Association of Workplace Supports with Active Commuting

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• Physical activity (PA) is associated with a reduced risk of numerous chronic diseases

• Recommendation: 30 minutes of moderate-intensity activity on most days of the week

• Moderate-intensity PA sufficient to achieve health benefits and maintain weight

• Minimum 10-minute bouts

• Active commuting (AC) – walking or biking to work – offers a promising means to integrate PA into daily routines
Health Benefits of Active Commuting

• Lower odds of obesity
  (Lindstrom, 2008)

• Decreased risk of all-cause mortality
  (Andersen et al., 2000)

• Protective cardiovascular effect
  (Gordon-Larsen et al., 2009; Hamer & Chida, 2008)

• Lower HDL cholesterol
  (Vuori et al., 1994)

• Improved VO₂ max
  (Vuori et al., 1994)
Prevalence of Active Commuting

• According to the 2001 National Household Transportation Survey, usual modes to work were:
  – 90.8% private automobile
  – 5.1% public transit
  – 2.8% walking
  – 1.3% other (including biking)
Previous Research on Active Commuting

• Large body of research on children’s active commuting to school

• Among adults, some factors found to influence AC include:
  – Distance (Sisson & Tudor-Locke, 2008)
  – Environmental barriers (Craig et al., 2002)
  – Perceptions of potential benefits of AC (Merom et al., 2008)

• However, few definitive correlates or intervention points exist for promoting AC among adults (Ogilvie et al., 2004)
Study Purpose

- To examine the association of cultural and physical workplace supports for active commuting with employee active commuting behavior.
Data Collection

- Study set in Manhattan, KS (pop: 50,737)
- Online survey with participants recruited through links from local websites, emails to area employers, fliers distributed to local businesses
- Eligibility included being employed and physically able to walk or bicycle
- N= 375 respondents
  - Mean age = 39.4 years
  - 60% female
  - 94% high school graduates
  - 90% White
Measures

• **AC**: Number of times walk or bike to or from work per week – dichotomized as zero trips vs. at least once per week

• **Physical workplace supports for AC** (yes/no)
  – Availability of bike parking
  – Bike storage policy
  – Availability of showers/lockers

• **Cultural workplace supports for AC**
  – Perceptions that employer encourages AC (recoded to yes/no)
  – Perceptions of number of coworkers who AC (recoded to none vs. some)
Analyses

• Binomial logistic regression predicting the likelihood of walking or biking to work at least once per week according to:
  – number of reported physical workplace supports
  – number of reported cultural workplace supports

• Separate analyses for full sample, for males vs. females, and for younger (18-39) vs. older (40+) adults

• Controlled for sex, age, race, education, and perceived walking time to work
Results

- 26% of the sample reported AC to work at least once per week – higher among males (37%) and younger adults (32%)

- 76% reported workplace possessed at least one cultural support for AC – higher among males (84%) but no difference across age groups

- 71% reported workplace possessed at least one physical support for AC – higher among males (77%) but no difference across age groups
Results

- Having both physical and cultural supports related to increased odds of AC, especially among women

<table>
<thead>
<tr>
<th>Sample</th>
<th>Number of Physical Supports</th>
<th>One or more cultural supports</th>
<th>At least one of each type of support</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Two or more</td>
<td>One</td>
<td></td>
</tr>
<tr>
<td>Full</td>
<td>3.62* (1.71-7.69)</td>
<td>0.97 (0.43-2.20)</td>
<td>2.56* (1.19-5.99)</td>
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<tr>
<td></td>
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<td></td>
<td>6.42* (1.38-19.80)</td>
</tr>
<tr>
<td>Males</td>
<td>1.88 (0.67-5.28)</td>
<td>0.29 (0.08-1.00)</td>
<td>2.17 (0.69-8.87)</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>1.12 (0.17-7.25)</td>
</tr>
<tr>
<td>Females</td>
<td>10.30* (2.74-18.73)</td>
<td>3.74* (1.08-8.87)</td>
<td>2.83* (1.23-6.21)</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>5.39* (1.58-14.25)</td>
</tr>
<tr>
<td>18-39 yrs</td>
<td>3.45* (1.23-9.71)</td>
<td>0.73 (0.23-2.34)</td>
<td>2.38 (0.77-7.34)</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>2.49 (0.71-8.13)</td>
</tr>
<tr>
<td>40+ yrs</td>
<td>3.79* (1.17-12.29)</td>
<td>0.77 (0.20-2.97)</td>
<td>2.41 (0.65-8.99)</td>
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<td>2.31</td>
</tr>
</tbody>
</table>

* significantly greater likelihood of AC at least once per week (p<.05)
Conclusions

- Both cultural and physical workplace supports associated with AC

- Effects of workplace interventions for promoting physical activity have been mixed (Proper et al., 2003; Dishman et al., 1998)

- Most previous studies have employed largely *individual-level* approaches focused on *leisure-time* physical activity

- A supportive cultural and physical workplace environment may facilitate greater *utilitarian* physical activity in the form of walking and biking to work
Conclusions

• Workplace supports for AC especially important among women
  – other research shows women have stronger preferences for community cycling infrastructure (e.g., off-road routes; Garrard et al., 2008)

• Need additional qualitative and experimental research to explore why AC supports differentially benefit women
  – safety, appearance, social support, etc.?
Conclusions

• Social support from coworkers actively commuting may be reinforcing (Wen et al., 2005)

• Need to foster AC within organizations via:
  – team challenges and other worksite events
  – physical changes including showers, bike racks, covered and secure bike parking
  – workplace policies – e.g., relaxed dress code
  – financial incentives – e.g., health insurance premium reductions, parking refunds, tax breaks

• Need to better monitor AC rates and document the costs of AC investments in comparison to the savings enjoyed by both employees and employers
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Preventing Chronic Disease, in press