Public Health and Travel Behavior

Mehran Fasihozaman Langerudi
University of Illinois at Chicago

Public health, as a major factor influencing the livability and well-being of a community has been a subject of interest in many academic fields including Transportation science. It is postulated that public health has potential associations with various travel related factors such as Travel Behavior. Travel Behavior could indirectly impact public health by influencing various personal and community level quality of life indicators such as physical activity and Air pollution respectively. Various aspects of Travel Behavior such as mode choice, route choice, trip generation, trip sequence and scheduling are affected by built environment, soiodemographic and trip features. Some of these features that are displayed in Figure 1 include Urban Form, Land Use, Transportation System like transit accessibility, quality and frequency of service, and trip purpose and duration. These features directly influence travel behavior; while, travel behavior would directly impact Air pollutions, physical activity, traffic, comfort/safety of travel and Noise pollution. These quality of life indicators are believed to have some level of association with public health status. Therefore, consistent in-depth research on different aspects of travel behavior and how each aspect is related to public and individual health indicators are highly suggested by travel and health specialists.

Although association between travel behavior and public/individual health seems highly expected, in many cases the suggested magnitude of the impacts are sophisticated due to the complexity of the involved factors as well as scarcity of reliable data sources (1, 2). Thus, an important effort in this area would be an appropriate investment on health and travel behavior related surveys by partnering with health related organizations such as Centers for Disease Control and Prevention, for instance by appending travel information to surveys such as Behavioral Risk Factor Surveillance System (BRFSS) (3). Since available data is very limited in this subject, many researchers have solely assessed the impact of transportation related factors on health indicators such as physical activity and livable communities. For example, Transit Use has long been considered as a healthy mode of transportation based on the fact that it motivates people to walk more often leading to more physical activity (5). Some studies have shown that those with higher number of auto-oriented trips would be engaged in less daily physical activities that may discourage them from frequent walking/biking to their destinations (6). A number of other studies have presumed that design of livable communities and neighborhoods could promote essential health conditions; but, to what extent is out of scope of these studies (7). Communities that provide residents with safe and secure neighborhoods, clean air, accessible land use system that encourage residents to walk, run and use mass transit are considered livable communities. At the same time, livable communities with mixed-use residential and commercial centers are considered to be healthier since these communities promote walking, exercising, biking and higher living comfort and safety.

In summary, to study associations between travel behavior and health, various relevant factors as are displayed in figure 1 need to be studied by collecting insightful surveys; surveys that can monitor short and long term individual health conditions along with relevant travel and land use information.
Figure 1. Association of Travel Behavior and Public Health

References


