



A Life Course Perspective of Chronic Disease and the Impact of Surface Transportation

This poster was selected as 1 of 4 finalists out of a field of 86 master and doctoral level submissions to the Academy of Health Annual Research Meeting held in Baltimore, Maryland, June 23, 2013. The poster was also accepted and presented at the American Public Health Association Annual Meeting held in San Francisco, California, October 29, 2012. It is currently being written up as a manuscript for submission to the Transportation Research Board in August 2014.

Research Objective

To develop a conceptual framework that demonstrates the synergy of risk and protective factors involved in the development of chronic disease over the life course and the impact of surface transportation.

Study Design

A novel conceptual framework based on the principles of the socio-ecological model.

Population Studied

The proposed theoretical framework is applicable to all populations utilizing surface transportation modalities.

Principle Findings

This process oriented approach demonstrates the synergy of risk and protective factors involved in the development of chronic disease accounting for the psychological/behavioral, social and biological contexts over time beginning with preconception and extending through to old age. The emphasis is on individual choice and how choice sets in motion one's life trajectory and social well-being. Thus, the choice of transportation modality is dependent upon place of residence (urban, suburban or rural) in which an individual may choose to walk; bicycle; use public transit, rail; or drive a motor vehicle. These choices are influenced by the availability of transportation alternatives within a community, perceived personal and budgetary constraints, attitude, habit and educational information. This poster graphically depicts the manner in which human utility and the interplay of life stressors manifest in the body as chronic disease.

Conclusions

Transportation is a vital component to community sustainability in terms of accessing health care, education, employment, leisure activities, and social networks. Transportation mode choice is correlated with life trajectory events such as employment and education, which are interconnected with maximizing individual utility. Thus, activity patterns, personal decision processes, behavioral rules and the travel environment characterize a person's behavior with respect to the multidimensional nature of choice and the development of chronic disease.

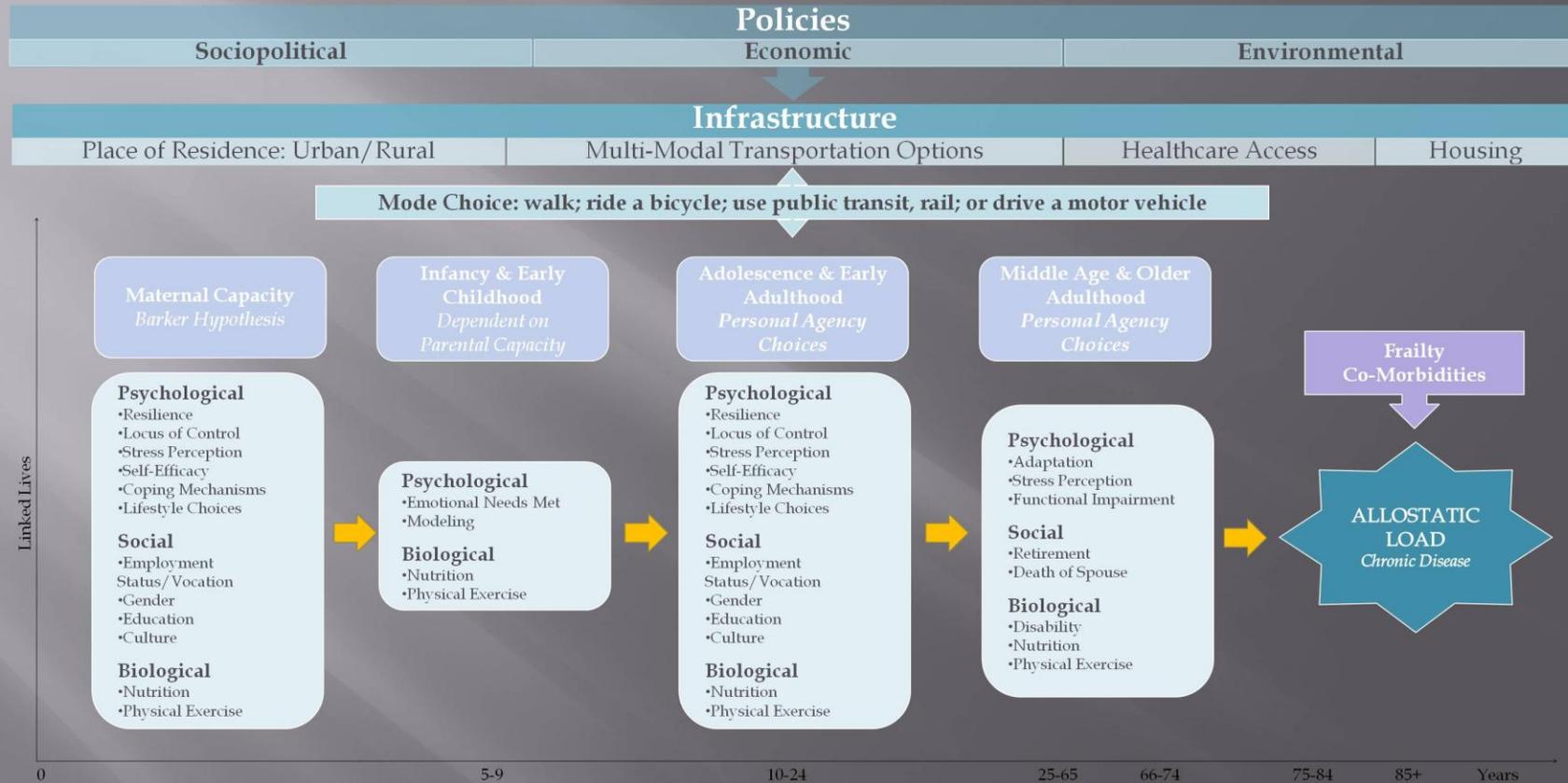
Implication for Policy, Delivery or Practice

Analysis of chronic disease based on a systems approach that considers the synergy of risk and protective factors as opposed to a single exposure such as surface transportation.



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Karyn M. Warsow, MS, MPH, DrPH (c) For more information visit: www.transpothealthlink.com



Transportation is a vital component to community sustainability in terms of accessing health care, education, employment, leisure activities, and social networks. Along the life course, an individual will make choices regarding mobility from one place to another that impact the contexts of well-being. Dependent upon the place of residence (i.e. urban, suburban or rural), an individual may choose to walk; ride a bicycle; use public transit, rail; or drive a motor vehicle. "These choices are influenced by the availability of alternatives within a community, perceived constraints, attitude (social pressure), socioeconomic status, habit, information, and personal evaluation. Transportation mode choice is correlated with life trajectory events such as employment and education, which are interconnected with maximizing individual utility."¹ Utility as it relates to personal benefit and budgetary constraints of travel time, distance to and from a destination, incurred cost, distance and time to reach a mode of transportation are all interconnected with choice. Thus, activity patterns, personal decision processes, behavioral rules and the travel environment characterize a person's behavior with respect to the multidimensional nature of choice and the development of chronic disease.

1. Modeling Life Trajectories and mode choice using Bayesian Belief Networks (September 26, 2011). Retrieved From: <http://www.tuc.nl/en/research/experts-expertise/full-professors/cp/p/1234801>