Evaluating the impact of neighborhood trail development on active travel behavior and overall physical activity among suburban residents

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Abstract
Many studies have examined the impact that the built environment has on physical activity, and much of the existing research posits that if communities will provide and improve active infrastructure such as trails, sidewalks, and bike lanes, people will become more physically active. Although this assumption is made, very few studies have been able to successfully quantify the impact that the construction of new active infrastructure has on travel behavior and physical activity levels, as existing studies rely heavily on cross-sectional methodologies which allow researchers to establish correlation but not behavioral causality. In this pilot project a longitudinal design is used to evaluate the impact neighborhood trail development to assess a trail construction impact on active travel behavior and overall physical activity among suburban residents. The research highlights residents of the Academy Park Neighborhood in West Valley City, Utah; a suburban area within the Salt Lake City, Utah Metropolitan Region where similar to most suburban locations in the country, active modes are rarely chosen. A sample of neighborhood residents were surveyed both before and after the construction of a class-one trail in their neighborhood using a preliminary household survey, individual activity diaries completed at three pre-assigned time points (before and twice after the trail's construction). Additionally, after the trail's construction, new residents to the area were surveyed and trail users user data was gathered using an intercept survey. These intervention techniques perform a more direct test of causality by looking at the same group of residents over time and analyzing first if individual changes in travel behavior occur following the construction of the trail; second, if new residents were drawn to the area due to the presence of the trail; and third, what characteristics trail users exhibit that make them different from the neighborhood population as a whole.

This analysis shows that in this case, the construction of a trail in a suburban neighborhood setting did not have a significant positive impact on the active travel behavior or physical activity levels of neighborhood residents in the short term. Mean and panel analyses both show that construction of the trail was correlated to active transportation and physical activity but it was significantly the exact opposite of expectations (it led to a decrease in active behavior). In addition, residential proximity to the local trail had rather limited significant correlation to total physical activity and active travel behavior. There was no significance in a continuous distance variable analysis, and a categorical analysis revealed that only households living one half to three quarters of a mile from the trail participated in significantly fewer minutes of physical activity (nearly 45) than the remainder of the sample. Several demographic variables proved to be significantly correlated to physical activity and total walking trips after the trail's construction, including day of the week, employment, age, possession of a drivers' license, and number of household vehicles. Additionally, adults age 18-64 did show a significant increase in physical activity episodes over the measured time period. This suggests that perhaps building the trail did not impact those who were already predisposed to participate in physical activity (the very young or very old), but may have impacted individuals who were likely to participate in physical activity and active travel behaviors to begin with. It is highly unlikely that new residents were drawn to this specific neighborhood by the new walking/biking trail. The new residents are in large, young, middle income families, who moved to this location for much the same reasons as their historic counterparts - primarily housing affordability, and proximity to employment or friends/family. They did report the importance of access
to transportation and other amenities (i.e. trails, parks, and open space) at a higher rate than historic residents, but also view their neighborhood as less safe than historic residents and report that they would be more likely to walk if they lived in a different neighborhood. Lastly, the trail intercept survey revealed that although the mean residential distance from the trail for all trail users was within walking/biking distance for many (1.75 miles), it may not be considered as such for a large percentage of individuals.

Although some of the findings of this research run counter to the original hypotheses that in turn were based on the literature, a trail does indeed have a place as a part of the overall urban structure. This research simply shows that trails should not be constructed merely to provide the supply needed by an imagined demand for physical activity, but rather should be incorporated into the overall design of a community as one component of a multi-modal transportation and recreation system. However, simply installing a paved path (such as this trail) where there was not one before is obviously not enough to induce demand for physical activity when that physical activity does not fit the lifestyle and the everyday life of people.