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"Benches become like porches": Built and social environment influences on older adults' experiences of mobility and well-being

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ABSTRACT

Neighbourhood environments significantly influence health and well-being, especially as people age. Our study uniquely highlights how one microscale feature (benches) influence older adults experiences of mobility and well-being, from their perspective. We also explore how these experiences affect and are affected by the social environment of the neighbourhoods where older adults live. We conducted one-on-one seated and walk-along interviews with individuals aged 60+ that live in three adjacent neighbourhoods in Vancouver, Canada. We collected data at two time points (n = 28, 2012; n = 22, 2014). We found that benches positively contributed to older adults' mobility experiences by: (i) enhancing their use and enjoyment of green and blue spaces, (ii) serving as a mobility aid, and (iii) contributing to social cohesion and social capital. To address the increased needs of an aging demographic, urban planners might consider the quality and presence of microfeatures as part of an immediate and inexpensive strategy to create supportive neighbourhoods for people of all ages and abilities.

1. Introduction

Neighbourhood environments significantly influence health and well-being, especially as people age (Beard et al., 2009; Evans and Phil, 2011). Both built and social environments influence patterns of behaviour and experiences of human activity within urban settings (Graham et al., 2014; McNeill et al., 2006). Given the unprecedented demographic shift toward an aging population worldwide (World Health Organization, 2015), research on built and social environments and their relationship with older adult health has gained momentum (Ståhl et al., 2013). Cities that adapt to be more "accessible to, and inclusive of, older people with varying needs and capacities" are integral to health promotion (World Health Organization, 2007). Adaptability is paramount, given that most older adults wish to 'age in place' in their chosen homes and neighbourhoods (Lord and Luxembourg, 2007), and most health and social systems cannot sustain any other approach. Public health officials and urban planners can gain practical insights from an in-depth understanding of how built environment and social factors interrelate to affect the health and well-being of older adults (Beard and Bloom, 2015; Hanson et al., 2012).

1.1. The built environment and older adult mobility

Maintaining mobility is considered the best guarantee of older adults being able to cope and remain in their homes and communities (Fried et al., 2004; World Health Organization, 2015). The evidence is clear – the built environment affects older adult mobility (Frank et al., 2010; King et al., 2011; Rosso et al., 2011; Winters et al., 2015). Depending on built environment research focus area, mobility may be defined as walking or active transportation (King et al., 2011; Rosso et al., 2011; Yen and Anderson, 2012); or calculated using travel behaviour measures, typically trips per day (often both motorised and no-motorised) and distance travelled (Collia et al., 2003; Su and Bell, 2009). We operationalize mobility as: one's ability to physically move throughout one's home and neighbourhood, either independently or using a mobility aid, to engage in daily activities, and access resources.

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Highly "walkable" neighbourhoods are associated with greater mobility among older adults (Clarke et al., 2008; Michael et al., 2006; Nagel et al., 2008). We define walkability as the extent to which built and social environments facilitate or hinder walking for purposes of daily living (Andrews et al., 2012). The practical and health related importance of walking increases as individuals grow older (Mendes de Leon et al., 2009; Ståhl et al., 2013). Built environment features that influence older adults' walking include: increased density, mixed land-use, presence of amenities, and perceived safety (Mahmood et al., 2012; Ståhl et al., 2013).

A number of factors contribute to older adults' particular susceptibility to the built environment's impact on their health. Neighbourhood built environments interact with individual physical capacities to impede or enhance mobility (Clarke et al., 2009; Webber et al., 2010). Mobility impairments increase with age and may cause one to walk less far without stopping to rest, and take longer when crossing at intersections (Carlson et al., 2012; King et al., 2003). Built environments that limit mobility also negatively affect older adults' mental health, as the inability to 'get out and about' and engage in social and daily-living activities can be detrimental for well-being (Richard et al., 2013; World Health Organization, 2015).

Simple alterations to the built environment may help individuals to maintain their mobility despite physical decline. This strategy is especially important for promoting older adult health at a population level, as built environment changes may be relatively easier to implement and have greater reach, than efforts to change individual health risk factors (Clarke et al., 2009; Van Cauwenberg et al., 2014). From this perspective, we are particularly interested in microscale but impactful features of the built environment that surface as impactful for older adults.

1.2. Social environment and older adult mobility

Researchers recognize factors that comprise the social environment (social factors), as significant to understand the 'full picture' of barriers and facilitators to older adult mobility (Franke et al., 2013; Gardner, 2014; Hanson et al., 2012). Social exchanges and familiar routines may encourage older adult mobility (Franke et al., 2013; Yen et al., 2014). Also, strong social relations may reduce the risks of older adults' limited mobility (Gardner, 2014).

Research suggests strong interconnections between built and social environments, as the built environment may influence behaviour patterns and opportunities for social connection (Kweon et al., 1998). As one example, older adults who lived in vital urban areas (described as areas with lively pedestrian activity on the street), took more trips and were therefore more engaged in activities than those who lived in non-vital ones (Marquet and Miralles-Guasch, 2015). This may have positive effect on both physical and mental health (Marquet and Miralles-Guasch, 2015). Finally, Mehta identified sitting space as one of the most important neighbourhood characteristics to retain people and support social behaviour (Mehta, 2009). Despite these interconnections, relatively few studies focused on both built and social environments in relation to older adult mobility (Hanson et al., 2012).

1.3. Guiding framework and objectives

While social and health scientists seek to isolate variables to understand their impacts and how they factor into complex systems, urban theorists similarly considered built and social environment interconnections. Notably, the seminal work of Jane Jacobs speaks to multiple factors that comprise neighbourhood environments: "a city ecosystem is composed of physical-economic-*ethical* [author's italics] processes active at a given time within a city and its close dependencies" (Jacobs, 1961). Human experience is both an influencer and influenced by city ecosystems. Jacobs contends that higher density, pedestrian oriented mixed-used developments are features of a 'good' or successful neighbourhoods (White, 2014). Jacobs wrote this in response to mid-20th century modernist planning principles. However, as we consider the importance of creating environments that enable mobility in the 21st century, some of Jacobs' key concepts are more relevant than ever. Still, a reliance on objective measurement tools such as environmental audits, or cross-sectional survey data, dominate the built environment literature (Cain et al., 2014; Cerin et al., 2014; King, 2008); a focus that does not adequately capture the complex influences that shape human behaviour in urban environments.

Thus, we situate our research within a social-ecological framework that acknowledges the interplay of individual, societal, and built environment factors that influence health (Annear et al., 2014; Haggis et al., 2013; Stokols, 1996; Van Cauwenberg et al., 2014). We conceptualize social environment as per L.H. McNeill: "interpersonal relationships (e.g. social support and social networks), social inequalities (e.g. socioeconomic position and income in equality, and racial, gender, or age discrimination), and neighbourhood and community characteristics (e.g., social cohesion and social capital)" (McNeill et al., 2006). We draw on social constructivist theory to interpret meaning from how social interactions, rooted in neighbourhood 'places', impact older adult participants.

Our study objectives are to explore: (i) how a specific microscale feature of the built environment (benches) influence older adults' experiences of mobility and well-being, from the perspective of older adults, and (ii) how these experiences both affect and are affected by the social environment of their neighbourhood.

2. Data collection and methods

2.1. Context

This study draws on qualitative data from a subset of participants recruited via a larger mixed-methods project Active Streets, Active People (ASAP). ASAP focused on the mobility and social interactions of 192 community-dwelling older adults in Vancouver's urban core. We include participants who reside in one of three adjacent neighbourhoods Vancouver's West End, Yaletown and Downtown (Fig. 1), that are home to approximately 100,000 people, about 16% of whom are aged 60 years and older (City of Vancouver (2013)). University of British Columbia Behavioural Research Ethics Board (H12-00593) and Simon Fraser University Research Ethics Board (2012s0435) granted ethics approval for this study.

Walk Score® (www.walkscore.com) is a publicly available tool that generates a score based on distance to nearby amenities, intersection density and block length (Cole et al., 2015). Using this tool, our study area was rated one of Canada's most walkable areas (Walk Scores® of 94–97/100; (Walk Score®, 2014). Since highly walkable neighbourhoods are more 'unusual than usual' in North America, this context provided a unique opportunity to study the influence of living in a "Walker's Paradise" (Walk Score®, 2014) on older adult mobility.

2.2. Data

2.2.1. Quantitative assessment

The larger ASAP project fitted participants with tri-axial accelerometers (ActiGraph GT3Xþ, ActiGraph LLC, Pensacola, FL, USA) that they wore as per standard protocol for 7 days. We report physical activity as step counts/day (mean).