

Thesis Project Portfolio

Developing Wearable Headband for Enhancing Slow Wave Sleep in Older Adults
(Technical Report)

The Influence of Different Social Factors on Transportation Barriers to Healthcare Services in Rural Region of the United States
(STS Research Paper)

An Undergraduate Thesis

Presented to the Faculty of the School of Engineering and Applied Science
University of Virginia • Charlottesville, Virginia

In Fulfillment of the Requirements for the Degree
Bachelor of Science, School of Engineering

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Spring 2024

Department of Biomedical Engineering

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Sociotechnical Synthesis

Transportation is a significant social determinant of health and plays a large role in promoting a healthy life. The availability and reliability of transportation impacts a person's access to appropriate healthcare. In 2017, approximately 5.8 million Americans reported that transportation barriers prevented them from seeking proper medical care (Oluyede, et., 2022). These transportation barriers may include lack of access to a vehicle or public transportation, inability to operate a vehicle, lengthy travel times, and inadequate transportation infrastructure. Although these transportation barriers are a widespread issue across the entire United States, 40% of the United States population in rural areas have no public transportation services available and 25% have insufficient transportation (Glasgow, 2000). Transportation is one of the most frequently stated concerns by rural residents when addressing limitations to their access to healthcare. It is crucial to examine the factors that are potentially contributing to these transportation barriers because it can lead to increased healthcare costs and impact the quality of life for individuals who are in need of medical support. A lack of transportation can lead to further exacerbating existing medical concerns or delaying a potential diagnosis and treatment. It is important to address these transportation barriers so that healthcare is accessible and equitable for all individuals. This paper focuses on the different social factors that influence transportation barriers to healthcare services in rural regions of the United States and the role it plays in achieving equitable healthcare. This research was conducted through various literature reviews and syntheses, as well as adopting the Politics of Artifacts STS theory. The literature review involved a systematic process of collecting, analyzing, and synthesizing existing scholarly articles and papers that were relevant to transportation barriers in rural regions of the United States. This process aimed to examine the potential overlaps and gaps with each factor that may affect transportation to healthcare. The Politics of Artifacts STS theory crafted by Langdon

Winner was applied to examine whether existing transportation systems favor a certain ethical value or promote a particular political order. Winner's theory worked to further investigate the societal implications of these transportation barriers and whether they were equitable. Low income emerged as a significant factor influencing transportation barriers, particularly in rural regions where public transportation is scarce or nonexistent. The financial burden of owning and maintaining a vehicle, coupled with greater distances to healthcare facilities, places a large strain on rural residents, especially those with lower incomes. The absence of public transportation options highlights not only a gap in infrastructure but also a reflection of political and economic priorities that favor urban over rural investment. These decisions ultimately determined who has access to healthcare and who does not, therefore highlighting the influence low-income has on transportation barriers in rural areas. Transportation is a critical determinant of health that significantly affects access to healthcare, particularly in rural areas. By inspecting the social factors that influence these barriers, light is shed on the complexities of achieving equitable healthcare access and the need for targeted interventions and policies to overcome these barriers.