



ELSEVIER

Contents lists available at ScienceDirect

## Journal of Transport &amp; Health

journal homepage: [www.elsevier.com/locate/jth](http://www.elsevier.com/locate/jth)

# Health implications of transport: Evidence of effects of transport on social interactions<sup>☆</sup>

S. Boniface<sup>a,\*</sup>, R. Scantlebury<sup>a</sup>, S.J. Watkins<sup>b</sup>, J.S. Mindell<sup>a</sup>

<sup>a</sup> Health and Social Surveys Research Group, Research Department of Epidemiology and Public Health, UCL, 1-19 Torrington Place, London WC1E 6BT, United Kingdom

<sup>b</sup> Stockport Metropolitan Borough Council, Town Hall, Edward Street, Stockport SK1 3XE, United Kingdom

## ARTICLE INFO

## Keywords:

Transport  
Social exclusion  
Social capital  
Social cohesion  
Social networks  
Community severance  
Health

## ABSTRACT

Some links between transport and health are widely known, such as active travel, physical (in)activity, air pollution and injuries. Others are not as apparent and are much less studied, for example social interactions. This article reviews the evidence that transport impacts on social interactions, and that social interactions impact on health. It is an updated version of part of chapter 5 from *Health on the Move 2*.

There is growing evidence that aspects of transport influence social exclusion, social capital, social cohesion and social networks. Numerous studies have identified associations between these aspects of social interaction and morbidity and mortality. Community severance – where transport infrastructure or the speed or volume of traffic act as a physical or psychological barrier – impacts on individuals' travel, social networks, and the accessibility of goods, services and facilities, and has scope to influence health through a number of routes. With the development of more comprehensive measures, such as of community severance, it is likely that there will be stronger evidence that transport influences health through these pathways.

© 2015 Elsevier Ltd. All rights reserved.

## 1. Introduction

The effects of transport on health are complex and numerous and bring consequences for transport planners and those for whom they plan (for a broad summary, see [Cohen et al., 2014](#)). While some of these effects have been widely studied (for example active travel, physical (in)activity, air pollution, and injuries), others are less apparent. Hence many working in the field may not realise that transport also impacts on health through its effects on people's social interactions, which are important for health in a number of ways. This article explains some of the links between transport, social interactions and health. The article does not cover the effects of transport on stress; this is covered elsewhere (see *Health on the Move 2* (HotM2) chapter 5 ([Mindell et al., 2011](#))).

This article is a revised and updated version of part of a book chapter (chapter 5) from HotM2 ([Watkins and Mindell, 2011](#)). This overview of the literature introduces the ways that transport impacts on social interactions and that social interactions are related to health. It is intended to illustrate the state of the evidence, but is not an exhaustive review.

### 1.1. Definitions

In this article we refer to the social circumstances of interest broadly as 'social interactions'. By this, we refer to social exclusion, social capital, social cohesion, and social networks collectively. There are, of course, other aspects of social interaction that are important, but the purpose of this paper is to explore those most relevant to both transport and health.

<sup>☆</sup>This article is a revised and updated version of part of a book chapter: Watkins SJ, Mindell JS. 'Stress, social support, and community severance'. Chapter 5 in Mindell JS, Cohen JM, Watkins SJ (Eds) *Health on the Move 2. Policies for health-promoting transport*. Stockport: Transport and Health Study Group, 2011. [www.transportandhealth.org.uk](http://www.transportandhealth.org.uk). It is revised and published with permission of the Transport and Health Study Group.

\* Corresponding author. Tel.: +44 20 3108 3142.

E-mail addresses: [s.boniface@ucl.ac.uk](mailto:s.boniface@ucl.ac.uk) (S. Boniface), [r.scantlebury@ucl.ac.uk](mailto:r.scantlebury@ucl.ac.uk) (R. Scantlebury), [stephen.watkins@stockport.gov.uk](mailto:stephen.watkins@stockport.gov.uk) (S.J. Watkins), [j.mindell@ucl.ac.uk](mailto:j.mindell@ucl.ac.uk) (J.S. Mindell).

We use the term *social exclusion* to describe “the process by which people are prevented from participating in the economic, political and social life of the community because of reduced accessibility to opportunities, services and social networks, due in whole or part to insufficient mobility in a society and environment built around the assumption of high mobility” (Kenyon et al., 2002: 210), i.e. social exclusion describes structural processes that can result in *social isolation* (see Section 2.1, below, although few transport studies use this phrase). We acknowledge there is overlap between some elements of the concepts of social exclusion, social isolation, social capital, social networks and social networks (see, for example Levitas, 2006), but in this paper we treat them as discrete in order to aid interpretation of previous studies.

Putnam has been influential developing the concept of *social capital*, which he refers to as the value of social networks, and the inclinations that arise from these networks to do things for each other (Putnam, 2000). Social capital is described by Currie and Stanley in their 2008 review as “the advantage individuals and communities can gain from social participation, mutual assistance and trust” (Currie and Stanley, 2008). This is linked to – although distinct from – *social cohesion*, which is described as comprising both the structural forms of social networks, and the quality of social relationships (Marmot, 2005), in this case with respect to the neighbourhood or community. Similar to social cohesion is the term ‘sense of community’, sometimes used in the transport literature.

The term *social network* is used to describe the quantity or quality of social contacts a person has. Social networks are important for many reasons. Social capital and social cohesion both require social contacts in order to develop, so social networks could be thought of as a prerequisite for these to occur. Social networks are important in other aspects of social interactions too; social isolation occurs in the absence of social contacts, and social exclusion can result in diminished social contacts. Social networks also enable social support to be provided; this is the provision of emotional, tangible (material), informational support, or belonging (Wills, 1985).

## 2. Access to transport

### 2.1. Access and social exclusion

Lack of access to transport or withdrawal of public transport services, can diminish social networks, and subsequently levels of social support, while adequate, reliable and affordable transport networks can be beneficial (Nicholl et al., 1987). Whether transport is accessible depends not only on the provision of public transport services and physical proximity to them but also the cost, provision of information, and other aspects such as safety and crime. If these are poor, individuals can be considered to be at transport disadvantage, and may face social exclusion following reduced accessibility to opportunities, services and social networks (Kenyon et al., 2002: p210). This is likely to exacerbate existing socio-economic inequalities. The relationship between transport disadvantage and social exclusion was recognised by the UK Government's Social Exclusion Unit in 2003 (Social Exclusion Unit, 2003) and remains on the transport research agenda (see for example Lucas, 2012). In a recent study in Canada, Julien and colleagues found the relationship between accessibility of services and amenities was conducive to social participation, and social participation itself was linked to frequency of transport use (but not walking frequency) (Julien et al., 2014).

Empirical work exploring the links between access, social exclusion and wellbeing has found that increased trip making indirectly increases personal well-being through reducing social exclusion (Stanley et al., 2011). Social isolation is a related phenomenon and can be brought about by social exclusion. Social isolation was shown to impact on health in a large study of 16,849 participants. In that study, it was found that social isolation was a predictor of mortality, with an effect size as great as that of smoking, and greater than that of having high blood pressure (Pantell et al., 2013).

### 2.2. Access and social capital

In addition to social exclusion, it has been suggested that access to transport can affect social capital. Currie and Stanley's, 2008 review suggested that ‘co-presence’ on public transport (face-to-face contact while travelling together) may contribute to social capital, but that car dependence and driving alone may have a negative impact on social capital. Therefore while increasing car use could potentially reduce social exclusion (disregarding the impact of the social gradient in car ownership), the negative consequences of this for social capital mean that the social environment would likely benefit most from provision of a public transport network that is comprehensive, efficient, cheap, and safe.

Both neighbourhood and individual aspects of social capital were associated with self-rated health in a large recent Dutch study ( $n=53,269$ ) (Mohnen et al., 2014). A 2014 review of social capital and health considered social capital to incorporate social participation, civic participation, social network, social support, trust, norm of reciprocity and sense of community (Choi et al., 2014). The authors comment that the heterogeneity of measurement of social capital makes meta-analysis of these studies challenging. The review of 14 studies found some limited evidence that social participation and civic participation aspects of social capital were associated with some beneficial effects for all-cause mortality and cardiovascular mortality in the extreme comparison groups (Choi et al., 2014). However, the authors did not find evidence for other dimensions of social capital as effective predictors of mortality, cardiovascular disease or cancer. A 2005 review found strong evidence of an inverse relationship between individual level social capital and mental health (De Silva et al., 2005).

## 3. Built environment

### 3.1. Walkability and social capital

There is growing evidence that aspects of the built environment such as the layout of the street network can influence social interactions. This occurs in a number of ways. Firstly, neighbourhood walkability – often measured by intersection density, land use mix, and/or population density – is thought to be beneficial for social relationships because walkable neighbourhoods promote walking, which in turn creates opportunities for social interaction. For example, Leyden's study in Ireland found that walkability of neighbourhoods was related to knowing

Download English Version:

<https://daneshyari.com/en/article/10506705>

Download Persian Version:

<https://daneshyari.com/article/10506705>

[Daneshyari.com](https://daneshyari.com)