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# Age, disability and everyday mobility in London: An analysis of the correlates of 'non-travel' in travel diary data

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### ABSTRACT

Maintaining everyday mobility is important for health at older age. This paper explores one indicator of lack of mobility: not leaving the home on a particular day, which we term 'non-travel'. We used travel diary data from London residents between 2005 and 2015 to identify the correlates of non-travel for adults. Rates of non-travel were associated with: female gender, unemployment, lack of access to a car, lack of travel concessions, increasing age, disability and being retired. In a logistic regression analysis, older age was independently associated with non-travel, with those aged 60–69, 70–79 and over 80 more likely than working age adults (odds ratios 1.76; 2.18; 3.88 respectively) to report non-travel than working age adults. London faces similar problems to other global cities, with an increasing older population, and policy obligations to shift further from private car based transport to public and active modes. This study has demonstrated that declining levels of mobility at older age in London are not due solely to leaving the labour market or to disability, and that the availability of transport helps reduce, but does not entirely mitigate, the barriers of older age and impairment. To ensure that cities are as health-promoting as possible, more attention is needed to guarantee transport systems foster mobility at older age.

### 1. Introduction

#### 1.1. Ageing, mobility and health in urban environments

By 2060, people aged 60 or over will make up 22% of the global population, and will outnumber children under the age of 14 for the first time (World Health Organization, 2007). Not only will the world's population be older, it will be more urban. By 2050, two thirds of the world's population are forecasted to live in cities (United Nations, 2014). In the UK, adults aged 65 or over will account for 23% of the population by 2035 (ONS, 2012). The increase in life expectancy, however, has not been accompanied by a rise in 'disability-free life expectancy' (ONS, 2014). In the National Travel Survey, 12% of people in England aged 60–69 and 31% of those over 70 reported mobility difficulties (difficulty travelling by foot or bus) (Department for Transport, 2014). More people are living with long-term health conditions and disabilities which affect their ability to travel and be mobile outside of the home.

Mobility is important for health. This paper focuses on one particular aspect of mobility: everyday travel outside the house. As

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Metz (2000) highlights, these 'short distance and high frequency movements' outside of the permanent home are the priority for older people, as opposed to larger scale mobility such as residential relocation or international migration. The health benefits of this everyday mobility have been well documented (e.g. Boniface et al., 2015; Mackett and Thoreau, 2015; Musselwhite et al., 2015). First, in terms of directly contributing to physical activity, most non-car travel entails some 'active travel', thus contributing to obesity reduction and other physical health benefits (Saunders et al., 2013; Webb et al., 2012). Indeed in London, like many other cities, travel is a key source of physical activity for many residents (Fairnie et al., 2016). Second, travel facilitates social inclusion. For older adults, social exclusion is a major potential determinant of health, with isolation associated with increased risk of all-cause mortality (Holt-Lunstad et al., 2010), decreased immune system efficacy (Bernard, 2013), and increased risk of cardiovascular disease (Steptoe et al., 2013). More generally, there is a large and persuasive body of evidence documenting the psychosocial benefits of mobility in later life, beyond those derived from the instrumental role of transport in facilitating accessibility (Ziegler and Schwanen, 2011). Access to the public spaces of the city can have a 'therapeutic quality', and be important for fostering a sense of place, belonging and wellbeing (Cattell et al., 2008). These public spaces can include the transport system itself, with buses identified as a means of tackling chronic loneliness or isolation by providing a space where opportunistic social interaction is acceptable for older adults (Green et al., 2014).

Thus transport systems themselves have a role to play in facilitating or inhibiting the wellbeing consequences of mobility at older age, with accessible public transport having the potential (in cities) to foster physical activity and interaction, and to mitigate the loss of mobility risked by older citizens who have to give up give up driving (Mackett, 2015). Free bus travel in England for older citizens has been identified as effective in reducing risks for obesity (Webb et al., 2012) and fostering social inclusion (Green et al., 2014). The relationship between mobility and health is not, of course, unidirectional: declines in wellbeing can combine with limitations in mobility outside of the home to create a downward spiral for an individual (Ziegler and Schwanen, 2011). Ageing itself has therefore been seen as a key risk for declining mobility, with potential for contributing to reduced quality of life at older age (e.g. Metz, 2000; Musselwhite et al., 2015; Schwanen and Páez, 2010; Schwanen et al., 2012). However, this link is not inevitable: everyday mobility might be used as an explicit mechanism for structuring life after the transition from work to retirement, and thus contributing to wellbeing (Berg, 2016). Given the importance of mobility to health and wellbeing in later life it is important that we understand the different factors which may be associated with increased or decreased propensity to be mobile in urban environments.

### 1.2. The setting and policy context

London provides a useful case study for studying the impact of older age and disability on urban mobility. By 2035, there will be just over 750,000 Londoners over the age of 75, an increase of over 290,000 from 2015 (GLA Intelligence Unit, 2016). Accompanying this increase will be a rise in Londoners experiencing a long-term health condition or disability. Currently, 37% of Londoners over the age of 65 report disability, accounting for 45% of disabled London residents (Transport for London, 2014). By 2031 it is estimated that there will be an additional 150,000 people in London reporting 'reduced mobility' (that is, some kind of disability), bringing the total to over 1 million. (London Councils Transport Environment Committee, 2015). There have been calls for more evidence on what can improve mobility in later life, an endeavour which must scrutinize the role of transport systems (Musselwhite, 2015). Barriers to mobility at older age identified in the literature include inability to drive or access to a family member who can drive (Green and Lakey, 2013; Nordbakke, 2013), giving up driving (Davey, 2007; Mackett and Thoreau, 2015), and financial constraints (Rantakokko et al., 2012). Older citizens in London are, theoretically, less vulnerable to these constraints: car ownership and use is lower than elsewhere in the country, and there is relatively good access to frequent public transport services, which is free at the point of use for older adults. Over 90% of London's population live within 200 m of a bus stop (Mayor of London, 2010), and public transport use is widespread and less stigmatised than elsewhere (Green et al. 2014).

Nevertheless, car use is still prevalent, with 57% of Londoners aged 65–69 and 22% of those over 80 reporting driving at least once a week (Transport for London, 2014). Further, in general, older residents of cities in both higher and lower income countries report that they do not feel their cities were designed with older people in mind (World Health Organization, 2007). Global initiatives such as the World Health Organization's 'Age Friendly Cities' aim to improve conditions for urban older adults. These initiatives are underpinned by an important point – age and mobility must be considered in relation to the relevant social and built environments. The ability of older people to use different types of transportation and be more or less socially included (two important measures of age-friendliness) will differ according to their sociodemographic characteristics and will thus influence how mobile (and potentially how healthy) they are. This study aimed to contribute to our understanding of mobility in an urban context by identifying which factors might be associated with 'non-travel' in London.

### 2. Methods

### 2.1. Data source

We utilise the London Travel Demand Survey (LTDS), which measures respondents' travel for one day, to model associations between non-travel and sociodemographic and transport related characteristics. The LTDS is an annual survey capturing information about the travel behaviour of Londoners. It is conducted on a rolling basis and is administered by trained interviewers. The annual sample is around 8000 households, stratified to yield 250 households for each of the 32 London boroughs and the City of London. Data is collected about the household, each individual in the household over the age of 5, and the trips they respectively made on the survey day.

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