## ARTICLE IN PRESS



Contents lists available at ScienceDirect

Journal of Transport & Health



journal homepage: www.elsevier.com/locate/jth

# Identifying, creating, and testing urban planning measures for transport walking: Findings from the australian national liveability study

Hannah Badland <sup>a</sup>, Suzanne Mavoa <sup>a,\*</sup>, Claire Boulangé <sup>a</sup>, Serryn Eagleson <sup>b</sup>, Lucy Gunn <sup>b</sup>, Joshua Stewart <sup>c</sup>, Stephanie David <sup>a</sup>, Billie Giles-Corti <sup>a</sup>

<sup>a</sup> McCaughey VicHealth Community Wellbeing Unit, Centre for Health Equity, The University of Melbourne, Victoria, Australia

<sup>b</sup> Faculty of Architecture, Building, and Planning, The University of Melbourne, Victoria, Australia

<sup>c</sup> Victorian Department of Economic Development, Jobs, Transport, and Resources, Victoria, Australia

#### ARTICLE INFO

Keywords: Geographic information system Health Neighbourhood Policy Spatial

#### ABSTRACT

A vast body of research demonstrates that living in 'more walkable' neighbourhoods is associated with increased walking, and in turn, positively impacts selected health behaviours and outcomes. Yet, walkable neighbourhoods are not always delivered. The aims of this study were to identify Australian urban planning policies designed to foster 'walkability', and to test measures based on these policies with transport walking behaviours in adults. Overall, 14 Australian state level urban planning policies related to walking were identified. Spatial measures were developed based on these urban planning policies, and linked with geocoded population survey data. Associations between the urban planning spatial measures and neighbourhood transport walking behaviours were tested in a sample of urban adults (n = 16,890). The odds of transport walking were significantly higher for those living in 'more walkable' (compared with less walkable) neighbourhoods; i.e. with more connected street networks, higher residential densities, more destinations available, and shorter block sizes and distances to activity centres. Our findings showed that all 14 policies implemented in GIS were independently associated with walking in the residential neighbourhood. The associations observed tended to be stronger than previously shown, especially in regard to the dwelling density and daily destination measures. Our findings support the calls for more research using policy-relevant measures in order to better inform urban planning guidance, and suggests that if current spatially derived urban policies were implemented, it may increase transport walking. This research has the potential to contribute to building consensus for urban planning policies related to walking.

© 2016 Elsevier Ltd. All rights reserved.

#### 1. Introduction

A vast body of research demonstrates that living in 'more walkable' neighbourhoods is associated with increased walking, and in turn, positively impacts physical activity and, in some studies, body size (Frank et al., 2006; Papas et al., 2007; Ding and Gebel, 2012). Typically, those living in neighbourhoods with well-connected street networks, a wide range of local destinations, and higher residential densities are more likely to walk, especially for transport purposes, and are less likely to be overweight or obese (Badland and Schofield, 2005; Christian et al., 2011; Witten et al., 2012). These 'walkable' environments also generally have infrastructure that fosters walking (e.g. provision of footpaths and access to public transport). While the concept of walkable neighbourhoods is widely accepted, it should be noted that there are studies with null or equivocal findings and there is some debate over what constitutes a walkable neighbourhood (Townshend et al., 2014).

However, despite the rhetoric, walkable neighbourhoods are not always delivered (Hooper et al., 2015). Notably, transport-walking prevalence levels are also low in many developed countries. For example, within Victoria, Australia, 2009 travel data showed only 4% of journey to work trips and 12% of non-work trips were undertaken by walking (Garrad, 2009). Providing more walkable neighbourhoods by incorporating accessible and proximate local destinations may be one mechanism to increase local walking.

\* Correspondence to: McCaughey VicHealth Community Wellbeing Unit, Level 5, 207 Bouverie Street, Parkville, VIC 3010, Australia. *E-mail address:* suzanne.mavoa@unimelb.edu.au (S. Mavoa).

http://dx.doi.org/10.1016/j.jth.2016.08.010 2214-1405/© 2016 Elsevier Ltd. All rights reserved.

Please cite this article as: Badland, H., et al., Identifying, creating, and testing urban planning measures for transport walking: Findings from the australian national liveability study. Journal of Transport & Health (2016), http://dx.doi.org/10.1016/j.jth.2016.08.010

### ARTICLE IN PRESS

#### H. Badland et al. / Journal of Transport & Health ■ (■■■) ■■■–■■■

This study sought to identify Australian urban planning policies designed to foster 'walkability', and to test measures based on these policies with transport walking behaviours in adults. It forms part of The Australian Prevention Partnership Centre-funded National Liveability Study, which aims to identify and recommend potential spatial measures of urban planning policies for selected 'liveability' domains associated with a range of health behaviours and outcomes. The wider study was conceptualised through the social determinants of health that create the underlying conditions for health and wellbeing, and includes the following liveability domains: alcohol, food, public open space, transport, and walkability. Spatial measures for each domain are being validated against health and wellbeing data, and once confirmed, will be available for use by urban planners and policy makers to guide the creation of, and monitor progress towards, more health-promoting, liveable, and equitable urban environments.

This current study seeks to further inform urban planning policies related to transport walking by: 1) identifying spatial walking-related urban planning policies used in selected Australian states and territories; 2) creating spatial measures based on these policies; and 3) examining which, if any, are associated with transport walking in an urban context (Melbourne, Australia). Together, this will identify policy-relevant urban planning spatial measures that are most strongly related to transport walking. It will allow us to: recommend a suite of 'walkability' urban planning measures associated with transport walking that could inform future urban planning policies; and create a set of transport walking indicators that allow the spatial distribution of these measures to be assessed within and between Australian cities.

#### 2. Methods

This study was conducted as a three-phase process. Phase One reviewed state-level Australian urban planning spatial policies related to walking. Phase Two developed measures based on the spatial urban planning policies identified in Phase One (Part A). These measures were generated in a geographic information system (GIS) and were linked with geocoded population survey data (Part B). Phase Three tested the associations between the urban planning spatial measures and transport walking behaviours in a sample of urban adults. The three phases are described in the following sections.

#### 2.1. Context: Metropolitan Melbourne

The study was conducted in Metropolitan Melbourne where more walkable neighbourhoods tend to be located in the central business district, inner suburbs, and along major train lines. Fig. 1 illustrates the layout of high and low walkable neighbourhoods and is based on previous work (Giles-Corti et al., 2014).

#### 2.2. Phase one: Australian urban planning policy review

A total of 40 state-level documents (including plans, legislation, and high level strategic documents) that were likely to contain current urban planning policies and related to the support of walking behaviours were identified for the Australian Capital Territory (ACT Government, 2008, 2011; Environment and Planning Directorate, 2012; Justice and Community Safety Directorate, 2014; National Capital Authority and Authority, 2005; Department of Urban Services and Services, 2014; Environment and Planning Directorate and Directorate, 2012), New South Wales (City of Sydney, 2004; Department of Urban Affairs and Planning and Planning, 2001; New South Wales Government, 2011, 2014; New South Wales Government and Government, 2014; Infrastructure New South Wales and Wales, 2012; Department of Planning & Environment and Environmen, 2013; Small Business NSW Commissioner, 2013; The Roads and Traffic Authority, 2005), Queensland (Department of State Development Infrastructure and Planning and Planning, 2014; Department of Housing Local Government and Planning and Planning, 1997; Queensland Government, 2015; Ltd, 2011; Queensland Department of Transport and Transport, 1997), Victoria (Environment Land Water and Planning and Planning, 2014; Department of Sustainability and Environment, S.G. o.V., 2005; State Government Victoria and Department of Transport, 2014; Growth Areas Authority and Authority, 2012; Department of Sustainability and Environment, S.G.o.V., 2004), and Western Australia (Western Australia Planning Commission and Department for Planning and Infrastructure et al., 2007; Department of Planning and Western Australia Planning Commission and Planning, 2014; Western Australia Planning Commission and Commission, 2013) (the states and territory participating in the larger National Liveability



Fig. 1. a) High walkable Melbourne neighbourhood, b) low walkable Melbourne neighbourhood.

Please cite this article as: Badland, H., et al., Identifying, creating, and testing urban planning measures for transport walking: Findings from the australian national liveability study. Journal of Transport & Health (2016), http://dx.doi.org/10.1016/j.jth.2016.08.010

Download English Version:

# https://daneshyari.com/en/article/5117844

Download Persian Version:

https://daneshyari.com/article/5117844

Daneshyari.com