Active Commuting at a Large University Campus

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Abstract

BACKGROUND: Physical activity (PA) is known to contribute to health benefits, including enhanced cardiovascular fitness, reduced chronic disease, and weight maintenance. Recent research has shown several short bouts of moderate intensity exercise to be beneficial on health and physical activity levels. This study was designed to determine factors that could impact commuting behavior.

METHODS: An online survey of AC patterns was conducted at a large Midwestern university campus. Students, faculty and staff were questioned about frequency of walking, biking, and driving to campus. Respondents were asked about commute method, their commute from home to campus, and commuting patterns. Students were further asked about their commute from home to campus. Safety from crime and traffic were positively associated with AC.

RESULTS: 798 respondents participated. 54% were female and 44% were students. Self reported distance from home to campus was the most powerful determinant of active commuting. Individuals living within a self-reported distance of 1 mile or less walked to campus twice as often as individuals living within a distance of 1-2 miles, and three times as often within a distance of 2-3 miles. Safety from crime and traffic were positively associated with AC. CONCLUSION: With current economic and environmental concerns, AC should be considered a viable and sustainable behavior that can be targeted with future public health and health promotion initiatives.

Background

- According to 2007 BRFSS nationwide data, only 50% of adults engage in 30 or more minutes of moderate intensity physical activity 5 or more days per week. Therefore, only 28% of adults do 1:20 or more minutes of vigorous physical activity 3 or more days per week (CDC, 2007).
- Regular bouts of moderate intensity exercise have been shown to reduce the risk of developing chronic lifestyle diseases, such as coronary heart disease, hypertension, and diabetes (USDHHS, 1996).
- PA research shows that health benefits can be accrued from several 10 minute bouts of moderate physical activity throughout the day (Pate, 1995). DeBusk also found that multiple short bouts of moderate-intensity exercise increased aerobic benefits. The opportunity to incorporate short bouts of exercise for health benefits may help individuals meet PA recommendations (DeBusk, 1990).
- Physical activity declines during adolescence (USDHHS, 1996), therefore college students are at risk for not meeting PA recommendations and developing sedentary lifestyle habits.

Methods

- An online survey composed of 29 questions was created to understand active commuting levels of Kansas State University students, faculty and staff. To obtain current data on the method of travel to and from campus.
- The survey was voluntary and approved by the KSU Institutional Review Board.
- The survey was offered from April 2nd to May 10th, 2008.
- Basic frequencies and means were used for descriptive statistics. T-tests and Chi-square analyses were used to compare differences between groups.

Recruitment

- The survey was sent to various email listservs to reach faculty, staff and students across the university.
- To obtain satisfactory response rates, completion of the survey was offered as an extra credit opportunity in two Kinesiology courses in April 2008.

Measures

- Demographic questions asked information about the respondent's age, sex, role at K-State, and college within the university.
- The survey asked about participant's moderate and vigorous PA.
- The survey asked how many times per week an individual walks, bikes, and drives to campus.
- Length of travel time from home to a frequented building on campus was asked for walking and driving.
- If five point Likert scale was used to determine factors that could impact an individual's choice on transportation to campus.
- Respondents were asked to include their street address for distance mapping purposes.
- Additional questions related to parking included comparing the current parking situation to years in the past, and where the respondent parks when driving to campus.

Results

The survey was completed by 798 faculty, staff and students from KSU. Respondent demographics:
- 45% male, 55% female
- 46% were students, 32% faculty, 22% staff

Commuting Patterns:
- On average, respondents said they:
  - Drive to campus 3.3 hours/week
  - Walk to campus 2.7 hours/week
  - Bike to campus 2.7 hours/week
- Men and women reported equal AC behavior.
- Most individuals report commuting with similar modes of transportation as previous years, with only 18.1% reporting that they drive less frequently to campus when commuting.

Status Comparisons:
- Faculty actively commutes more often than staff. Refer to Figure 1.
- Students actively commute more often than other faculty or staff.
- No differences in reported walk time to campus by status.
- Students report less time to bike to campus than faculty and staff.

Student Commuting Patterns:
- Undergraduate (5.69 [4.7] times/week) and graduate students (6.1 [6.09] times/week) actively commute at the same rate.
- Most active commuting college was Architecture (7 times/week).
- Least active commuting colleges were Agriculture and Vet Med (2 times/week).
- 15% of students report that all trips to campus are by walking.
- 5% of students report that all trips to campus are by bicycle.

Implications

- With increasing importance of environmental and economic concerns, biking and walking should be considered viable transportation options amongst faculty, staff, and students.
- Results suggest that distance from home to travel destination is an important predictor of active commuting. Education is needed about sustainable commuting practices that promotes active living.
- To combat barriers to biking, KSU could make environmental improvements such as additional bicycle parking, racks and trails/lanes, facilities for showering and changing clothes, and adding amenities such as air pumps and covered bicycle parking.
- Programmatic changes could include initiatives to improve biking safety and share the road signs.
- Policy changes such as increased parking permit prices could be disincentives to driving to campus, encouraging other forms of commuting.

References: