Active Commuting to School: Sociodemographic, Family and Environmental Correlates

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Background

- Insufficient physical activity contributes to obesity, type 2 diabetes, heart disease and hypertension
- Walking or biking to school (active commuting) can be an important part of youth physical activity
- Prevalence of active commuting in the US has declined significantly over time
- Increasing active commuting has the potential to increase children's physical activity

Objective

- Examine the association of individual sociodemographic, family and environmental characteristics with active commuting to school among adolescents

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
- Interviews are conducted in five languages: English, Spanish, Chinese, Korean and Vietnamese
- Beginning in 2003, CHIS collects respondent addresses
- Beginning in 2005, CHIS collects name of school attended for school-age children

Outcome Variable

- **Any active commuting to or from school**
  - "How many days in the past week did you walk, bicycle or skateboard to school?"
  - "How many days in the past week did you walk, bicycle or skateboard home from school?"
  - Any active commuting = one or more days in response to *either* question

Potential Correlates of Active Commuting

- Individual Socio-demographic characteristics
  - age, gender, race/ethnicity, household income and type of school
- Family factors
  - parental walking for transport, adult presence after school, parental knowledge of whereabouts after school
- Environmental factors
  - parental perceptions of neighborhood safety, urbanicity, distance between home and school

Analyses

- **Sample**
  - 3,989 adolescents ages 12-17 who attend school
- **Descriptive analysis**
  - Percent engaging in any active commuting
- **Logistic regression**
  - Model predicting any active commuting vs. none
  - Including individual sociodemographic, family and environmental factors as potential correlates

Study Population

- 49% female
- 28% Latino, 11% Asian, 9% African American, 2% American Indian, 41% white, 10% other
- 42% have household incomes below the 200% of the Federal Poverty Level
- 13% live in rural areas
- 10% live within 800 meters of school (approx 1/2 mile)

Descriptive Results

- 49% reported any walking, biking or skateboarding to school

- In unadjusted analyses
  - Active commuting varied by individual, family and environmental factors
  - Largest variation in prevalence of active commuting was seen by distance between home and school, school type, household income, and race/ethnicity

Percent of Adolescents Active Commuting by Distance, School Type, Income

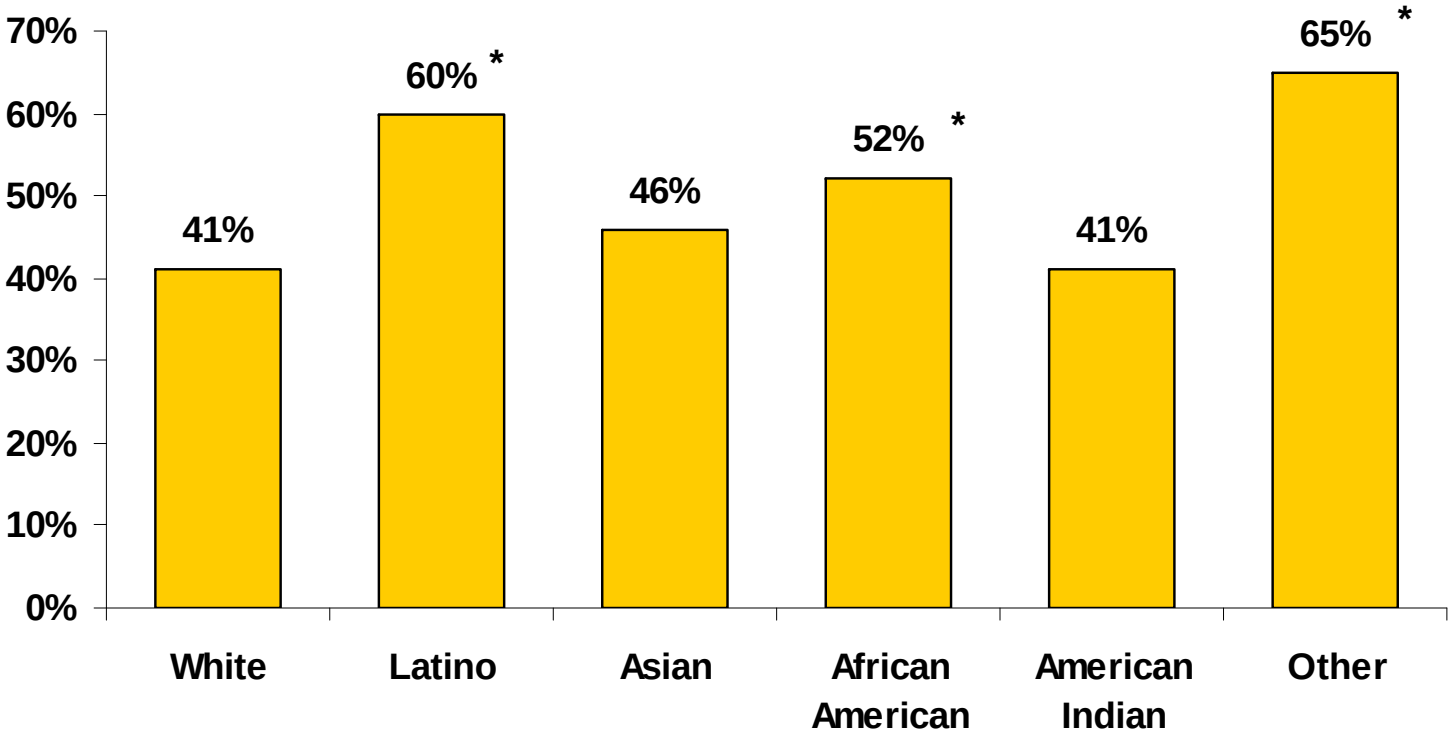
Adolescents Ages 12-17, California, 2005

Factor	Active Commuting
Distance to School	
< 800 m	86%
800 to 1599 m	73%
1600 to 3199 m	50%
3200 m and above	33%
School Type	
Public	53%
Private	26%
Household Income	
Below 200% FPL	62%
200% FPL and above	42%

Source: 2005 California Health Interview Survey

Percent of Adolescents Active Commuting by Race/ethnicity

Active Commuting by Race/ethnicity, Adolescents Ages 12-17



* p<0.05 compared to white

Source: 2005 California Health Interview Survey

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Correlates of Active Commuting

Adolescents Ages 12-17, California, 2005

Factor	Adjusted OR (95% CI)
Race/ethnicity (White)	
Latino	**1.42 (1.06 - 1.90)***
Asian	0.81 (0.56 - 1.16)
African American	1.29 (0.78 - 2.12)
American Indian	0.95 (0.34 - 2.60)
Other	**1.57 (1.06 - 2.32)***
Household Income (200% FPL and above)	
Below 200% FPL	**1.88 (1.44 - 2.44)*****
School Type (Private)	
Public	**1.96 (1.27 - 3.03)****

Model adjusted for age, gender, parent perception of neighborhood safety and parent walking for transporation

* p<0.10; ** p<0.05; *** p<0.01

Source: 2005 California Health Interview Survey

Correlates of Active Commuting (cont'd)

Adolescents Ages 12-17, California, 2005

Factor	Adjusted OR (95% CI)
Urbanicity (Rural)	
Urban	**1.58 (1.17 - 2.13)****
Adult present after school (Most of time)	
Some or none of the time	**1.77 (1.33 - 2.35)*****
Parental knowledge of whereabouts after school (Knows a lot)	
Knows little or nothing	**1.73 (1.24 - 2.41)****
Distance to School (3200 m +)	
< 800 m	**12.42 (7.21 - 21.42)*****
800 to 1599 m	**5.02 (3.71 - 6.81)*****
1600 to 3199 m	**1.84 (1.43 - 2.37)*****

Model adjusted for age, gender, parent perception of neighborhood safety and parent walking for transporation

* p<0.10; ** p<0.05; *** p<0.01

Source: 2005 California Health Interview Survey

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Summary

- Distance between home and school was most strongly associated with active commuting

- Income, race/ethnicity, school type, parental supervision after school, and urbanicity are also independently associated with active commuting

Limitations

- Cross-sectional analysis does not allow for causal conclusions
- Could not examine correlates of different modes of travel to school separately
- No information about pedestrian or bike safety indicators

Conclusions

- After adjusting for distance, a number of individual, family and environmental characteristics remain associated with active commuting

- It is important to understand the individual, family and environmental characteristics associated with walking or biking to school to inform efforts to promote and increase active commuting to school

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