



How Does Transportation Access Impact Self-Perceived Physical Health?

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What is the relationship between access to transportation and our own perception of physical health? That's the question researchers explored in the latest report funded by the National Institute for Transportation and Communities (NITC), "Examining the Impact of Transportation-Related Barriers on Self-Perceived Physical Health among Adults in the United States."

Specifically looking at household car ownership, the study found that having access to a vehicle correlated with better self-reported health. Among the other modes, respondents who used buses or paratransit were more likely to report their physical health as poor, while those who walked, biked or rode the train were more likely to report better physical health.

THE RESEARCH

The [National Household Travel Survey \(NHTS\)](#), conducted every 5 to 7 years by the Federal Highway Administration, is the primary source of information on the travel behavior of the American public. In 2017 the survey added a new section asking respondents to rate their own physical health (on a 5-point scale from poor to excellent), allowing researchers to explore data on individuals' travel behavior and compare it with their self-perceived health status.

The research team – Philip Baiden, Godfred Boateng, Alan Kunz Lomelin and Stephen Mattingly of the University of Texas at Arlington – used the NHTS data to examine the relationship between health and transportation access. Starting with an analytic sample of 71,235 respondents between 18 and 64 years of age, they used binary logistic regression to compare health ratings with household vehicle ownership. The researchers drew on the framework of [social determinants of health](#), first introduced by the World Health Organization and since adopted by the U.S. Department of Health and Human

Services. Access to transportation is often cited as an important social determinant of health, and is closely associated with health care access (i.e. an individual's ability to travel to health care appointments and pharmacies).

"This study was a first step to understanding how household vehicle deficits could impact health. We did adjust for demographic factors such as age, gender, and race/ethnicity and socioeconomic factors such as income and home ownership. We also adjusted for the mode they use," said Dr. Baiden.

KEY FINDINGS

Of the 71,235 respondents examined, 8.9% perceived their physical health to be poor. The team found that:

- **TRANSPORTATION ACCESS:** As the gap between the number of household members and the number of vehicles increases, respondents' self-perceived physical health deteriorates. Researchers believe this is likely due to the uncertainty in having access to transportation when the need arises. Respondents were less likely to perceive their physical health as poor if they sometimes walk, use their personal vehicles for travel, or use the train for travel. Respondents who sometimes ride the bus or use paratransit for travel were significantly more likely to perceive their physical health as poor.
- **DEMOGRAPHIC DIFFERENCES:** Race, age, income, and other demographic and socioeconomic factors significantly impacted self-perceived physical health. Respondents who self-identified as Black/African American or American Indian/Alaska Native/Native Hawaiian/Pacific Islander were more likely to have fewer vehicles per individual in the household and also report poor physical health.

- **HOMEOWNERSHIP:** “When we looked at those who are renters and those experiencing houselessness, we found that they were also more likely to have poor health compared to homeowners,” said Dr. Baiden.
- **EDUCATION AND INCOME:** In addition to home ownership, higher education and higher income were associated with better self-perceived physical health.

HOW MANY VEHICLES IS “ENOUGH”?

About 36% of the respondents had fewer vehicles per individual in the household. Controlling for the effects of other factors, respondents who had fewer vehicles per individual in the household had 1.27 times higher odds of reporting poor self-perceived physical health when compared to their counterparts with more vehicles per individual in the household.

“Not having enough vehicles per household was associated with a greater likelihood of poor health. But there was no difference in health outcomes between the people who had enough and the people who had more,” said Dr. Baiden.

RECOMMENDATIONS FOR POLICY AND PRACTICE

Access to quality and affordable health care remains a significant problem for individuals living in the U.S. The lack of access to a vehicle has the potential to significantly impede access to health care, thereby exacerbating the health conditions of individuals. This is especially true for individuals with chronic health conditions who require frequent visits to the doctor’s office for medical appointments and pharmacies to fill prescriptions. It is also important to note, access to a vehicle not only facilitates health care access but also access to health-promoting activities such as participating in recreational activities.

The final report suggests that social workers, engineers, and policymakers should begin working on viable solutions to reduce or eliminate transportation barriers and address disparities created by lack of access to reliable transportation. Furthermore, we must work to improve the quality and access

of health care for all community members, especially those who are most impacted by transportation needs and barriers. Another NITC-funded project looked at the potential of nonprofit service providers using ridehail services to fill mobility gaps for their clients who needed to reach services like healthcare: [Hailing Rides to Services: Implications of TNCs for Nonprofit Service Providers](#).

One limitation of the study that could be addressed in future research? The NHTS does not capture differences between places, which may impact the relationship between health and transportation.

“For example, a place like New York City where many people go by public transportation – we couldn’t adjust for that,” said Dr. Baiden. Future research could zero in on the differences between place types, and shed more light on the relationships between health and transportation access from place to place.

ABOUT THE AUTHORS

The research team consisted of Philip Baiden, Godfred Boateng, Stephen Mattingly and Alan Kunz Lomelin of the University of Texas at Arlington.

ABOUT THE FUNDERS

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THE REPORT and RESOURCES

For more details about the study, download the full report [Examining the Impact of Transportation- Related Barriers on Self-Perceived Physical Health among Adults in the United States](#) at nitc.trec.pdx.edu/research/project/1361

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