n=4) or no access to a computer (n=60) were excluded from the corresponding analyses.

Correlates

The following sociodemographic characteristics were included: age, sex, race/ethnicity, household income and adolescent work status. Additionally, analyses accounted for several key variables including number of days physically active for at least 60 minutes during the past week. In the adolescent survey, physical activity was defined as "any activity that makes your heart beat faster and also makes you breathe faster." Analyses included the following family characteristics: parental education, nativity, and work status, adult presence after school, and parental knowledge of adolescent's activities during free time. Finally, analyses included the following neighborhood characteristics: urbanicity, parental perceptions of neighborhood safety, and neighborhood income and racial composition.

Adolescents reported their age, sex and race/ethnicity (White, Latino, Asian, African-American, American Indian, mixed race). In addition, they reported the number of days in the past week that they were physically active for at least 60 minutes (0, 1–4, 5 or more), whether they worked in the past year (yes, no), how often an adult was present after school (always or most of the time vs. sometimes, almost never or never), and how much parents knew about their whereabouts after school (a lot vs. little or nothing).

Household income, household address, parental educational attainment, parental nativity, parental work status, and perceptions of neighborhood safety were reported by the adult respondent. Household income was examined as percent of the Federal Poverty Level (FPL): below 200% vs. 200% and above.²² Parental nativity was coded as: both parents born in the U.S., one parent born in the U.S., or both parents foreign-born. Parental work status was examined as: both parents work full time (including households with a single parent that works full-time); at least one parent works part-time, or at least one parent does not work outside the home. Parental educational attainment was coded as: high school or less, some college, college graduate. This variable represents the educational attainment of the responding parent only. Perceptions of neighborhood safety were based on ratings of how often the adult felt safe in the neighborhood (all of the time, most of the time, and some or none of the time). Household address was used to determine the census tract in which a family lives. Data from the 2000 Census were linked by census tract to examine neighborhood income and neighborhood racial composition. Census tracts in which 30% or more of the households were below 200% FPL were considered lower-income. Neighborhood racial composition was examined as percent of the population in the census tract that was non-Hispanic white (<50% or 50% +).

Using data obtained from CLARITAS, households were assigned to urbanicity levels (urban, suburban, rural) based on population density of the household's ZIP code and surrounding areas.

Statistical Analyses

Linear regression analyses were used to examine the association of individual sociodemographic, family and environmental characteristics with hours spent watching TV/playing video games and hours spent in leisure computer use. Each potential correlate's association with the screen time outcomes was examined in linear regression models adjusting for age, sex, race and income. Correlates that were not independently associated with either screen time outcome ($p > 0.20$) were not included in the final model. Consequently, parental perceptions of neighborhood safety was not included in the final models. Due to missing values for some variables, regression analyses examining TV watching as an outcome included 3,508 adolescents and regression analyses examining computer time as an outcome included 3,459. Data were analyzed with SAS version 9.2 and SUDAAN version 10.0.1. Analyses were weighted to be representative of the California population and adjusted for the complex survey design of CHIS. The Office for the Protection of Research Subjects at the University of California, Los Angeles, certified this research exempt.

RESULTS

The average age of adolescent respondents in this analysis was 14.4 years, and 49% were female. In addition, 41% were White, 34% Latino, 11% Asian, 9% African-American, and 5% mixed race; 13% lived in rural areas, 19% in suburban areas, and 68% in urban areas. Table 1 displays additional characteristics of California adolescents, their parents and their neighborhoods.

Adolescents spent an average of 16.4 hours watching TV or playing video games during a typical week and an additional 10 hours using the computer for non-school activities. Table 2 presents the unadjusted average number of hours watching TV and using the computer by sociodemographic, family, and environmental characteristics.

Table 3 presents the adjusted regression results for time spent on television viewing and leisure computer use during a typical week by sociodemographic, family and environmental

characteristics. Adjusting for these covariates, the present analyses indicated several differences in the correlates of TV watching and computer use. Correlates of additional time spent watching television included male sex, American Indian and African American (vs. White) race, lower household income, not participating in at least 60 minutes of physical activity on any of the previous seven days (vs. being active on at least 5 days in the previous week), and having both parents or a single parent work full time. In contrast, correlates of additional leisure computer use included older age, Asian (vs. White) race, higher household income, being physically active on fewer than 5 days per week, reporting that parents know little or nothing about free time activities, and living in a predominantly non-white or higher-income neighborhood. Adolescent work status, presence of parent after school, and parental educational attainment and nativity were not independently associated with time spent in either sedentary behavior.

Adolescents' race/ethnicity produced the largest effect sizes for time spent on television viewing as well as leisure computer use, although the patterns differed across the two outcomes (Table 3). African-American adolescents watched approximately 6 more hours of TV per week and American-Indian adolescents watched more than 10 additional hours compared to whites. In contrast, Asian adolescents spent an estimated 5 additional hours using the computer for fun than whites. Engaging in physical activity also had a relatively strong association with the screen time behaviors. Adolescents who did not engage in at least 60 minutes of physical activity on any day in the past week watched an estimated 3.8 additional hours of TV per week and used the computer an additional 1.7 hours per week compared to adolescents who were active on 5 or more days. Finally, parental knowledge of free time activities showed a relatively strong association with leisure computer use. Adolescents whose parents had little knowledge of their free time activities spent an estimated 2.5 additional hours per week using the computer for fun than those whose parents had a lot of knowledge.

DISCUSSION

In our sample, adolescents spent an average of 26.4 hours per week (approximately 3.8 hours per day) watching TV, playing video games, or using a computer for fun, substantially higher than the recommended maximum of two hours per day. Thirty-eight percent of the total screen time (10 hours per week) was spent in leisure-time computer use, suggesting that computer use is an important aspect of total adolescent sedentary behavior. In addition, the current results suggest there are differences in the correlates of time spent watching TV and on leisure-time computer use among adolescents. Although sociodemographic and family factors were associated with both outcomes, the specific correlates of TV watching and computer use differed.

Engaging in physical activity was the only correlate that was significantly associated with both types of screen time in the same direction. Specifically, adolescents who engaged in physical activity on more days per week spent less time watching TV and less time using the computer for fun. This is consistent with some previous research, which found that lower levels of physical activity were associated with more screen time among adolescents.^{23,24} Some previous studies found no association between sedentary behaviors and physical activity, but these studies did not include leisure computer time.^{25,26} Researchers have hypothesized that time spent on sedentary behaviors may be replacing time spent in more active pursuits.²⁷ If the adolescents in our study are replacing physical activity with screen time, our results suggest that different adolescents are at risk for replacing physical activity time with computer time, compared to TV time.

The current findings suggest that, adjusting for a number of factors, adolescent boys spend more time watching TV than adolescents girls, which is consistent with previous research.^{15,28} Although other studies found males spent more time in both TV and leisure computer use or both combined,^{15,24} our results do not find a difference in computer use between boys and girls.

Race/ethnicity was differentially associated with TV viewing and leisure computer use. We found that African-American and American-Indian teens spent more time watching TV than white teens, but Asian adolescents spent more time using the computer. Although the finding that African-American teens watch more TV is consistent with previous research,^{11,19} few previous studies have been able to examine the screen time behavior of Asian and American-Indian adolescents.²⁹ By including TV/video game and leisure computer use as separate outcomes, we have captured a more comprehensive picture of total screen time behavior across racial and ethnic groups.

Our results also indicated that lower household income was associated with more hours of TV viewing, but less leisure-time computer use. Previous findings regarding the association of income with screen time have been mixed, but most studies found inverse relationships between indicators of SES and screen time.³⁰ Specifically, Sisson et al. found differences in TV viewing as a function of income, and Gordon-Larsen et al. found that higher income was associated with less sedentary time.¹⁵ However, two previous studies found no association between income and TV viewing.^{11,31}

In the current study, lower levels of parental education were associated with more time spent watching TV, but not with leisure computer time. Previous research has produced mixed results with some studies suggesting lower levels of parental education are associated with more TV viewing^{11,19,32} and other studies finding no association between parental education and total sedentary time (including other sedentary behaviors such as sitting and listening to music).¹³ However, differences in how sedentary time was measured and the behaviors included may account for some of these differences.

Greater adolescent perception of parental knowledge of adolescents' free time activities was associated with less leisure computer time but was not associated with TV viewing. Previous research suggests that other types of parental involvement are associated with less total screen time.^{13,24} It is not clear why this would be the case for computer time but not TV time in the current study.

Parental work status was associated with television time. Adolescents with at least one parent that works part-time or that does not work outside the home spent less time watching TV than adolescents whose parents work full-time. However, parental work status was not associated with leisure computer use. This is inconsistent with previous research that found no association between parental work status and TV viewing.³¹ That study included ages 12–13, and perhaps the age difference in the populations studied accounts for the discrepant results.

The current study found no association between parent perceptions of neighborhood safety and time spent watching TV or using the computer for fun. Some previous research has found perceptions of greater neighborhood safety were associated with less time spent in sedentary behavior.^{3,33} For example, one study found that pre-school children who lived in neighborhoods their mothers perceived as unsafe watched significantly more TV than those in safer neighborhoods.³³ However, other studies found that neither actual crime rates nor perceptions of safety were associated with total sedentary time among adolescents.^{13,32,34} The difference in these results may be due to differences in the age of participants. It is

likely that parental perceptions of the neighborhood are less related to adolescent behavior than to behavior of younger children because adolescents have more autonomy.

Neighborhood income and neighborhood racial composition were associated with leisure computer time, but not TV viewing. Adolescents who live in lower-income neighborhoods spent less time using the computer than those in higher-income neighborhoods. This mirrors our findings for household income. Few previous studies have examined the relationship of neighborhood socioeconomic factors with screen time. MacLeod et al. found that adolescent girls living lower-income neighborhoods spent more time watching TV, and Broderson et al. found that greater area deprivation (an indicator of neighborhood SES) was associated with more total sedentary time among adolescent girls.^{11,35} Previous findings may differ from ours due to differences in measurement of sedentary behavior as well as because the current study did not examine correlates for boys and girls separately. The current study also found that adolescents who live in predominantly white neighborhoods spend less time using the computer for fun. Predominantly white neighborhoods may also be more likely to have low concentrations of immigrants, and previous research has found that adolescents living in neighborhoods with a low concentration of immigrants were less likely to exceed screen time recommendations.³⁶

Our findings have the potential to inform the development of more effective interventions to reduce screen time among youth. For example, the current results suggest that employing different strategies to reduce leisure computer use and television viewing may be more effective than employing the same strategies for both types of sedentary behaviors. In addition, the relatively large and differential effects seen across racial and ethnic groups suggest that researchers should investigate and test the effectiveness of interventions across race groups and types of sedentary behaviors. Different strategies may be more effective for some groups than for others or for some sedentary behaviors than others. Researchers should also consider strategies to increase time spent being physically active as this might result in reductions in time spent in sedentary behavior.^{24,27} Our findings also indicated that having parents with little knowledge of free time activities was associated with more computer use. Interventions might attempt to increase parental knowledge of adolescent free time activities. This could involve helping or encouraging parents to establish rules limiting screen time, as researchers have found that setting limits on screen time is associated with reduced screen time among adolescents.³⁷ Finally, we found that adolescents with parents who work full time watched more television. Researchers should examine the potential benefits of incorporating after-school programs, particularly those involving physical activity, into interventions to reduce screen time.³⁸

The current research has some limitations. First, the screen time questions combined TV viewing and video game playing so we are not able to examine these sedentary behaviors separately. In addition, the questions do not allow us to exclude physically active gaming from our estimates of screen time. Second, self-reported screen time measures may be prone to underestimation, although differences between self-report and objective measures have been shown to be minor.²⁰ Additionally, research suggests these measures have good reliability and validity among adolescents, and these measures are similar to those used in national surveillance systems.^{19–21,32} Finally, the current research employed cross-sectional data and we therefore cannot draw causal conclusions on the basis of these findings.

Important strengths of this study include its large sample size and inclusion of several potential correlates of adolescent screen time at the individual, household and neighborhood levels. The major strength of this study is its inclusion of leisure-time computer use as its own outcome, allowing for the first time the identification potential correlates of computer use separate from that of TV viewing.

Conclusion

Our results suggest that although sociodemographic and family factors were associated with both leisure-time computer use and television viewing, the correlates of these two behaviors differ. In addition, some of the environmental characteristics examined in this study were associated with computer use, but none were associated with TV watching. Previous studies have not examined the correlates of different sedentary behaviors separately to determine differences in correlates. Reducing screen time is a potentially successful strategy in combating childhood obesity, and understanding differences in the correlates of specific screen time behaviors can inform the development of more effective interventions to reduce sedentary time. Future research should consider increasing physical activity and helping parents establish limits for screen time as part of interventions to reduce screen time.

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Abbreviations

CHIS	California Health Interview Survey
FPL	Federal Poverty Level

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Table 1

Characteristics of Adolescents, California, 2005

	Unweighted n (N = 4,029) ^a	Weighted % ^b
Age (mean)	4,029	14.4
Gender		
Female	1,979	48.8
Male	2,050	51.2
Race/ethnicity		
White	2,147	40.6
Latino	1,037	34.0
Asian	353	10.7
African American	233	8.5
American Indian	59	1.5
Mixed race	200	4.7
Household income ^c		
<200% FPL	1,297	41.5
200% FPL	2,732	58.5
Adolescent worked in past year		
Yes	1,901	41.9
No	2,128	58.1
Number days physically active for at least 60 min.		
0 days	514	14.5
1–4 days	1,881	45.3
5 or more days	1,634	40.2
Parental nativity		
Both parents born in U.S.	2,406	49.9
One parent foreign-born	568	15.4
Both parents foreign-born	1,055	34.6
Parental education		
High school or less	1,508	45.8
Some college	1,062	26.1
College degree or higher	1,459	28.1
Parental work status		
Parents work full-time	1,511	45.1
At least one parent works part-time	918	22.6
At least one parent does not work	1,134	32.3
Adult present after school		
Most of the time	3,380	83.8
Some of the time or never	649	16.2
Parental knowledge of free time activities		
Knows a lot	3,030	71.4
Knows little or nothing	999	28.6

	Unweighted n (N = 4,029) ^a	Weighted % ^b
Parental perception of neighborhood safety		
Always feels safe	2,355	61.9
Feels safe most of time	1,034	30.2
Feels safe some or none of time	201	7.9
Urbanicity		
Urban	2,420	68.0
Suburban	849	19.2
Rural	760	12.8
Neighborhood racial composition (percent white)		
Less than 50% white	1,553	49.8
50% or more white	2,476	50.2
Neighborhood income ^d		
Lower-income neighborhood	1,732	49.3
Higher-income neighborhood	2,297	50.7

^aSome sample sizes may not add to total due to missing values.

^bResults are weighted to be representative of the California population FPL, Federal Poverty Level

^cIn 2005 200% FPL was \$39,942 for a family of four

^dCensus tracts in which 30% or more of the households were below 200% of the Federal Poverty Level were considered lower-income

Table 2Average Hours of Television Viewing and Computer Use during a Typical Week among Adolescents ^a

Factor	Television Viewing Mean (SE), hrs/week	Computer Use Mean (SE), hrs/week
Overall	16.4 (0.30)	10.0 (0.26)
Gender		
Female	15.7 (0.41)	9.9 (0.34)
Male	17.1 (0.43)	10.1 (0.39)
Race/ethnicity		
White	14.5 (0.32)	10.1 (0.28)
Latino	17.1 (0.56)	8.2 (0.51)
Asian	14.9 (0.81)	14.4 (0.87)
African American	22.7 (1.30)	11.8 (1.20)
American Indian	25.7 (4.74)	8.2 (1.63)
Mixed Race	17.3 (1.64)	9.6 (1.31)
Household income ^b		
0–199% FPL	18.2 (0.57)	8.6 (0.48)
200% FPL and above	15.2 (0.31)	11.0 (0.28)
Worked in past year		
Yes	15.4 (0.47)	10.4 (0.39)
No	17.2 (0.38)	9.7 (0.35)
Number days physically active for at least 60 min.		
0 days	19.8 (0.89)	11.3 (0.70)
1–4 days	16.0 (0.35)	10.5 (0.40)
5 or more days	15.7 (0.53)	9.0 (0.39)
Parental nativity		
Both parents born in U.S.	16.4 (0.39)	10.5 (0.30)
One parent foreign-born	16.5 (0.92)	10.2 (0.73)
Both parents foreign-born	16.5 (0.51)	9.2 (0.52)
Parental education		
High school or less	17.5 (0.45)	8.8 (0.41)
Some college	17.1 (0.69)	10.9 (0.55)
College degree or higher	14.1 (0.39)	11.0 (0.37)
Parental work status		
Parents work full-time	17.2 (0.45)	10.6 (0.40)
At least one parent works part-time	15.4 (0.52)	9.7 (0.45)
At least one parent does not work	16.5 (0.65)	9.6 (0.57)
Adult present after school		
Most of the time	16.6 (0.33)	9.6 (0.28)
Some or none of the time	15.5 (0.72)	12.0 (0.68)
Parental knowledge of free time activities		
Knows a lot	15.9 (0.34)	9.1 (0.26)
Knows little or nothing	17.7 (0.61)	12.2 (0.62)

Factor	Television Viewing Mean (SE), hrs/week	Computer Use Mean (SE), hrs/week
Urbanicity		
Urban	16.9 (0.39)	10.0 (0.34)
Suburban	15.6 (0.57)	10.4 (0.48)
Rural	15.2 (0.55)	9.2 (0.59)
Parental perception of neighborhood safety		
Always feels safe	16.3 (0.39)	10.1 (0.35)
Feels safe most of time	16.9 (0.56)	10.6 (0.45)
Feels safe some or none of time	18.1 (1.38)	8.8 (1.35)
Neighborhood racial composition		
Less than 50% white	17.9 (0.47)	9.9 (0.43)
At least 50% or more white	14.9 (0.37)	10.1 (0.29)
Neighborhood income ^c		
Lower-income neighborhood	17.8 (0.47)	9.0 (0.42)
Higher-income neighborhood	15.1 (0.36)	10.9 (0.31)

^aResults are weighted to be representative of the California population and are adjusted for complex survey design effects

^bIn 2005 200% FPL was \$39,942 for a family of four

^cCensus tracts in which 30% or more of the households were below 200% of the Federal Poverty Level were considered lower-income

SE, standard error; FPL, Federal Poverty Level;

Table 3

Factors Associated with Hours of Television Viewing and Computer Use in a Typical Week among Adolescents^a

Factor	Television Viewing (95% CI) ^b	Computer Use (95% CI) ^b
Intercept	15.25 (9.36, 21.15)	0.17 (5.54, 5.88)
Age	−0.04 (−0.41, 0.33)	0.70 (0.37, 1.03)***
Gender		
Female	−1.78 (−3.05, −0.51)***	−0.32 (−1.39, 0.76)
Male	ref	ref
Race/ethnicity		
White	ref	ref
Latino	1.53 (−0.97, 4.03)	−0.14 (−1.74, 1.45)
Asian	0.81 (−1.8, 3.42)	5.05 (2.68, 7.42)***
African American	6.08 (3.45, 8.71)***	1.51 (−1.03, 4.05)
American Indian	10.91 (1.64, 20.19)**	−0.10 (−3.87, 3.67)
Mixed Race/Other/PI	1.85 (−1.51, 5.21)	0.56 (−2.3, 3.42)
Household income ^c		
0–199% FPL	1.94 (0.24, 3.64)**	−1.62 (−2.89, −0.35)***
200–299% FPL	ref	ref
Worked in past year		
Yes	ref	ref
No	1.11 (−0.15, 2.38)*	−0.32 (−1.48, 0.84)
Number days physically active for at least 60 min.		
0 days	3.79 (1.75, 5.83)***	1.74 (0.05, 3.44)**
1–4 days	0.78 (−0.53, 2.09)	1.43 (0.33, 2.53)***
5 or more days	ref	ref
Parental nativity		
Both parents born in U.S.	ref	ref
One parent foreign-born	−0.91 (−3.14, 1.33)	−0.67 (−2.52, 1.19)
Both parents foreign-born	−1.60 (−3.96, 0.75)	−1.21 (−3, 0.57)
Parental education		
High school or less	ref	ref
Some college	0.40 (−1.45, 2.24)	1.13 (−0.42, 2.69)
College degree or higher	−1.30 (−2.81, 0.21)*	0.12 (−1.21, 1.45)
Parental work status		
Parents work full-time	ref	ref
At least one parent works part-time	−1.54 (−2.86, −0.22)**	−0.73 (−1.89, 0.43)
At least one parent does not work	−1.55 (−3.04, −0.05)**	−0.04
Adult present after school		
Always or most of the time	ref	ref

Factor	Television Viewing (95% CI) ^b	Computer Use (95% CI) ^b
Sometimes, almost never or never	-1.17 (-2.8, 0.45)	0.83 (-1.37, 1.28)
Parental knowledge of free time activities		
Knows a lot	ref	ref
Knows little or nothing	0.85 (-0.7, 2.39)	2.47 (1.15, 3.78)***
Urbanicity		
Urban	1.02 (-0.47, 2.51)	0.15 (-1.25, 1.56)
Suburban	0.81 (-0.87, 2.5)	0.04 (-1.54, 1.63)
Rural	ref	ref
Neighborhood racial composition		
Less than 50% white	ref	ref
50% or more white	-0.63 (-2.25, 0.98)	-1.33 (-2.52, -0.14)**
Neighborhood income ^d		
Lower-income neighborhood	0.62 (-0.81, 2.06)	-1.41 (-2.63, -0.2)**
Higher-income neighborhood	ref	ref

^a Results are weighted to be representative of the California population and are adjusted for complex survey design effects

^b Adjusted for all variables presented in this table

^c In 2005 200% FPL was \$39,942 for a family of four

^d Census tracts in which 30% or more of the households were below 200% of the Federal Poverty Level were considered lower-income

* $p < 0.10$;

** $p < 0.05$;

*** $p < 0.01$ compared to reference category

FPL, Federal Poverty Level