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Environmental Economics

ECON 2505ID

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What is the relationship between the  
number of adults reporting walking or  
biking for transportation in the last 30  
days and rates of obesity?

12/08/2023

In today's world, where obesity is a significant health concern, we're curious about a specific question: How does the way adults get around, whether they walk, or bike relate to obesity rates? It's more than just looking at what we eat or how much we move; we want to understand how our transportation choices might be connected to our health.

We know that factors like genetics and socioeconomic status play a role in obesity, but we're digging deeper into the daily habits of adults. Do those who walk, or bike more often have different obesity rates compared to those who rely on other forms of transportation? By exploring this connection, we're aiming to unravel the impact of our day-to-day choices on our health and, in turn, contribute insights that could shape better strategies for dealing with obesity.

Count of Rate of Obesity	Walking Rate			Grand Total
	High	Low	Med	
High	4	5	16	25
Low	5		1	6
Med		1	2	3
<b>Grand Total</b>	<b>9</b>	<b>6</b>	<b>19</b>	<b>34</b>

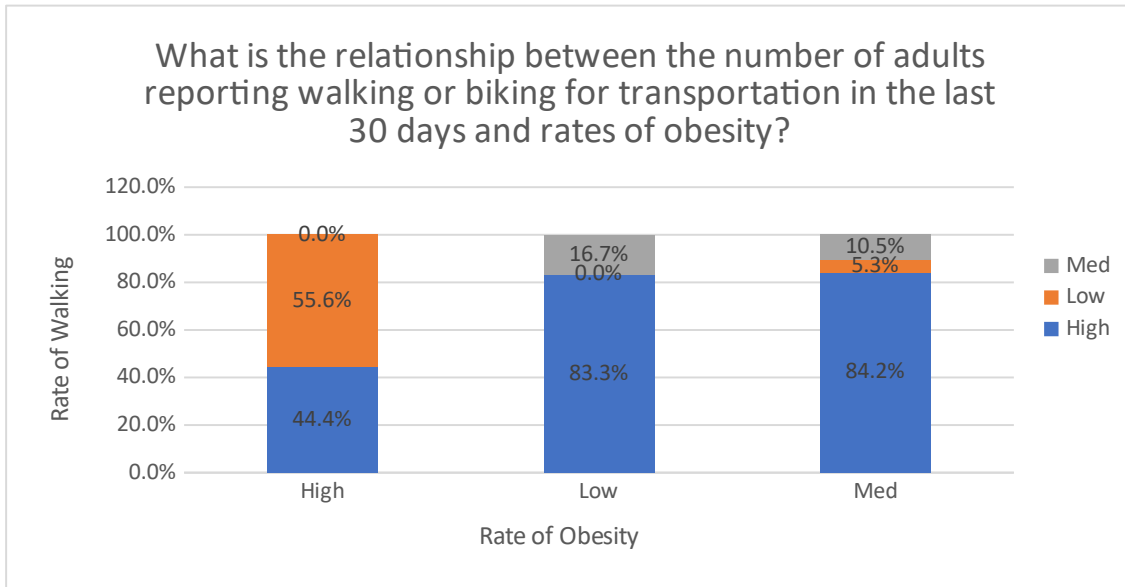
Count of Rate of Obesity	Walking Rate			Grand Total
	High	Low	Med	
High	44.44%	83.33%	84.21%	73.53%
Low	55.56%	0.00%	5.26%	17.65%
Med	0.00%	16.67%	10.53%	8.82%
<b>Grand Total</b>	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>	<b>100.00%</b>

Rate of Walking for transportation

Rate of Obesity

High= more than 85%  
 Med=75.1-85%  
 Low=less than 75%

High= more than 20%  
 Med=15.1-20%  
 Low=less than 15%



Source: New York Health and Environment Data Portal,  
<https://a816dohbesp.nyc.gov/IndicatorPublic/beta/>

In neighborhoods where the percentage of walking is low, 83% have high obesity rates. 17% of those neighborhoods have medium obesity rates. In neighborhoods with a medium rate of walking, 5% had a low obesity rate, 11% had a medium percent obesity rate, and 84% had a high obesity rate. However, where the rate of reporting walking was high, 44% had a high obesity rate, 56% had low obesity rates. From this data, it can be concluded that there is a strong association between rates of walking reported and obesity rates.

Pearson, Amber L,(2014) in her article named “Associations between Neighborhood Environmental Characteristics and Obesity and Related Behaviors among Adult New Zealanders” found that living in more deprived neighborhoods and having limited access to greenspace is linked to higher odds of being overweight or obese.

Interestingly, urban/rural status influences weight-related behaviors, with higher physical activity levels observed in rural areas, but a counterintuitive trend of less activity in areas with higher rates of active travel to work. Increased access to greenspace is associated with higher levels of walking, while decreased access is linked to lower walking levels. Low levels of walking are positively associated with neighborhood deprivation. Additionally, there is a significant urban/rural gradient for adequate fruit and vegetable consumption, with more people meeting recommended levels in rural compared to urban areas.

Brown, Barbara B.,(2012) in her article named “Neighborhood Design for Walking and Biking” found that features enhancing walkability and bikeability in neighborhoods are associated with lower BMI(Body Mass Index) and a lower risk of obesity. Notably, these results aren't solely attributed to the healthier weights of individuals who walk or bike to work, as they represent less than 3% of employed individuals in the neighborhood. The research introduces the concept that walkability to work signifies mixed land use, where homes and workplaces are within walking distance. Bikeability, encompassing factors like bike paths and controlled traffic, extends the idea of activity-friendliness. This study, using a nationally representative U.S. sample with objective BMI and physical activity measures, is the first to explore how neighborhood characteristics relate to physical activity and BMI, considering various control variables. The findings suggest that improving walkability and bikeability features in a neighborhood could be influential public health measures, potentially impacting residents' weight. The study provides quantitative insights, indicating, for instance, that

increasing walkability or doubling the bike-to-work proportion may have tangible effects on BMI.(Brown,2012)

Hong, Hsien-Jang,(2023) in his article named “Associations between Neighborhood Environmental Characteristics and Obesity and Related Behaviors among Adult New Zealanders” compared health outcomes in urban adults with chronic conditions across three transport modes: inactive, balanced, and active. Factors such as age, sex, marital status, employment status, income, and smoking behavior were associated with participants' transport modes, though with weak effect sizes. Participants with an active mode exhibited lower BMI, fewer years of chronic diseases, and less sedentary time, along with better comprehensive, social, and environmental quality of life (QOL) compared to those with an inactive mode. The findings suggest that the choice of transport mode is crucial for promoting the health of adults with chronic conditions. Notably, individuals with an active mode had a lower BMI, and the study emphasizes the potential benefits of active transportation, like walking and cycling, on obesity-related indicators. Moreover, those with an active mode showed better QOL, particularly in comprehensive, social, and environmental aspects. While sedentary times were lower for participants in the active mode, overall physical activity did not significantly differ among transport modes. The study recommends advocating for active transport, especially for populations currently engaged in inactive transport modes, with a focus on males, individuals aged 40–59, those married, employed full-time, with higher annual income, and smokers. The research underscores the importance of considering transportation choices in promoting the health and well-being of individuals with chronic conditions.(Hong 2023).

In conclusion, the results from these studies collectively indicate that encouraging walking and cycling, facilitated by enhanced neighborhood design and thoughtful transportation choices, may play a pivotal role in reducing obesity rates and improved overall health outcomes. The presented data consistently underscores a strong association between walking rates and obesity rates in various neighborhoods. Regions with low rates of walking tend to exhibit higher obesity rates, while those with higher walking rates demonstrate a lower prevalence of obesity. These observations underscore the significance of comprehensive approaches that take into account both individual behaviors and the environmental factors influencing physical activity. Addressing obesity effectively requires a strategy that embraces both personal lifestyle choices and the design of supportive living environments.

### **Bibliography**

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Source: New York Health and Environment Data Portal,  
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