

# Neighborhood Disorder and Screen Time among 10- to 16- Year Old Canadian Youth

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# Background



- **A major source of sedentary behaviour in young people is screen time**
- **Linked to several negative health outcomes among young people**
- **The factors that influence the behaviour need to be understood**

# Background



- **Little is known about environmental influences on screen time**
- **High neighbourhood disorder may encourage young people to stay indoors**

## **Purpose**



**To comprehensively examine the relationships between neighborhood disorder with television, computer, and video game use among a large population-based sample of Canadian youth**

## Methods: Participants



- **Canadian records of the 2009/2010 HBSC survey**
  - **Student Questionnaire**
  - **Administrator Questionnaire**
  - **Geographic Information Systems (GIS)**
- **15,917 youth in grades 6-10 from 291 schools**

## Methods: Screen time (Outcome)



- Self-reported television, computer, video games
- Weekdays and weekends
- Weighted means were used to calculate total hours per week
- Each screen time measure was split into quartiles

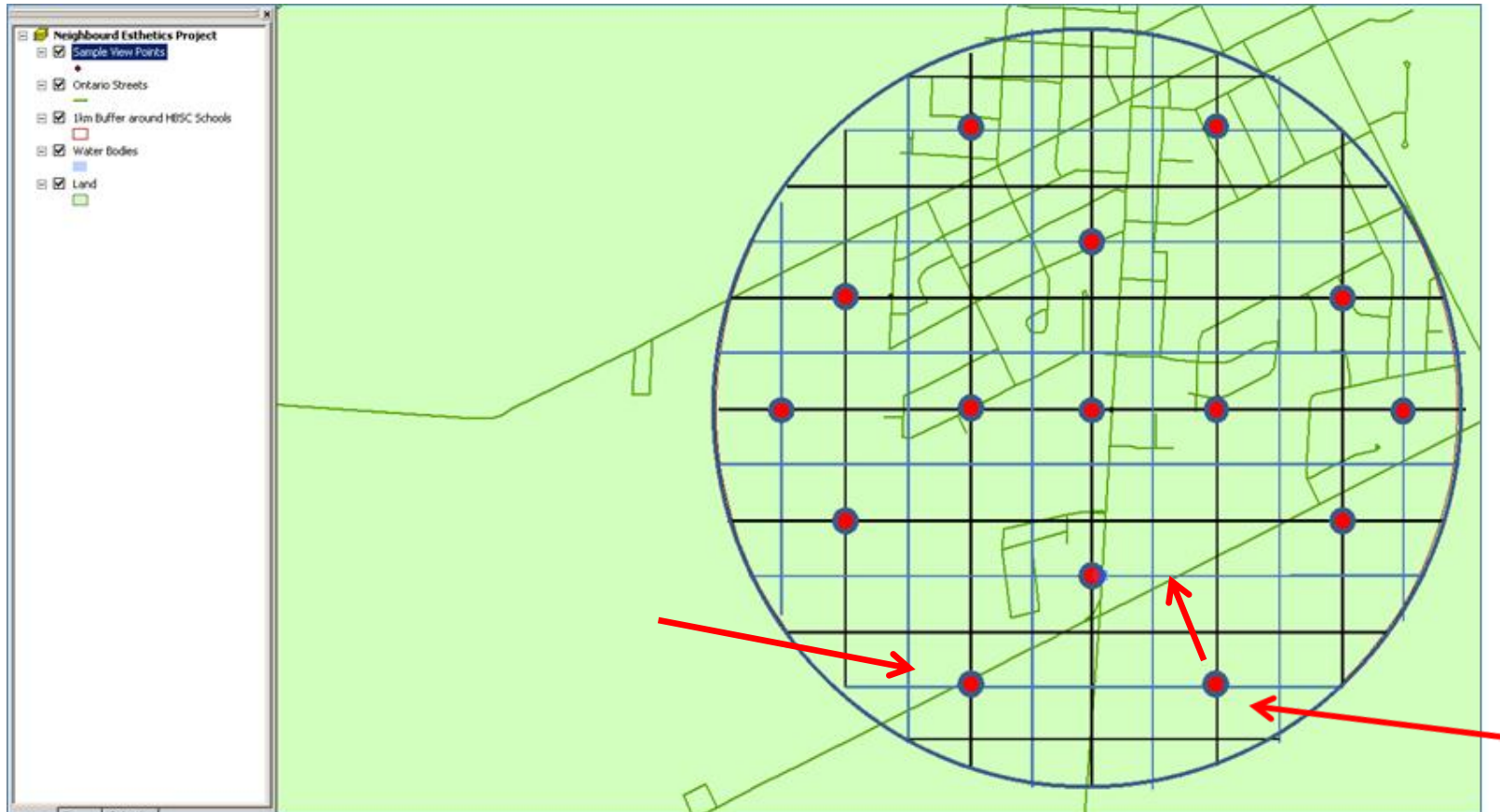
## Social

- 1) Neighbours take advantage
- 2) Safety
- 3) Drugs/drinking in public
- 4) Racial/religious tensions
- 5) Gangs
- 6) Crime

## Physical

- 1) Conditions of buildings/grounds
- 2) Vacant buildings
- 3) Litter
- 4) Graffiti

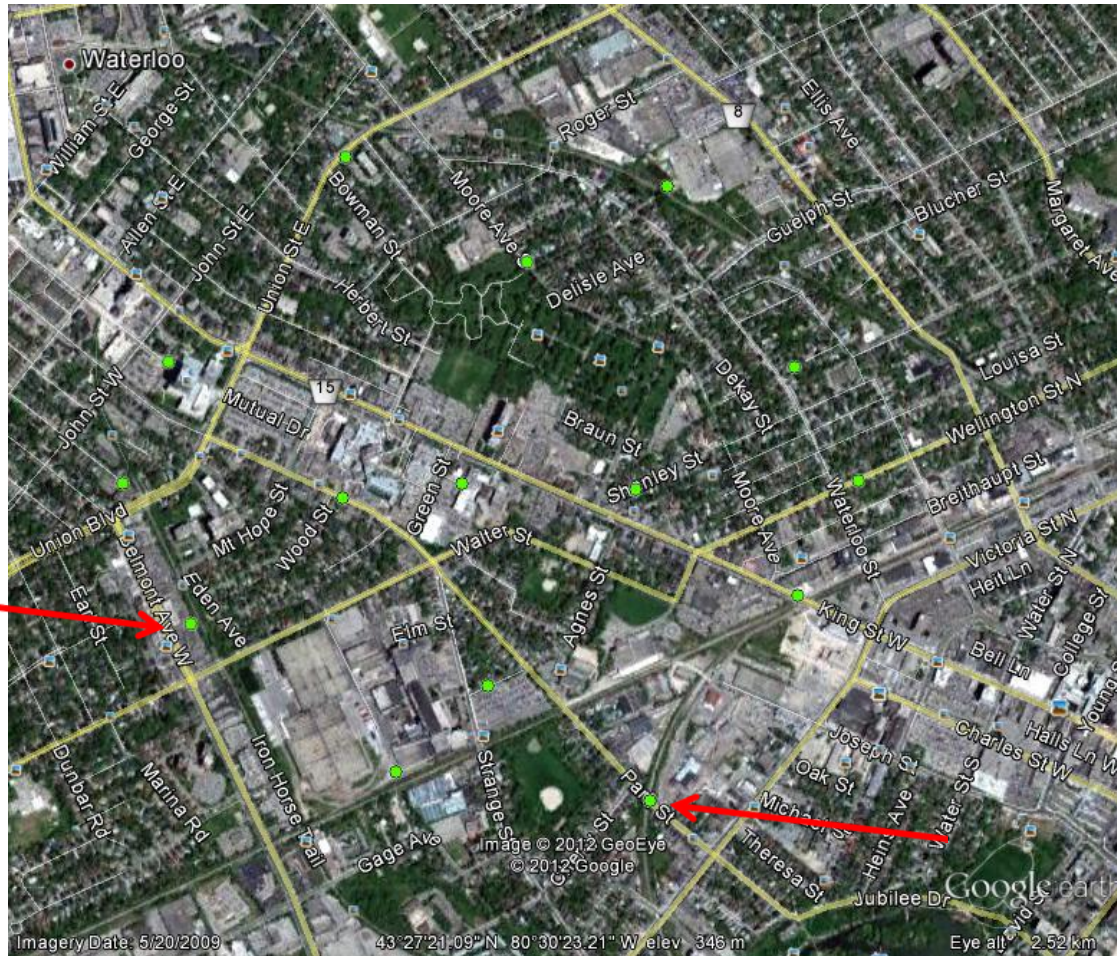
# Methods: GIS







# Methods: GIS





## Graffiti

- 1 – None
- 2 – Little (1-2 tags)
- 3 – Moderate (3-5 tags)
- 4 – Considerable (> 5 tags)



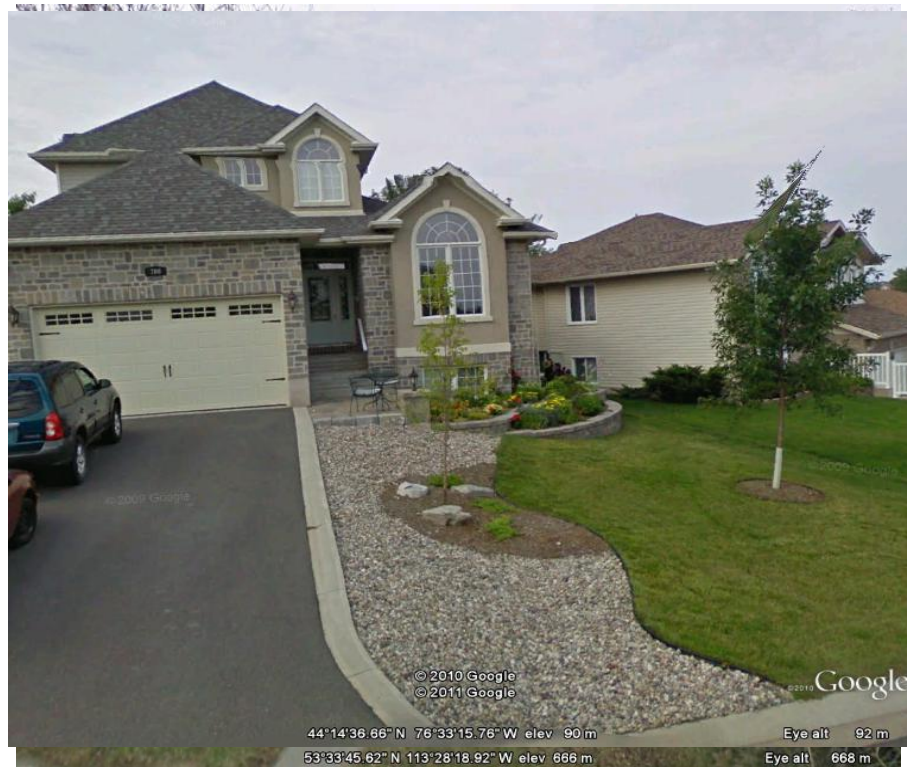
## Litter

- 1 – None
- 2 – Very little (1-2 pieces)
- 3 – Little (3-10 pieces)
- 4 – Moderate (11-20 pieces)
- 5 – Considerable (> 20 pieces)



## Vacant Buildings

- 1 – None
- 2 – Less than 1/3
- 3 – 1/3 to 1/2
- 4 – More than 1/2



## Condition of Buildings/Grounds

- 1 – Excellent
- 2 – Good
- 3 – Fair
- 4 – Poor

- **Reliability**
  - 150 observations points around 10 randomly selected schools
    - 1) Intra-rater (2 weeks apart):
      - $r = 0.78$  to  $0.94$
    - 2) Inter-rater
      - $r = 0.75$  to  $0.90$
  - **Validity**
    - 521 observations points around Kingston, ON
      - 1) Criterion-related
        - $r = 0.65$  to  $0.91$

## Data Analysis



- Calculated an average score for the 15 points per variable per school.
- Created summary scores for physical and social neighbourhood disorder using PCA
- Multi-level logistic regression models predicting the highest quartile of the screen time variables

# Data Analysis: Covariates



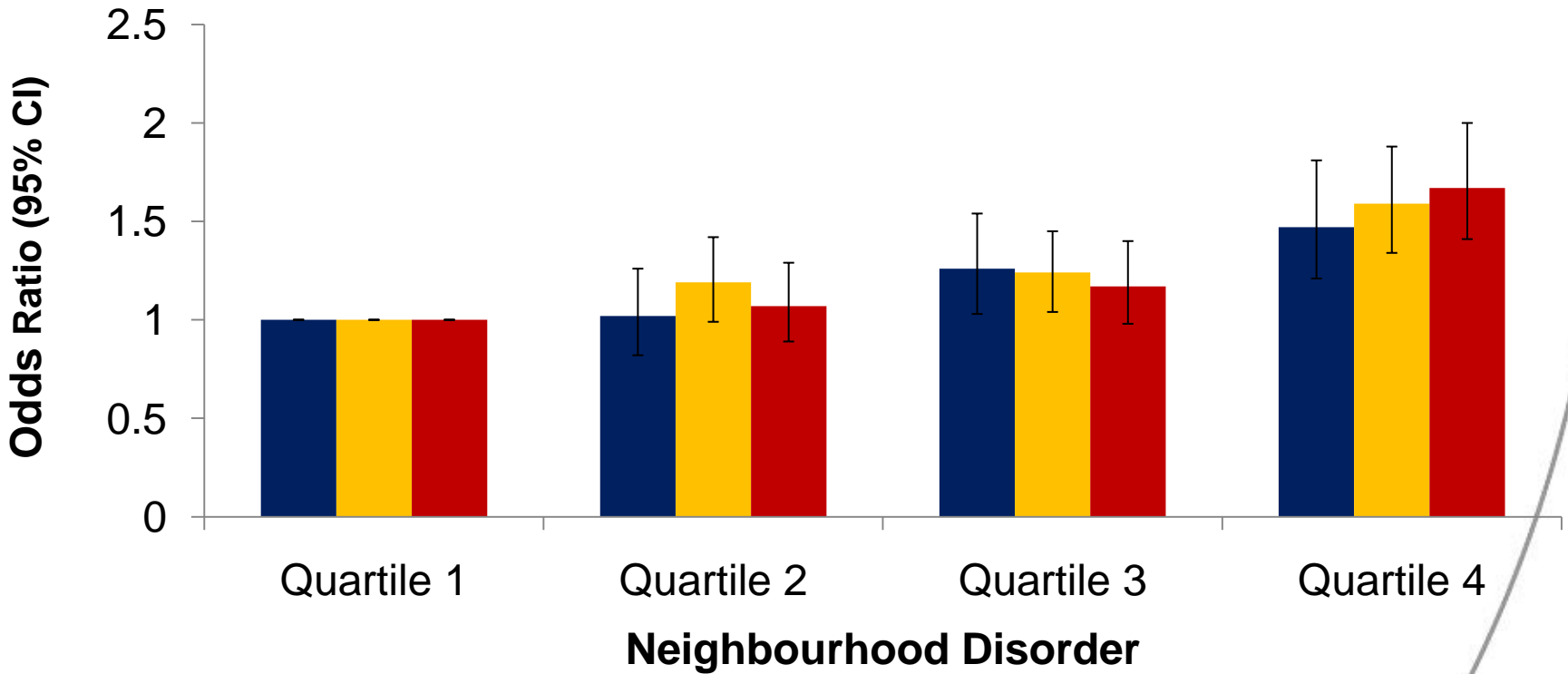
- **Various confounders were considered in the regression models:**
  - **Gender**
  - **Age**
  - **Ethnicity**
  - **Family structure**
  - **Individual-level SES**
  - **Area-level SES**
  - **Urban-rural location**



# Results: Social Neighbourhood Disorder



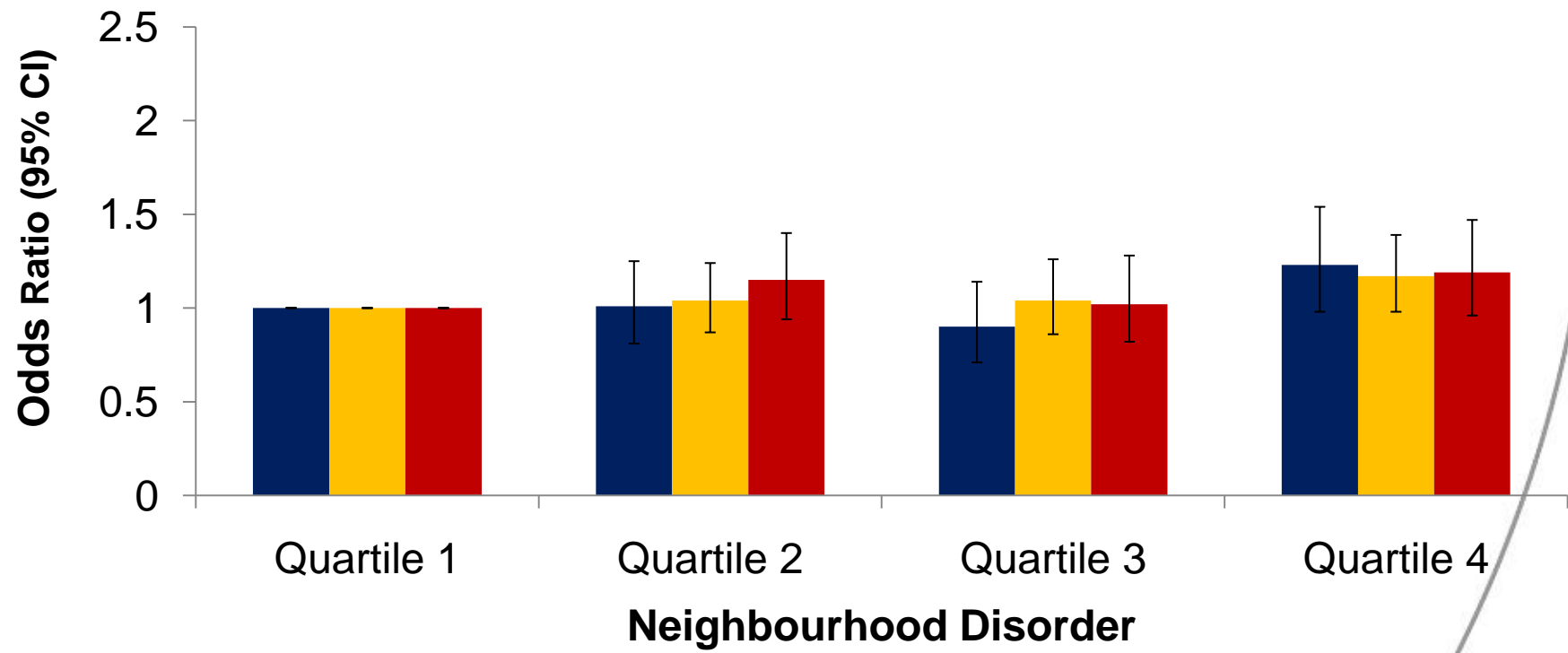
■ Television   ■ Video Games   ■ Computer



# Results: Physical Neighbourhood Disorder



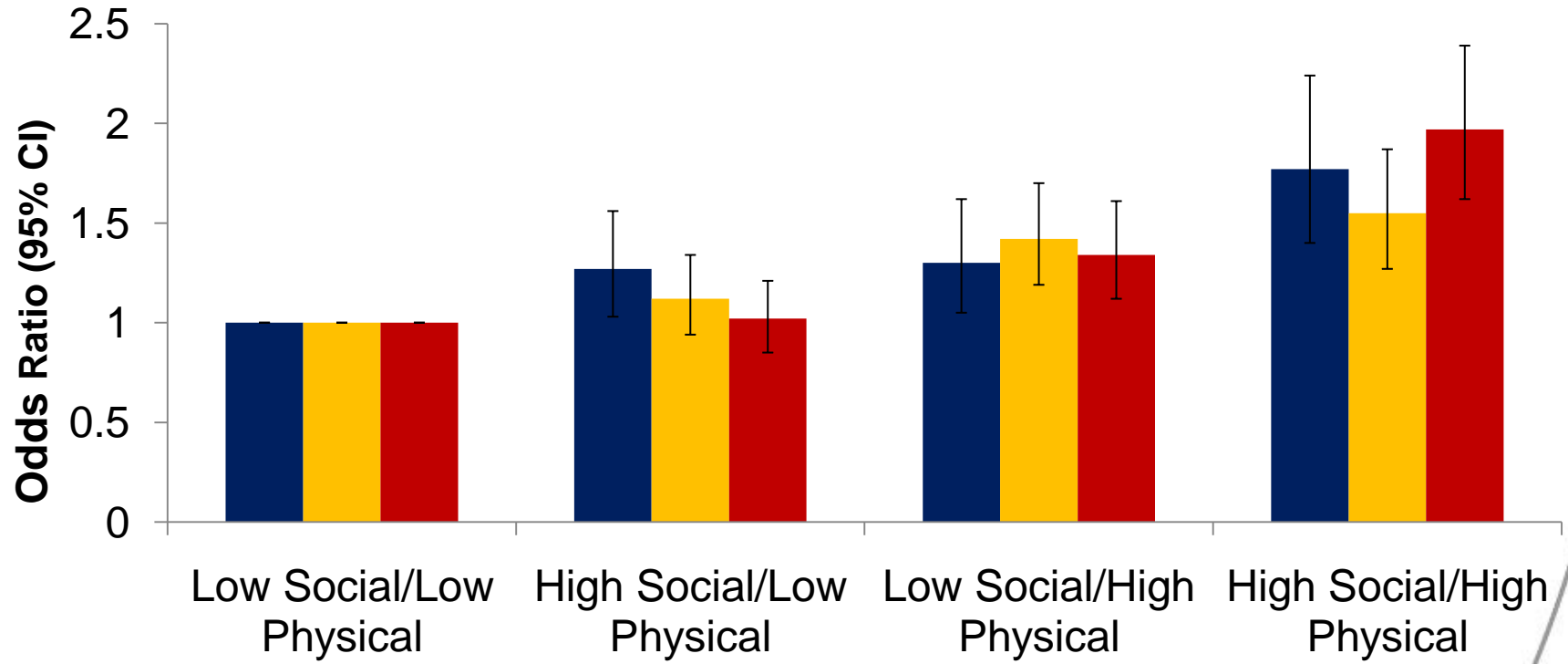
■ Television ■ Video Games ■ Computer



# Results: Social and Physical Disorder



■ Television ■ Video Games ■ Computer



# Summary



**Participants living in neighborhoods with high disorder were more likely to be high screen time users**

# Strengths & Limitations



- **Strengths**
  - Multi-level analysis
  - Comprehensive measure of neighborhood disorder
- **Limitations**
  - Cross-sectional design
  - Self-report measures of screen time

## Potential Implications



- **Intervening upon high neighborhood disorder may be one relevant area-level factor to consider for future interventions**
- Require coordinated efforts from community members, law enforcement, and various other government departments
- Specifically target young people living in neighborhoods with high disorder

# Acknowledgements



**Canadian Institute of Health Research (CIHR)**



CIHR IRSC

**Thank You!**

**Questions?**





Queen's  
UNIVERSITY

# Results: Screen Time



## Average Screen Time (hrs/day)

■ Television ■ Computer ■ Video Games

