Factors Associated with Adolescent Sedentary Behavior: TV Watching and Computer Use

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American Public Health Association Annual Meeting
Philadelphia, PA
November 10, 2009

Background

- Lack of physical activity and increased time spent in sedentary behavior are associated with obesity in youth
- Reducing time spent in sedentary activities such as watching TV may reduce the risk for obesity
- Sedentary behavior among adolescents is increasingly common
- Different types of sedentary behavior may be associated with different sociodemographic, family and environmental factors

Data Source – CHIS 2005

- **2005 California Health Interview Survey (CHIS)**
- Telephone survey of adults, adolescents and children from across the state conducted every two years
  - CHIS 2005 interviewed over 43,000 households in California. In households with adolescents, CHIS interviewed one randomly selected adolescent
- The data provide a representative sample of the state's non-institutionalized population, including health information on the overall population and on many racial and ethnic groups as well as local-level health information for most counties

Data Source – continued

- Interviews are conducted in five languages: English, Spanish, Chinese, Korean and Vietnamese
- CHIS collects respondent addresses

Outcome Variables

- **Hours spent watching TV/playing video games**
  - "Thinking about a typical Saturday or Sunday, about how many hours per day do you usually watch TV or play video games?"
- **Hours spent using a computer**
  - "About how many hours per day on a typical Saturday or Sunday do you use a computer for fun, not schoolwork? "

Potential Correlates of Sedentary Behaviors

- Individual socio-demographic characteristics
  - Age, gender, race/ethnicity, household income, adolescent work status
- Family factors
  - Parental education, parental nativity, parental work status, adult presence after school, parental knowledge of whereabouts after school
- Environmental factors
  - Parental perceptions of neighborhood safety, urbanicity, neighborhood income, neighborhood racial composition

Analyses

- **Sample**
  - 4029 adolescents ages 12-17
- **Descriptive analysis**
  - Average number of hours spent watching TV and using computer
- **Multiple regression**
  - Models predicting number of hours spent watching TV and number of hours spent using computer
  - Included individual sociodemographic, family and environmental factors as potential correlates

Study Population

- 49% female
- 53% white, 21% Latino, 9% Asian, 6% African American, 1% American Indian, 9% mixed race
- 32% have household incomes below 200% of the Federal Poverty Level
- 36% had parents with high school education or less
- 40% were physically active for at least 60 min on 5 or more days per week

Descriptive Results

- On a typical weekend day, teens spent
  - 2.9 hours watching TV or playing video games
  - 1.6 hours using computer for non-school activities
- In unadjusted analyses
  - Substantial differences in amount of sedentary time appeared by
    - Gender
    - Race and ethnicity
    - Physical activity status

Hours Spent on TV or Video Games

Factor	Hours of TV/Video Games Average	95% CI
Gender		
Male	3.1	2.9 - 3.2
Female	2.7	2.6 - 2.9
Race/ethnicity		
Latino	2.9	2.7 - 3.1
Asian	2.8	2.5 - 3.1
African American	3.8	3.3 - 4.4
American Indian	5.7	3.9 - 7.5
White	2.6	2.5 - 2.7
Mixed Race/Ethnicity	3.1	2.7 - 3.5
60 Minutes of Physical Activity past week		
No Days	3.3	3.0 - 3.7
Some Days	2.9	2.7 - 3.0
Most Days	2.8	2.6 - 2.9
Worked in past 12 months		
Yes	2.7	2.5 - 2.9
No	3.1	2.9 - 3.2
Parental Educational Attainment		
Less than high school	2.9	2.7 - 3.2
High school diploma	3.1	2.8 - 3.3
Some college	3.0	2.7 - 3.3
College degree or higher	2.6	2.4 - 2.7

Source: 2005 California Health Interview Survey

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Hours Spent on non-school Computer Use

Factor	Hours of Computer Use Average	95% CI
Age		
12-14	1.4	1.2 - 1.5
15-17	1.8	1.6 - 1.9
Race/ethnicity		
Latino	1.1	1.0 - 1.3
Asian	2.6	2.3 - 2.9
African American	1.8	1.3 - 2.3
American Indian	1.3	0.8 - 1.8
White	1.6	1.5 - 1.7
Mixed Race/Ethnicity	1.4	1.1 - 1.8
Family Income		
Below 100% FPL	1.1	0.9 - 1.4
100-299% FPL	1.5	1.3 - 1.7
300% FPL and above	1.8	1.7 - 1.9
60 Minutes of Physical Activity past week		
No Days	1.8	1.6 - 2.0
Some Days	1.6	1.5 - 1.7
Most Days	1.4	1.2 - 1.5
Parental knowledge of free time activities		
Knows a lot	1.4	1.3 - 1.5
Knows little or nothing	1.8	1.6 - 2.0
Neighborhood Income		
Higher-income neighborhood	1.8	1.7 - 1.9
Lower-income neighborhood	1.3	1.2 - 1.4

Source: 2005 California Health Interview Survey

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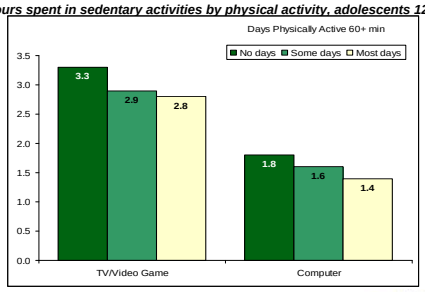
Adolescents Getting More Physical Activity Spent Less Time in Sedentary Behaviors

Hours spent in sedentary activities by physical activity, adolescents 12-17



Source: 2005 California Health Interview Survey

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Correlates of TV and Video Game Use

Factor	Coefficient	p-value
Gender (male)		
Female	-0.39	0.00
Race/ethnicity (white)		
Latino	0.30	0.15
Asian	0.21	0.41
African American	1.07	0.00
American Indian	3.28	0.00
Other	0.19	0.59
Physical Activity past week (most days)		
No Days	0.55	0.01
Some Days	0.18	0.15
Worked for pay in last 12 mos (yes)		
No	0.33	0.01
Parental Educational Attainment (college +)		
Less than high school	0.21	0.36
High school diploma	0.51	0.00
Some college	0.25	0.08

Model adjusted for age, family poverty level, frequency of adult supervision after school, parental knowledge about free time activities, parental nativity, parental marriage and work status, urban or rural neighborhood, subjective safety of neighborhood, census tract % nonwhite race/ethnicity, and census tract poverty

Source: 2005 California Health Interview Survey

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Correlates of non-school Computer Use

Factor	Coefficient	p-value
Age	0.12	0.00
Race/ethnicity (white)		
Latino	-0.09	0.49
Asian	1.06	0.00
African American	0.20	0.43
American Indian	0.04	0.92
Other	0.34	0.24
Family income (300%+ FPL)		
0-99 % FPL	-0.48	0.00
100-199 % FPL	-0.09	0.51
200-299 % FPL	-0.23	0.07
Physical Activity past week (most days)		
No Days	0.33	0.03
Some Days	0.19	0.04
Parents' knowledge of free-time activities (versus "a lot")		
Little/nothing	0.30	0.01
Racial/ethnic composition of neighborhood (white)		
Predominantly non-white	-0.29	0.01
Neighborhood Income (higher-income)		
Lower-income neighborhood	-0.36	0.00

Model adjusted for gender, adolescent work status, frequency of adult supervision after school, parental nativity, parental marriage and work status, parental educational attainment, urban or rural neighborhood, and subjective safety of neighborho

Source: 2005 California Health Interview Survey

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Summary

- On a typical weekend day, adolescents spent an average of 2.9 hours watching TV or playing video games and an additional 1.6 hours using the computer for non-school activities
- There are differences in the correlates of time spent watching TV or using video games and time spent using the computer
- Environmental characteristics were associated with computer use, but not TV time
- Getting more physical activity is associated with less time spent on both TV viewing and computer use

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Limitations

- Television viewing and video gaming were combined
- No way to identify active video gaming
- Cross-sectional analysis does not allow us to determine the direction of the relationship

Conclusions

- The correlates of TV watching and computer use differed - may need to approach these issues differently.
- Some environmental characteristics examined in this study were associated with computer use, but none were associated with TV watching.
- Understanding differences in the correlates of screen time can help inform the development of more effective interventions to reduce screen time.

Acknowledgements

- Co-authors:
  - Theresa Hastert, MPP
  - Malia Jones, MPH
- Funding for this study:
  - Robert Wood Johnson Foundation
- Major funding for data collection on physical activity and sedentary behavior in the 2005 California Health Interview Survey:
  - The California Endowment
  - Robert Wood Johnson Foundation
  - National Cancer Institute