

**Locality, neighbourhood and health: a
literature review**

Simon Pemberton and Rachel Humphris

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Locality, neighbourhood and health: a literature review

Simon Pemberton and Rachel Humphris

Highlights

- Who you are and where you live are associated with health behaviours and outcomes (see Cummins et al., 2007).
- On average, those who are socioeconomically disadvantaged or live in deprived neighbourhoods experience higher levels of disease and die earlier compared with those more advantaged (Do and Finch, 2008).
- Neighbourhood research on health has centred on a 'context' and 'composition' dichotomy. This involves a consideration of the degree to which spatial variations in health outcomes are informed by the people who live in the areas or by the places themselves (MacIntyre et al., 2002).
- Three types of explanation for geographical variations in health have been developed in the context of the neighbourhood: compositional, contextual, and collective (MacIntyre et al., 2002).
- With reference to contextual effects, negative neighbourhood factors such as violence, noise, traffic, litter, low socioeconomic status and poor air quality increase the risk of poor health (Kim et al., 2013).
- In terms of collective effects, the relationship between social capital and health has generated considerable debate (Altschuler et al., 2004). Social capital varies from place to place and may explain variations in health (Nogueira, 2009).
- The protective effects of particular cultures have frequently been reported as outweighing the impact of neighbourhood deprivation on the health of older people.
- The 'ethnic density' effect is important in highlighting how positive health outcomes for ethnic minorities may be attributed to the buffering effect that enhanced social cohesion, mutual social support and a strong sense of community provide against the direct or indirect consequences of discrimination and racial harassment (Bécares et al., 2009).
- Despite an increased focus on neighbourhood effects and health, a number of other factors may be important in shaping the outcomes of research. These include issues concerned with boundary drawing; the selection of participants; the extent to which a relational / dynamic view of place is adopted; the adoption of a longitudinal / life-course perspective; the identification of particular area or neighbourhood characteristics; and the extent to which a variety of cross-sectional and observational research designs are combined (O'Campo 2015; Truong 2006; Diez Roux, 2001).
- A multi-scalar approach is required to highlight how 'beyond neighbourhood' policies and interventions may interact with neighbourhood factors to reinforce health inequalities.
- Policy interventions have focused on improving or addressing neighbourhood contextual factors, for example by the development of neighbourhood-level health care resources and social capital. However, there is also a need to consider the underlying factors that shape neighbourhood resources that structure health outcomes (Chum, 2011).

Gaps

- To date, little attention has focused on the importance of the 'superdiverse' neighbourhood and the extent to which the differing features of such areas may impinge on health and

wellbeing. At best, most work has taken an ethno-cultural focus to locality, neighbourhood and health.

- The work of Bernard et al. (2007) can be extended to explore how access to health and welfare services in superdiverse neighbourhoods may be shaped through a number of intersecting 'rules of access' that inform the production of neighbourhood domains, and through which residents in superdiverse areas do or do not acquire resources for health and wellbeing in everyday life.
- There is a need to consider the importance of immigration status on shaping neighbourhood effects in superdiverse areas.
- In relation to 'ethnic density', there is a need to explore how superdiverse neighbourhoods act positively or detrimentally on health, and the extent to which residents are accessing services without fear of racial discrimination.
- Methodologically, there is a need to incorporate life-course concepts, as well as a focus on neighbourhood temporal change, residential mobility and spatial scale in the context of superdiverse neighbourhoods. This would help to identify *when* in life superdiverse neighbourhoods matter most for health and health inequalities (see Osypuk, 2013).

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Introduction

Traditionally, the study of place in public health, epidemiology, medical geography and medical sociology has been neglected. However, over time there has been increasing recognition of the importance of place in shaping health (Tunstall et al., 2004). Indeed, research into whether neighbourhoods affect individual health behaviours and outcomes has become increasingly prominent over the last 20 years (O'Campo et al., 2015). In part, this reflects the recent interest in health inequalities research in social networks and social capital in communities (Tunstall, 2005).

Many studies have emphasized the socio-economic position of the neighbourhood as being most important (Kawachi and Berkman, 2003). However, while structural disadvantage is crucial in determining health outcomes, there is also a need to consider the range of neighbourhood-level determinants of health outcomes (Tunstall, 2005). As such, growing geographical inequalities in health between deprived and non-deprived neighbourhoods cannot be wholly explained by differences in the characteristics of individuals living in such neighbourhoods (Pearce et al., 2007).

A considerable number of cross-sectional and (more recently) longitudinal studies have linked area characteristics to a range of health behaviours and outcomes, such as distress and anxiety, depression, disease, substance abuse, obesity and lack of physical activity, partner violence, perinatal outcomes and poor self-rated health and chronic conditions (O'Campo et al., 2015: 65). Many of these studies have been conducted in dense metropolitan areas and have gravitated towards analyses of economically deprived neighbourhoods within metropolitan centres (Sooman and MacIntyre, 1995). Very few studies have been undertaken outside high-income countries to explore the links between the effects of the neighbourhood on health, although research by Montgomery and Hewett (2005) in low-income countries indicated that household living standards, rather than the neighbourhood, might be more important.

Fundamentally, neighbourhood research on health has centred on a 'context' and 'composition' dichotomy. This involves a consideration of the degree to which spatial variations in health outcomes are informed by the people who live in the areas (i.e. individual or composition effects, and labelled as the 'Behavioural Model'; Aday and Andersen, 1974) or by the places themselves (i.e. area or context effects; for example, see Macintyre et al., 2002).

In terms of the behavioural model, this identifies that access to and utilization of health services may be influenced by three different types of determinants – i) *predisposing* (those characteristics that exist prior to the occurrence of illness and which explain why some individuals have a propensity to use services more than others - e.g., age, sex, marital status, education, occupation); ii) *enabling* (the means by which people use health services - e.g., income, health insurance, cost of health services, place of residence, supply of health services); and iii) *need*, which corresponds to an individual's current health status (Law et al., 2005: 368).

The most prevalent scholarly work with reference to the behavioural model has been concerned with explaining the relationship between self-reported health (SRH) and socio-economic position (SEP). For example, Badland et al. (2013) found from a study across 200 neighbourhoods in Brisbane that

those who lived in the most disadvantaged neighbourhoods were more likely to report poor SRH than those living in the least disadvantaged neighbourhoods. Collins et al. (2009) found similar results across nine neighbourhoods in Vancouver. The strongest predictors of poor health status were employment status, Body Mass Index (BMI), neighbourhood satisfaction and age.

However, such explanations have not provided a full understanding of health disparities at the neighbourhood level (Choi 2009, p.1262). As a result, there has been a growing interest in how neighbourhood-level contextual factors interact with individual characteristics. Indeed, there have been calls for a new (more dynamic) approach that considers the inter-relationships between 'context' and 'composition' to understand how 'people create places, and places create people' (MacIntyre and Ellway, 2007).

Notwithstanding this, the situation is rather complex: the literature suggests that there appear to be some area effects on some health outcomes, in some population groups, and in some types of areas (MacIntyre et al. 2002: 128). Moreover, recent work on multi-level modelling highlights that the strength of associations between contextual factors and health outcomes is stronger than previously thought (Bilger and Carrieri, 2013). However, it differs by the scale of administrative units applied (Giles-Corti et al., 2006), the health outcomes examined and measures of area-level exposure (Do et al. 2013). In addition, MacIntyre (2007) identified that having a low SEP and living in a deprived area may expose individuals to a double disadvantage.

'Place effects', neighbourhood and health

There was previous scepticism about neighbourhood effects (Mayer and Jencks 1989). However, over time three types of explanation for geographical variations in health have been developed in the context of the neighbourhood: compositional, contextual, and collective (MacIntyre et al., 2002). *Compositional* explanations focus on the characteristics of individuals concentrated in particular places. *Contextual* explanations, on the other hand, refer to opportunity structures in the local physical and social environment, such as healthy environments, good housing, the availability of health and social services and the socio-economic environment (for example, employment opportunities). *Collective* explanations draw our attention to socio-cultural and historical features of communities (MacIntyre et al., 2002).

With reference to contextual effects, research has shown that negative neighborhood factors such as violence, noise, traffic, litter, low neighbourhood socioeconomic status, and poor air quality increase the risk of poor health (Kim et al., 2013). The quality and aesthetics of housing and neighbourhoods can also influence mental wellbeing (Bond et al., 2012). It has also been reported how changing opportunity structures in a neighbourhood may play a key role in reducing individuals' feelings of hopelessness (Mair et al., 2012). In addition, there is a rich literature on the neighbourhood stress process, given the role of stressors such as social disorder, concentrated and cumulative poverty, and crime and incivilities in determining poor mental health. There has also been an interest in how green space and walkability, as well as strong social ties and support, can elevate mental health or even act to counter the negative impact of stressors (see Stockdale et al. 2007).

Other studies of contextual factors have shown that the availability of supermarkets and food stores on the one hand, and a lack of fitness facilities on the other, may be associated with levels of obesity

(Black et al., 2010). Living in both poor and affluent neighbourhoods can increase the risk of drinking and drug use; whilst the availability of alcohol may be more concentrated in more deprived neighbourhoods; consumption is often greater in less deprived neighbourhoods (Pollack et al., 2005). In relation to smoking, physical neighbourhood stressors are related to smoking and may contribute substantially to neighbourhood inequalities in smoking over and above individual level characteristics (van Lenthe and Mackenbach, 2006).

The degree to which individuals have either positive or negative perceptions of the neighbourhood and how this shapes health has also been explored in various contexts, and especially disadvantaged communities. Unfavourable neighbourhood perceptions by low socio-economic groups can partly reflect their residence in less aesthetic and less safe neighbourhoods, and partly their perceptions of low social neighbourhood cohesion and adverse psychosocial circumstances (Kamphuis et al., 2010).

‘Collective functioning and practices’, on the other hand, refer to the socio-cultural and historical features of communities, including norms, values, community support networks, social cohesion and participation, and social capital – including the importance of ‘bonding’ (attachment to neighbourhood), ‘bridging’ (contact amongst friends) and ‘linking’ social capital (Murayama et al. 2015).

The relationship between social capital and health has generated considerable debate (Altschuler et al., 2004). It has been reported how social capital varies from place to place and that such variations are relevant for explaining variations in health (Nogueira, 2009). But living in an advantaged area does not automatically guarantee access to potentially beneficial social networks (Yung-Browne et al., 2013). Given this complexity there have been calls for more nuanced measures of social capital and a critical appraisal of the mechanisms linking social capital and health (Moore et al., 2011; Ziersch et al., 2005). This is because personal socio-economic disadvantage may be equally – if not more – important in shaping health outcomes (Stafford et al., 2008).

Theoretically, in the context of place and social capital, Bourdieu’s work is frequently drawn upon to consider relationships between neighbourhood social capital forms (social support, social leverage, informal social control, and neighbourhood organization participation) and adult health behaviours (smoking, binge drinking) and perceived health, as well as interactions between neighbourhood social capital and individuals’ access to such social capital (Carpiano, 2007).

Finally, recent research has found that the correlation between neighbourhoods and health may develop via selective residential mobility rather than causal neighbourhood effects (Jokela, 2014). This is subject to continued debate (Reijneveld, 2001; Rollings et al., 2015).

Empirical evidence: Health and the neighbourhood – the importance of age, gender and ethnicity

Studies have explored the specific impacts of the neighbourhood on particular groups, and are both qualitative and quantitative in nature, although the majority are more quantitative and often involve some type of (cross-sectional / national) large-scale survey. Furthermore, whilst age, gender and ethnicity are discussed separately below, they may intersect at different times and in different ways.

Age and gender

A concern with different features of the neighbourhood environment and active ageing is a common theme in the literature – for example, several studies have explored how aspects of the built environment such as local shopping and services, traffic and pedestrian infrastructure, neighbourhood attractiveness (i.e. cleanliness, peacefulness, opportunities for exercise and social interaction), and public transportation can influence activity among older adults (Day, 2008; Michael et al., 2006).

Mixed messages emerge in respect of the importance of neighbourhood deprivation and the health of older people. For example, Diez Roux et al. (2004) note how neighbourhood disadvantage is related to rates of cardiovascular death in elderly white adults, and Pascual et al. (2013) report a link between the physical inactivity of older (but not younger) adults and neighbourhood deprivation in Spain. However, a lack of association between area-level deprivation and mental wellbeing in older people has been identified in other contexts (for example, see the work of Gale et al. (2011) in the UK).

The protective effects of particular cultures have frequently been reported as outweighing the impact of neighbourhood deprivation on the health of older people. For example, strong social support and a lower prevalence of smoking, drinking, and recreational drug use has been reported for older Mexican Americans living in ‘barrios’ (Eschbach et al. 2004). However, this may not be true for mental health (Lee, 2009).

For younger age groups, Schmidt et al. (2015) have highlighted how obesity in children may be related to perceptions of the attractiveness of the neighbourhood (a positive influence) and levels of social capital / neighbourhood social ties (also positive), rather than the neighbourhood's safety as perceived by parents.

With reference to gender, Kavanagh et al. (2006) identify how females may benefit more than men from higher levels of area social capital. Work by Stafford et al. (2005) focusing on gender differences in the associations between health and the neighbourhood environment in the UK found that the residential environment has a greater influence on women's health – and particularly non-work based stressors. Such findings are supported through the research of Bell et al. (2014), which found an association between neighborhood characteristics and obesity was evident for women only.

Ethnicity and race

With reference to ethnicity, the work of Bécares et al. (2013: 76-77) is particularly important as it highlights the significance of the ‘ethnic density’ effect. This hypothesises that positive health outcomes for ethnic minorities may be attributed to the buffering effect that enhanced social cohesion, mutual social support and a strong sense of community provide against the direct or indirect consequences of discrimination and racial harassment (Bécares et al., 2009). However, the majority of ethnic density studies have been conducted in the US and in the UK and findings cannot necessarily be generalized to other contexts. In this respect, Bécares et al. (2013) note how the ethnic density effect may vary among indigenous peoples, and that institutional structures and racist practices that may create existing health and socio-economic inequities in the first place (and which maintain the unequal distribution of concentrated poverty) must be addressed. Gender and the

degree of language acculturation may also shape the extent of buffering provided by ethnic density (Jimenez et al., 2015).

Research by Kim et al. (2014) has also identified how higher immigrant density is significantly more protective for poor children and those with foreign-born caretakers; conversely, it is significantly less protective for children in worse health and those with higher BMI. Co-ethnic concentration may also be associated with increased mortality but can be mediated by neighbourhood income (Bjornstrom, 2011).

The persistence of black health disadvantage in the US has been extensively studied, and recent work has considered the extent to which variation in neighbourhood context may contribute to a black / white health gap. Do et al. (2008) have noted how the contribution of neighbourhood context to the observed racial health gap varies considerably by age and gender, and that place explains a larger proportion of the racial health gap experienced in younger age groups. This is because the health of young adults is relatively robust and less likely to be influenced by individual-level factors. In addition, current neighbourhood conditions may fail to capture the life-long residential context that can result in cumulative health disadvantage, and thus are less likely to explain health differences at older ages (Do et al., 2008, p.1265).

It is also important to consider issues of temporality and neighbourhood change over time and how this may impact on health. Ford and Browning (2014) have shown how mental health and wellbeing in minority ethnic groups may change as the neighbourhoods within which they reside change. It may also vary according to ethnic group (see Mair et al., 2010). As such, those neighbourhoods with decreasing levels of violence and with improving aesthetics, safety and cohesion may be positively associated with levels of depression amongst some ethnic minority residents (also see Gary et al., 2007). In contrast, where racism exists within particular neighbourhoods, this can act as a health defeating stressor (for example, see Kwate and Goodman's (2015) study of mental health among residents of black neighbourhoods in New York City).

Methodological and theoretical considerations

Despite the increase of neighbourhood research in the area of public health, there is considerable disagreement on which measures and data sources should be used to explore the importance of neighbourhood attributes (Schaefer-McDaniel, 2010). Traditionally, multilevel epidemiological studies utilizing census data and household surveys have been used to assess neighbourhood conditions. However, they have been criticized as lacking a theoretical and methodological underpinning (O'Campo, 2003).

In recent years, neighbourhood observations have been increasingly used for characterizing neighbourhood environments. But there has been considerable variability in how observations have been conducted and analysed, making it impossible to compare findings across studies and to estimate the causal impact of neighbourhood effects (Do et al., 2013). Improving the design of such studies has therefore been seen as a particular priority, including the use of natural experiments to further our understanding of the impact of place on health (O'Campo et al., 2015: 73).

Sampling is another area that has received less attention. O'Campo et al. (2015) note how many studies start with a random sample of individuals and subsequently link residential neighbourhood data. But this may result in too few participants being focused upon, making it difficult to distinguish household or individual-level effects from broader neighbourhood effects. More emphasis on neighbourhood-based sampling may therefore be required (ibid.: 66), as well as the employment of new techniques, such as participatory photo mapping (PPM) (Cummins, 2007).

Methodologies employed in neighbourhood-level research need to be more strongly linked to a number of theoretical considerations. In particular, methods need to critically interrogate notions of place and the neighbourhood, as well as exploring the dualism between composition and context in neighbourhood-level health research.

With reference to place and the neighbourhood, few studies discuss how neighbourhoods are defined although results can be very sensitive to how neighbourhood zones are constructed. This is part of the Modifiable Areal Unit Problem (MAUP) (Sabel et al., 2013). More pertinently, Cummins et al. (2007) highlight the importance of adopting a relational perspective to place and health, and that there is a need to think of places as being dynamic and fluid, with different social meanings and importance for different people. Importantly, power relations at varying spatial scales maintain them.

In addition, individuals may move through multiple places and contexts over the life-course. Hence there is a need to move beyond conventional ideas of place that are characterized by notions of health and place that are static and territorially bounded in time and space. Indeed, most studies of area effects on health are cross sectional and so measures of place and of residents' health are collected at roughly the same time. However, such study methods may be inappropriate given that the effects of the environment on adult mortality are likely to have a particularly long time lag (MacIntyre et al., 2002: 135). For some, this has led to the development of the concept of 'activity spaces' (see Vallée et al., 2010) and / or 'healthscapes', which can be used through longitudinal studies to understand which contexts are most relevant to health, in terms of location and duration, as well as how an individual's personal characteristics mediate place and health relationships (Rainham et al., 2010: 674).

In terms of context and composition, Bernard et al.'s (2007) work is useful as it adopts a relational view of place. Using Giddens' structuration theory, they propose that neighbourhoods essentially involve the availability of, and access to, health-relevant resources in a geographically defined area. They further propose that such availability and access are regulated according to four different sets of rules: proximity, prices, rights, and informal reciprocity. These rules give rise to five domains, the physical, economic, institutional, local sociability, and community organization domains which cut across neighbourhood environments through which residents may acquire resources that shape their life-course trajectory in health and social functioning (Bernard et al., 2007).

The nature of policy interventions – a focus on structure and agency and multi-scalar influences

Much emphasis in respect of policy interventions has been around improving or addressing neighbourhood contextual factors, for example by the development of neighbourhood-level health

care resources and social capital, as well as through the mobilization of both formal and informal networks (Choi, 2009; Prentice, 2006).

It has been found that living in a well-served neighbourhood can be a significant predictor of realized access (Harrington et al., 2012). However, potential accessibility to neighbourhood-level health care resources may be reduced for linguistic minorities as well as for recent immigrant populations (Bissonnette et al., 2012).

Chum (2011) highlights the need to consider the underlying factors that shape neighbourhood resources that structure health outcomes. Indeed, addressing poverty and the inequitable distribution of socioeconomic resources by ethnicity and place is vital to improving health and reducing inequalities. Given the often racialized nature of access to goods, services, and opportunities, this also requires a strong commitment to eliminating racism (Bécares et al. 2013: 76).

Beyond this, it is suggested that policies aimed at improving neighbourhood influence on health must address the competitive and fragmented municipal structure that produces a patchwork of affluence and deprivation. There have also been various calls to address the geography of opportunity at a (broader) regional level in addition to improving deprived neighbourhoods (Osypuk and Acevedo-Garcia, 2010).

A final point of relevance has been made by Nogueira (2009) who argues that it is not possible to divorce health planning from urban planning, as well as from the promotion of social capital. This, it is suggested, is due to the fact that a sense of place, identity and belonging needs to be at the core of all healthy planning interventions.

Implications: key gaps in knowledge in the context of superdiversity, neighbourhood and health

To date, little attention has focused on the importance of the 'superdiverse' neighbourhood, and the extent to which the differing features of such areas may impinge on the health and wellbeing of those residing in such neighbourhoods. At best, most work has taken an ethno-cultural focus to the importance of locality, neighbourhood and health (for example, see Chang and Chan, 2015 in the US) rather than a focus on issues of superdiversity more broadly.

The work of Bernard et al. (2007) can be extended to explore the extent to which the availability and access to health and welfare services in superdiverse neighbourhoods may be shaped in particular ways through a number of intersecting 'rules of access' that inform the production of neighbourhood domains – physical (environment), economic, community, institutional and local sociability – through which residents in superdiverse areas do or do not acquire resources for health and wellbeing in everyday life. In so doing, a consideration can also be made of the extent to which it is worse for health to be poor in a poor superdiverse neighbourhood than poor in a wealthier superdiverse neighbourhood, as is often implied (Tunstall 2005: 132).

Phillimore (2015) has identified how immigration status has emerged as one of the most important factors in determining maternity experiences of superdiverse populations, given the way it impacts upon women's rights and entitlements and levels of agency. Hence there is a need to consider the

importance of immigration status on shaping neighbourhood influences and effects in superdiverse areas.

In relation to 'ethnic density', there is a need to explore how superdiverse neighbourhoods act positively or detrimentally on health, and the extent to which residents access services without fear of racial discrimination.

Methodologically, there is a need to incorporate life-course concepts, as well as a focus on neighbourhood temporal change, residential mobility and spatial scale in the context of superdiverse neighbourhoods. This would help to identify *when* in life superdiverse neighbourhoods matter most for health and health inequalities (see Osypuk, 2013).

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