

# **Association of special health care needs and parental mental health and parenting stress with sedentary lifestyles in children**

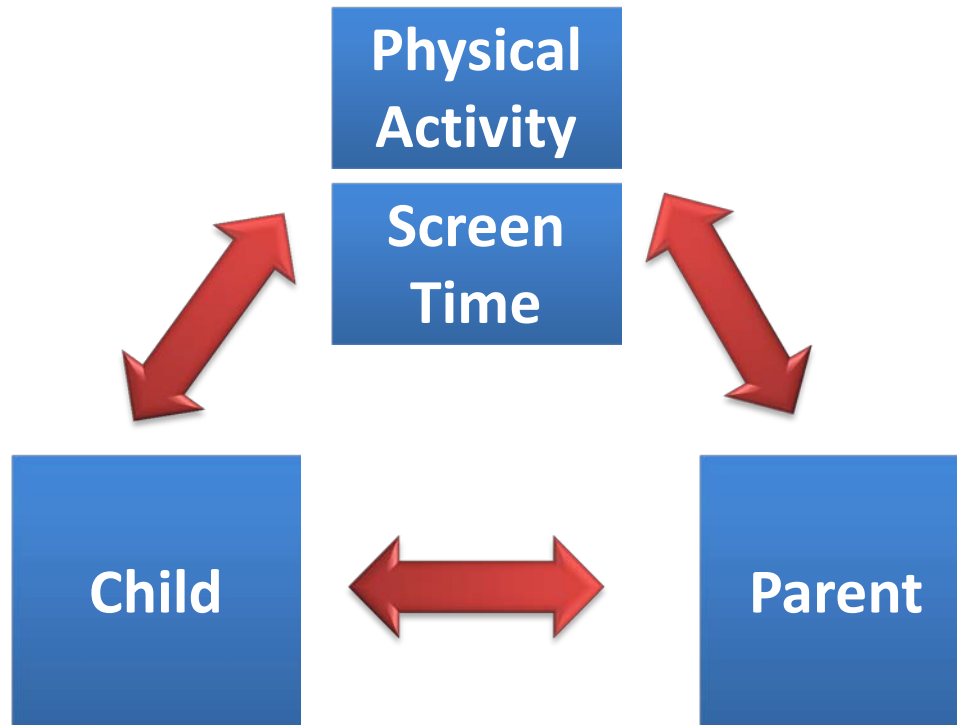
2012 National Conference on Health Statistics  
Student Research Showcase

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# BACKGROUND AND CONCEPTUAL FRAMEWORK

Bandura's Triadic Reciprocal Determinism: Individual, Environment, Behavior



# National Survey of Children's Health 2007

- Nationally representative
- Phone survey
- Parent reports
- Wide range of questions about children's health, behavior, activities, families
- 64,076 children aged 6-17
- 15,049 children with special health care needs
- Publicly available dataset (de-identified)

# Defining Sedentary Lifestyle

## Low Physical Activity

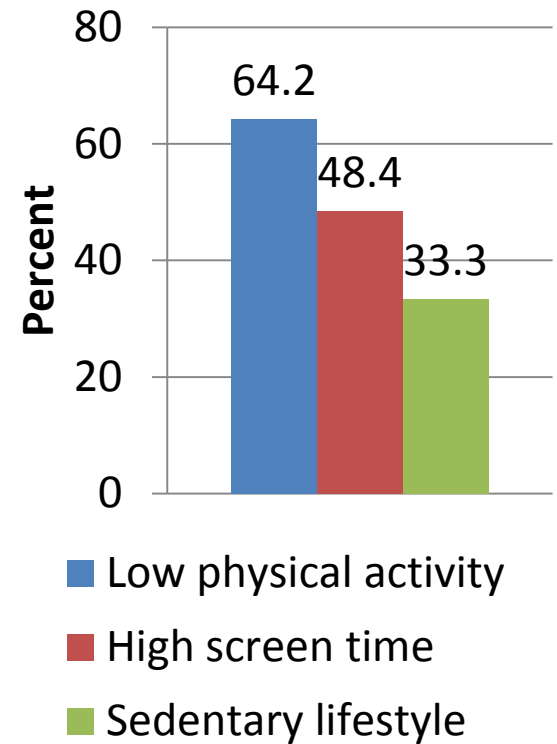
Child engages in at least 20 minutes of physical activity less than 6 days a week

**AND**

## High Screen Time

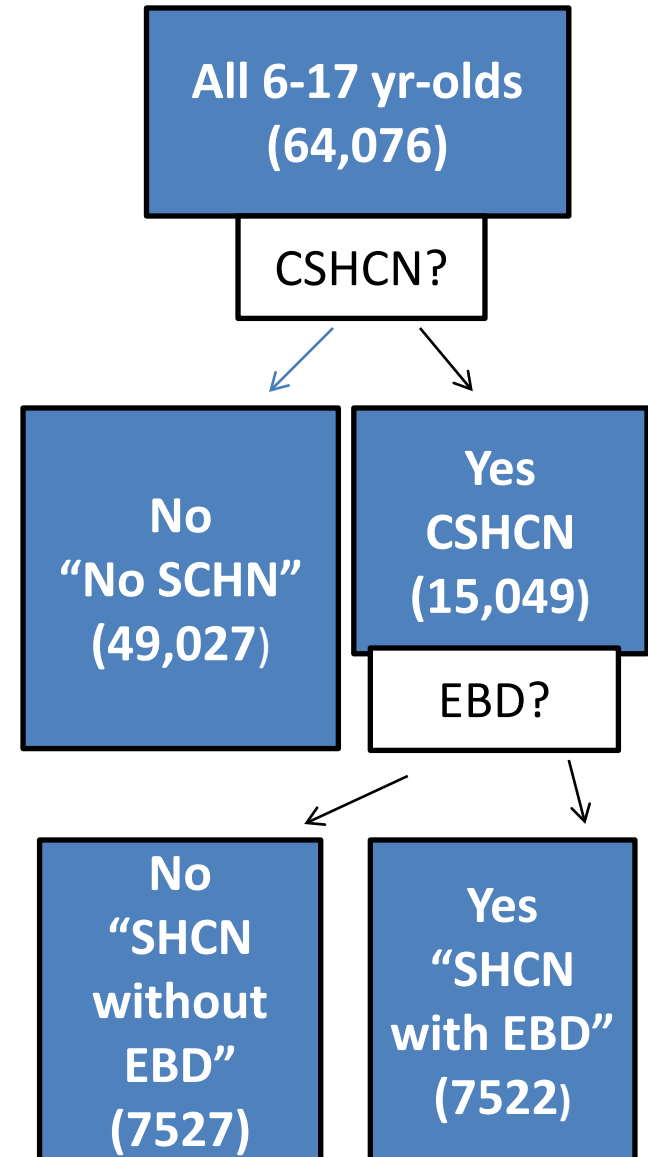
Total screen time (TV, videos, video games and recreational computer use) > 120 minutes on typical weekday

## Population Prevalence



# Special Health Care Needs Categories

- Does child meet at least one of five criteria in **CSHCN screener**?
  - Needs prescription meds, extra services, therapy, counseling, or has functional limitations
- Does child have **emotional, behavioral or developmental (EBD) condition**?
  - Needs treatment or counseling for any EBD problem, OR
  - Currently has at least one listed EBD condition (ADHD, depression, anxiety, autism spectrum disorder, behavior or conduct disorder, developmental delay, Tourettes' syndrome)



# Measuring Parental Mental Health and Parenting Stress

“Coping Index” (Range 0 to 5; Dichotomized 0 vs 1-5)

– Parent’s self-rated mental health

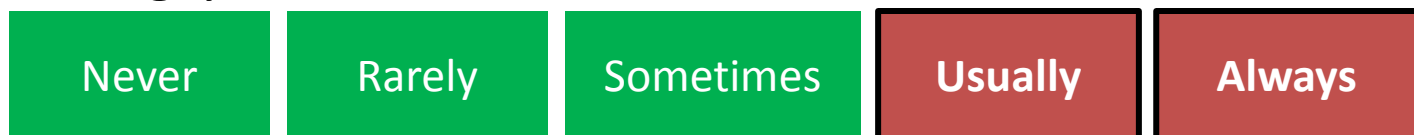


– How well are you coping with day-to-day demands of parenthood?



– During the past month, how often have you felt

- Child is much harder to care for than other children his age?
- Child does things that really bother you a lot?
- Angry with child?

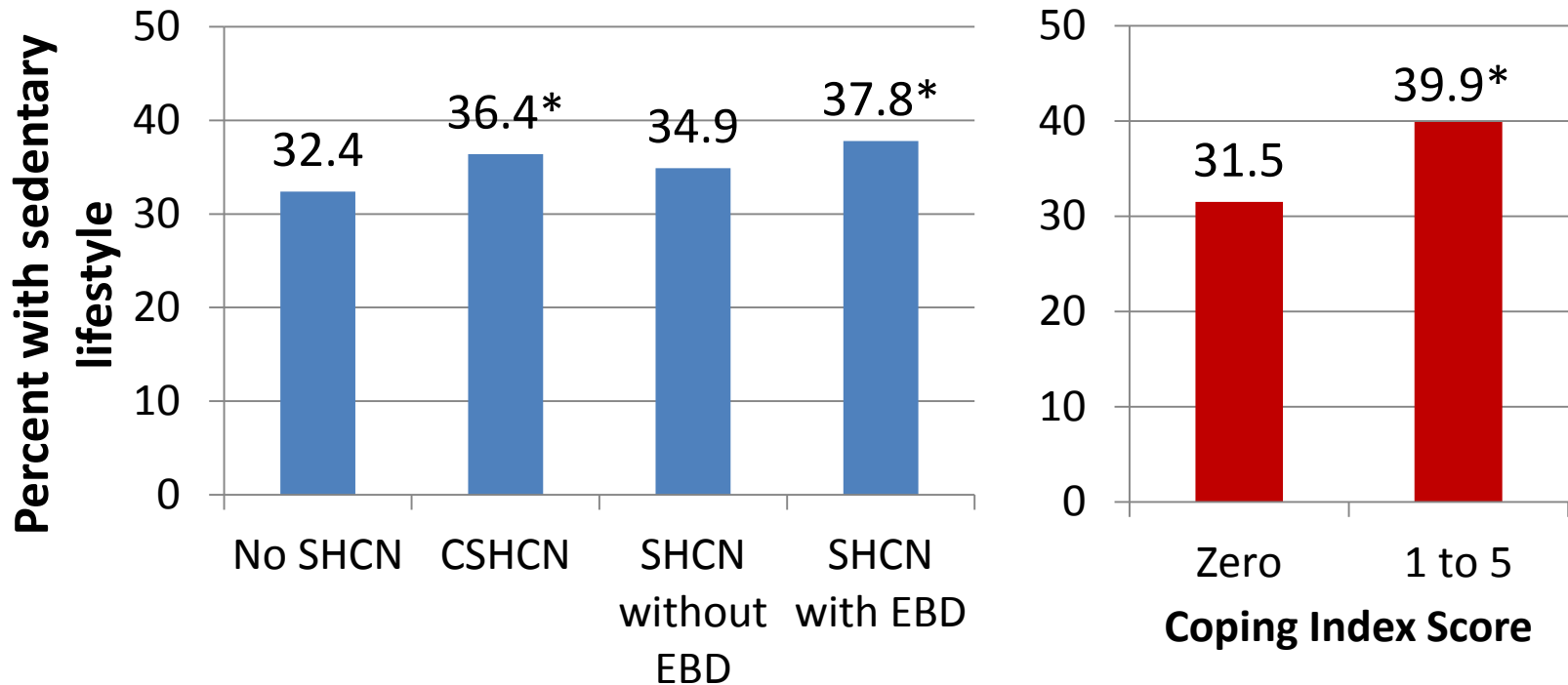


# Statistical analysis

- SAS 9.2
- Survey procedures
  - PROC SURVEYFREQ to calculate prevalences
    - Rao Scott chi square to test for significant differences
  - PROC SURVEYLOGISTIC for multiple logistic regression to determine adjusted odds ratios
    - Wald chi square to test for significance of effects in models
- Applied weights based on probability of selection and probability of non-response
- Domain analysis to look at subpopulations
- “Don’t know” and “Refused” recoded as “missing”
- Observations with missing data for relevant variables were excluded from analysis

# Variation in prevalence of sedentary lifestyle with special health care needs and parental coping problems

US 6-17 year olds. Data from 2007 National Survey of Children's Health

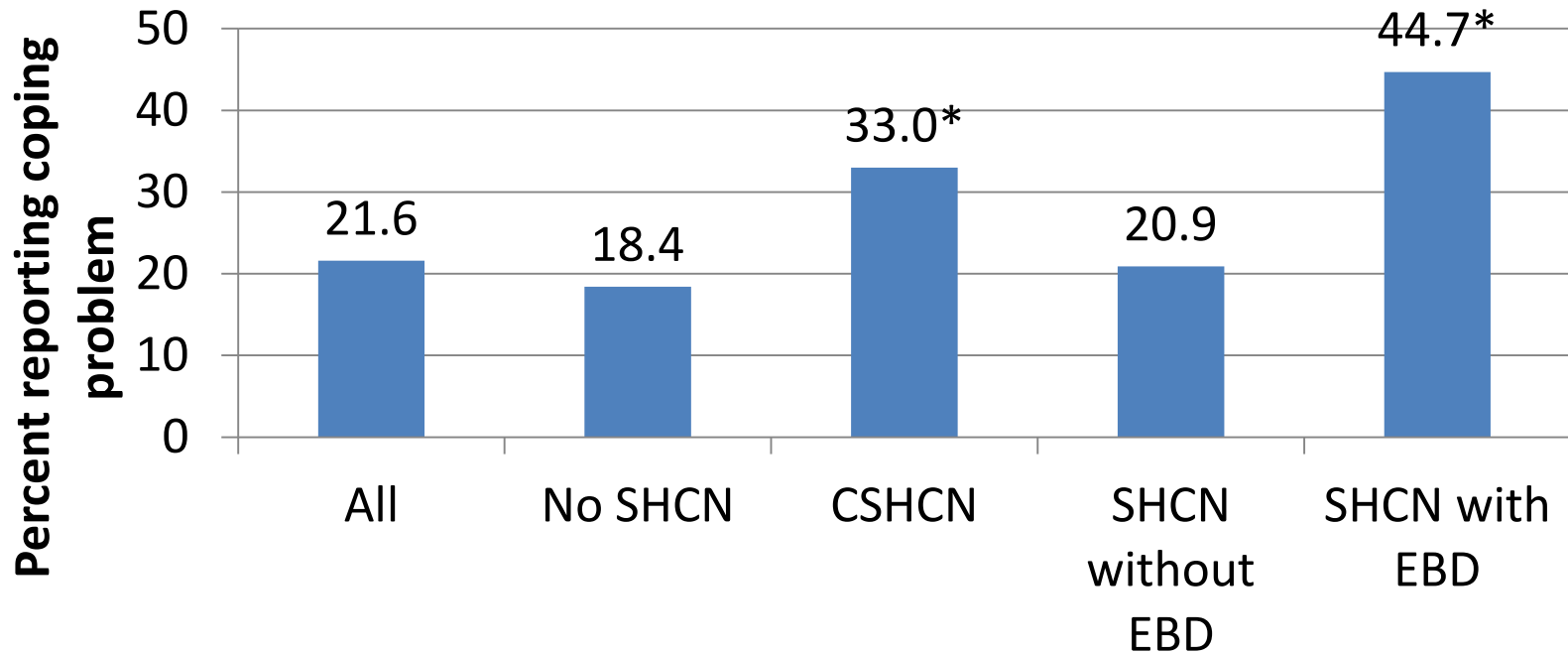


Bar graphs showing percent with sedentary lifestyle by SHCN status and by coping index score. Percent with sedentary lifestyle is significantly greater among CSHCN (36.4%) and CSHCN with EBD (37.8%) than among children with no SHCN (32.4%). Percent with sedentary lifestyle is significantly greater among children whose parents report at least one coping problem (39.9%) than among those reporting none (31.5%)



# Variation in proportion of parents reporting coping problems with child's SHCN status

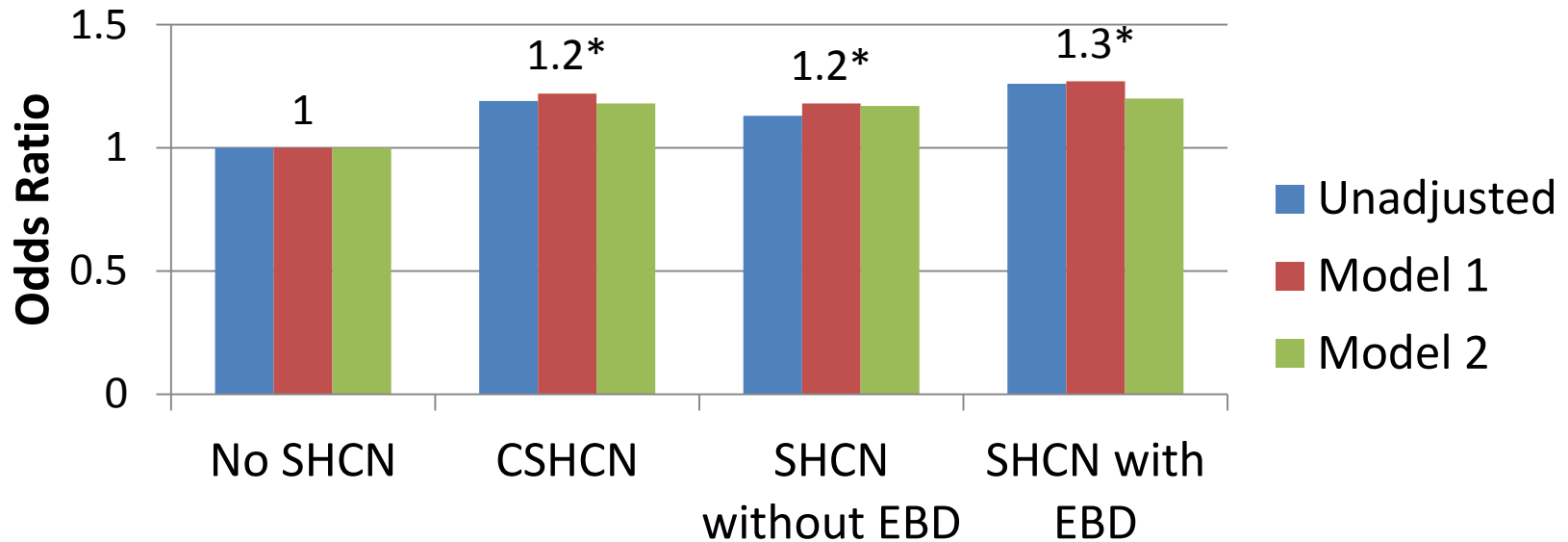
US 6-17 year-olds. Data from 2007 National Survey of Children's Health



Bar graph showing percent children whose of parents report one or more coping problem by SHCN status. Percent of children with parents reporting coping problem is significantly greater among CSHCN (33%) than children with no SHCN (18.4%). Percent of children with parents reporting coping problem is significantly greater among CSHCN with EBD (44.7%) than among CSHCN without EBD (20.9%) or children with no SHCN.

# Change in odds of sedentary lifestyle with special health care needs status

US 6-17 year-olds. Data from 2007 National Survey of Children's Health



Bar graph showing increased odds of sedentary lifestyle for CSHCN vs. No SHCN. (AOR=1.2)

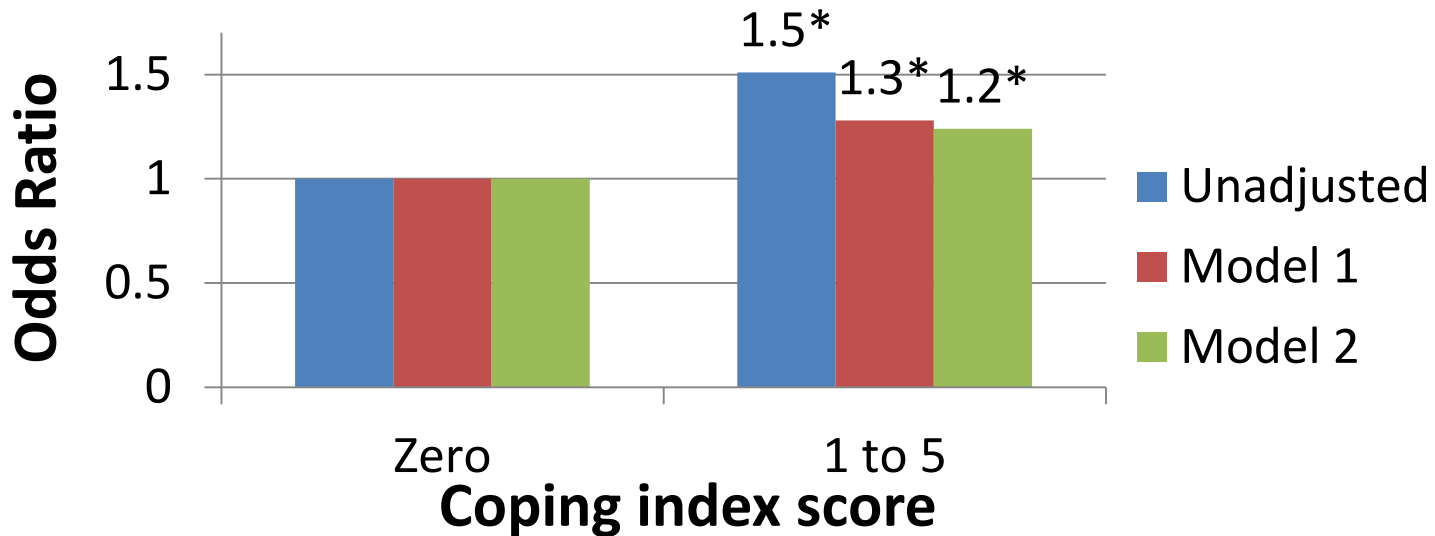
**Model 1** adjusts for age, gender, race-ethnicity, respondent education

**Model 2** adjusts for age, gender, race-ethnicity, respondent education, coping index

\*p<.05

# Change in odds of sedentary lifestyle when parent reports one or more coping problem

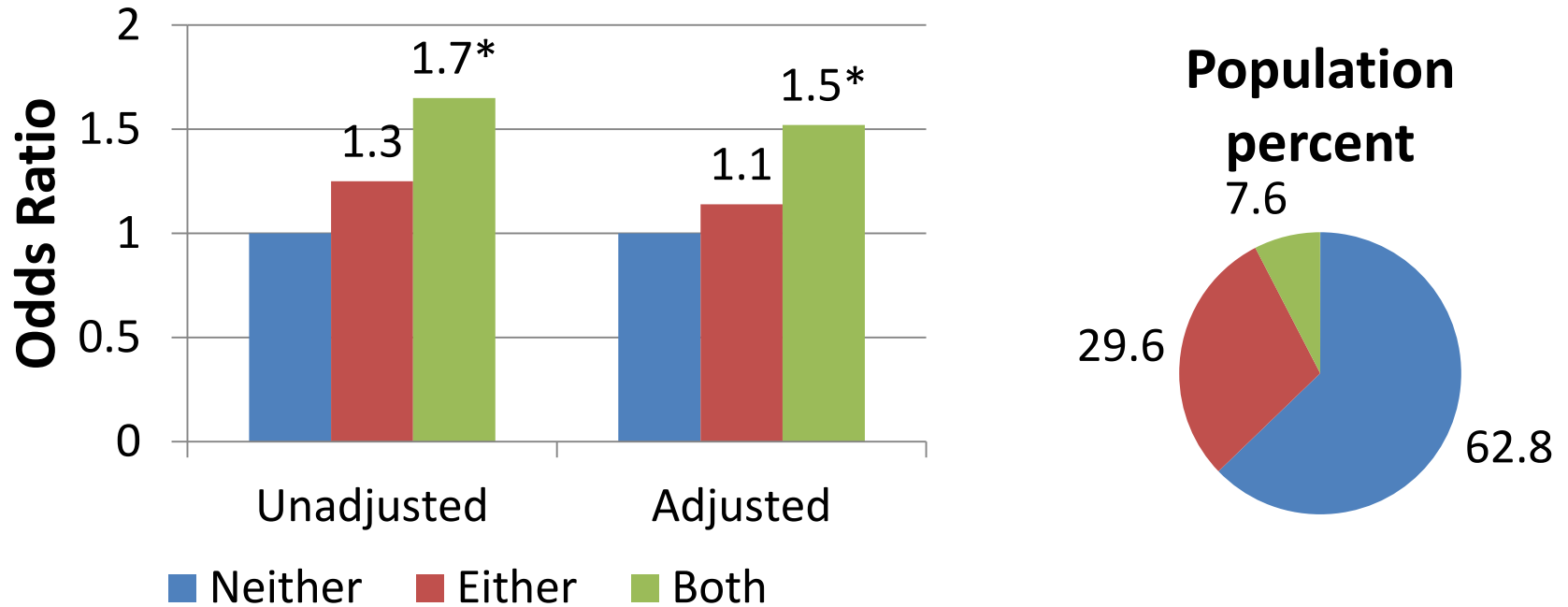
US 6-17 year-olds. Data from 2007 National Survey of Children's Health



Bar graph showing increased odds of sedentary lifestyle with coping index  $\geq 1$  vs 0. **Model 1** adjusts for age, gender, race-ethnicity, respondent education. **Model 2** adjusts for age, gender, race-ethnicity, respondent education, SCHN status.

\* $p < .05$

# Joint effects of special health care needs and parental coping problem on odds of sedentary lifestyle



Bar graph showing significantly increased odds of sedentary lifestyle among CSHCN with parents reporting at least one coping problem compared with children with neither SHCN nor parent reporting coping problem. Relationship persists after adjusting for age, gender, race/ethnicity and respondent's education (AOR 1.5).

# What's New?

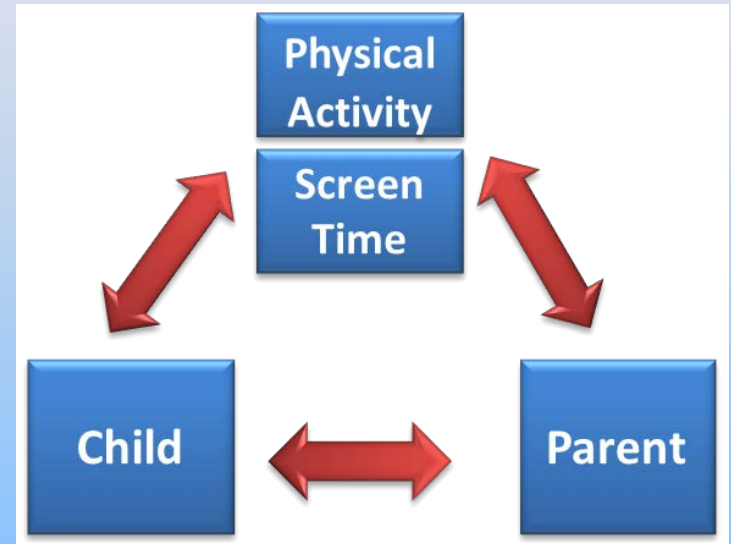
- Sedentary lifestyle includes both PA and screen time; screen time includes computer use
- New look at coping problems as factor that might impact parents' ability to support school-aged children's active lifestyles
- Use of CSHCN designation to look at subpopulation at increased risk of comorbidities related to sedentary lifestyle
- New focus on CSHCN with and without EBD

# Limitations

- Cross-sectional; no causal inference
- Parental reports
- Overall response rate 46.7%
- Parents with coping problems may be less likely to participate in the survey
- PA question not well aligned with guidelines
- Screen time measure makes no adjustments for multi-tasking or double-counting
- Coping index not validated

# Conclusions

- A third of US 6-17-year olds have both low physical activity and high screen time.
- Odds of sedentary lifestyle increases slightly with presence of special health care needs.
- Odds of sedentary lifestyle increases slightly when parents report one or more coping problem.
- Odds of sedentary lifestyle increases further with presence of both SHCN and parental coping problem
- Surveillance data can illuminate determinants of modifiable factors that impact health; good measures of sedentary behavior are important.



# Acknowledgments

- People from NSCH and SLAITS who designed the 2007 National Survey of Children's Health, collected the data and created the publicly available dataset and its documentation
- Thesis committee at University of Maryland College Park
  - Olivia Carter-Pokras, PhD, Chair
  - Tong Tong Wu, PhD
  - Brit Saksvig, PhD
- Consultants at ICWHSB of OAE at NCHS
  - Kenneth Schoendorf, MD, MPH
  - Alan Simon, MD