

Area-level social fragmentation is associated  
with less walking for exercise:  
Cross-sectional findings from the Quebec  
Adipose and Lifestyle Investigation in Youth  
(QUALITY) Study



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# Rationale

- Features of the social and physical environment influence physical activity
- Built-environment and physical activity
- Social Fragmentation (SF)
  - Emile Durkheim
  - Instability
  - Found associations between SF and suicide and mental health (Curtis, Fagg et al.)
  - Physical activity (Pabayo et al, 2011)

# Research Question & Hypothesis

- What is the relationship between SF and walking for exercise?
- Among mothers and fathers of children
- Hypothesis:
  - SF is associated with a decreased likelihood of walking for exercise



# Data Source



- Quebec Adipose and Lifestyle Investigation in Youth (QUALITY) Study
- Prospective cohort of 630 Caucasian families with children at risk for obesity
- Eligibility:
  - Child was aged 8-10 years
  - Both biological parents were available for the study
  - At least one parent was obese
- Families were recruited through schools in the Greater Montreal or Quebec City metropolitan areas between 2005 and 2008.

# Data Collection

- Determinants of obesity and cardiometabolic risk factors:
  - Biological
  - Genetic
  - Behavioral
  - Psychological
  - Environmental



- Each participant was matched by postal code to Canada Census variables for their Census tract of residence

# Area Social Fragmentation

- Congdon, 1996 UK
- A summary score was calculated using three Canada census variables
- Three items; proportion of residents:
  - Single-parent families
  - Residents moving out of the census
  - Homeowners within the neighborhood (reverse coded)
- Higher the score, the higher the social fragmentation

# Outcome: Walking for exercise

- “In the past 2 weeks how many times have you walked (whether for recreation or exercise or to get to or from places) for at least 10 min continuously?”
- Walking for exercise was dichotomized into any or none.



# Covariates

- Household income
- Body Mass Index
- Age
- Social Cohesion
- Perceived Safety
- Crime in the Neighborhood
- Facilities in the Neighborhood for physical activity
- Few Sidewalks
- Area level Economic deprivation
- Population density





# Analysis

- Log-binomial multiple regression models
- Controlled for covariates
- Stratified analysis for mothers and fathers
- Mothers and fathers not living with their child were excluded

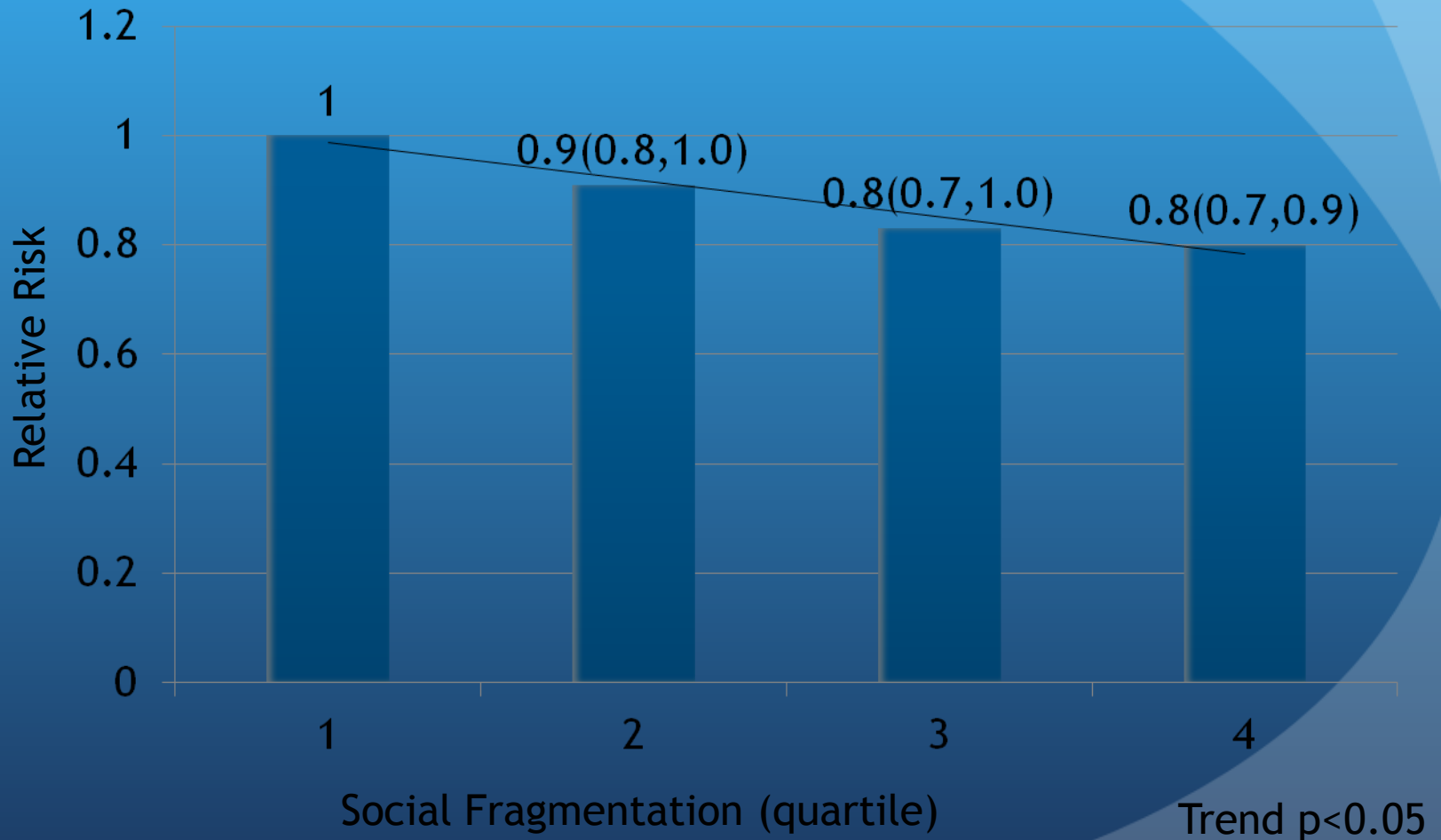
# Results



# Participant Characteristics

Characteristic	Mothers (n=588) %	Fathers (n=538) %
High social cohesion	25.2	23.6
Crime in the neighborhood	10.4	9.5
High traffic in the neighborhood	26.9	26.8
Few Facilities in the neighborhood	17.4	17.1
Few sidewalks	56.3	56.9
	Mean (SD)	Mean (SD)
Age (years)	40.1(4.9)	42.4(5.7)
Body Mass Index (kg/m <sup>2</sup> )	29.4(6.5)	30.7(5.4)
Household Income (CAD)	42867 (18389)	44731 (17762)

# Relative Risk for the association between social fragmentation and likelihood of walking for exercise among mothers participating in the QUALITY study



# Results

- Compared to mothers in the first quartile of SF, those in the second, third, and fourth quartile of SF were less likely to walk for exercise
- Decreasing trend was significant ( $P < 0.05$ )
- SF was not significantly associated with walking among fathers

# Discussion

- Higher levels of SF was associated with decreased likelihood of walking for exercise only among mothers
- Consistent with other studies that indicate neighborhood level variables may affect physical activity differently between men and women
- Walking can be easily incorporated into daily routines
- Programs that increase the stability of residential areas are needed
- May be especially important among at-risk populations

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*Fonds de la recherche  
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