

14-0614 - Travel characteristics and self-reported indicators of well-being

ABSTRACT

The promotion of well-being is increasingly being recognized as a key component of public health policy. This paper presents an investigation into the link between transport mobility, transport accessibility, well-being and health. Based on a survey carried out in Dublin, Ireland; it compares a respondent's self-reported well-being as measured by the WHO-5 Well-being Index, with data on travel mobility and travel accessibility. The use of cycling as a mode of transport is strongly correlated with well-being, with more frequent cycling producing larger well-being gains. No relationship is found between any of walking, car access or car-ownership. The use of public transport, in particular buses, is negatively correlated with well-being, with more frequent use producing larger well-being deficits. The use of a wider variety of modes of transport does not correlate with well-being however there is a correlation between access to a wider variety of transport modes and well-being. Finally absolute values of annual travel use, such as number of journeys, distance travelled, CO2 emissions, cost of transport and time spent travelling, do not correlate with well-being.

14-2506 - Health, Transport and Urban Planning: Quantifying the Links to Boost the Value of Health Impact Assessment

ABSTRACT.

While Health Impact Assessment has been well developed in other fields, its application to date within urban planning has been limited. Health costs are additive to other external costs and need to be considered along with traditional transport and urban planning costs. The paper sets out to develop a simple, effective and consistent method of assessing health outcomes from a typical urban development at a precinct scale within an Australian planning context but applicable for elsewhere. To do this the literature on health, urban form and transport is summarized and the results applied to transport outputs, namely vehicle kilometers travelled (VKT) and mode share, from urban development assessment models. A methodology is then created using two different approaches, which were tested using a case study of Cockburn Coast, a new development in Perth, Australia. The results from the two approaches were nearly identical, thus it seems feasible that the approach could be useful for assessing health outcomes using transport modeling outputs for new urban precincts.

14-2979 - Investigating The Role Of Transport Models In Epidemiological Studies Of Air Pollution Exposure And Health Effects

ABSTRACT

Urban air pollution has been linked with a range of health effects; in metropolitan areas on-road traffic is the largest contributor to local air pollution and therefore, exposure to traffic emissions could potentially explain the odds of air pollution related health effects among the general population. In this study, we investigate the possibility of using a transportation model developed for the City of Montreal for the purpose of deriving a measure of individual exposure to traffic emissions. This model has been extended with capability for modelling transport emissions at the individual and household levels. The

resulting transport emissions are distributed across the modelling domain and validated against air pollution levels previously derived using a Land Use Regression (LUR) technique, a commonly used method for deriving individual exposure in epidemiological studies. We observe a medium and significant correlation between both datasets with strong correlations in the neighbourhood of all roads. Exposures were also derived for a sample of breast cancer survivors in the Montreal area using both methods (LUR and transportation model). We observe comparable odds ratios (OR) for breast cancer suggesting that a transport model can potentially act as a cost effective alternative to air pollution monitoring for epidemiological analysis of air pollution and its health effects.

14-3797 - Estimating the Health Benefits of Cycling

ABSTRACT

This paper examines the health and economic benefits from the construction of a new segregated cycle way in Ireland. The health economic benefits were estimated using the World Health Organisation's (WHO) Health Economic Assessment Tool (HEAT). This tool can be used to calculate the health economic benefits from an intervention (construction of a new cycling facility). The data used for this tool was retrieved from the survey that was undertaken in the study area in 2012 and 2013. In total there were 845 responses to this survey. The results of the paper show that the construction of the proposed cycle way would yield significant health and economic benefits if constructed.

14-5362 - Travel behavior and health: A new way to capture the influence

ABSTRACT

This study examines the relationship between travel behavior and health-related quality of life (QOL) and more specifically the influence that the travel behavior has on citizens' health based on an interdisciplinary approach, which integrates the knowledge of health science, transportation and urban planning. The health-related QOL covers physical, mental, and social health. The three dimensions of the health is measured using eight subscales (i.e., physical functioning (PF), limitations on role because of physical health (RP), bodily pain (BP), general health (GH), limitations on role functioning because of emotional problems (RE), mental health (MH), social functioning (SF), and vitality (VT)). The eight subscales include 36 question items. The travel behavior is measured by trip purpose, frequency by activity, frequency by travel mode, and travel distance from home by activity, etc. The influence of the travel behavior on the health-related QOL is analyzed by the use of structural equation models. The analysis was conducted using a web-based survey implemented in November 2010, in which 1,213 respondents from 20 different cities in Japan participated. It is concluded that physical health, which are often focused on in the transportation literature, is not sufficient to capture the influence of travel behavior on human health, mental and social health cannot be ignored, and the health QOL with the three dimensions should be incorporated into the practice of health impact assessment and transport policy decisions.

14-3570 - Advancing Public Health Through Data-Driven Active Transportation Policymaking: A Methodology for Assessing State Pedestrian Infrastructure Needs
ABSTRACT

Increasing the number of active transportation that is walking and biking trips not only advances a balanced, multi-modal transportation system but also improves public health by decreasing air pollution through fewer motor vehicle trips and increasing physical activity levels. At the same time, both transportation and public health professionals prioritize safety for people walking and bicycling and aim to reduce pedestrian and bicyclist fatalities and serious injuries resulting from vehicle collisions. Yet, active transportation modes lack robust methodologies and tools to adequately assess and estimate the cost of current and future infrastructure needs in order to advance these public health and transportation objective

California WALKS a statewide pedestrian advocacy organization adapted a methodology devised by the Los Angeles County Department of Public Health to estimate the cost of pedestrian infrastructure needs in California. This paper explains the data driven methodology to estimate the cost of building and maintaining infrastructure needed for creating walkable communities in California, and includes: a brief description of the Los Angeles County Department of Public Health's original methodology; adaptations of the methodology to focus solely on pedestrian infrastructure needs; data sources and calculations used to estimate statewide costs for pedestrian improvements; and a discussion of assumptions and limitations of the adapted methodology. The adapted methodology demonstrates the flexibility of the Los Angeles County Department of Public Health's original methodology and its potential to be tailored to fit the needs of other regions to estimate the level of investment needed to build and maintain active transportation networks