

NEIGHBOURHOOD RESEARCH: CONCEPTUAL CONSIDERATIONS FOR POPULATION HEALTH

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ABSTRACT:

A population health approach recognizes that influences on health operate at many levels, one of which is the neighbourhoods in which people live. Neighbourhood health research is useful for guiding policy and interventions to improve population health status. There is much debate in the literature surrounding the concept of neighbourhood and there is wide variability in how neighbourhood studies are conducted. This paper argues that a population health approach can assist with clarification of the concept of neighbourhood.

Keywords: Population health; Neighbourhood; Environment

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INTRODUCTION

The past decade has seen increased research on the neighbourhood environment and its influence on health outcomes. Findings from neighbourhood health research are useful for guiding policy and intervention efforts to improve health conditions [1]. Although it has long been recognized that health operates at many levels, including the environments in which people live, work, and play [2], most health interventions continue to focus on individual-level behavior change. It has been said that improvements in health might be achieved by a greater focus on places and health [3] and in some cases, neighbourhood-based interventions are believed to be more cost-effective than individual or family-based ones [4].

Despite interest in neighbourhood and health research, there is much debate surrounding the conception of neighbourhoods [5, 6] and neighbourhoods continue to be under-conceptualized in the literature [7, 8]. Typically, the term 'neighbourhood' has been used to refer to a person's immediate residential environment, which holds both material and social characteristics potentially related to health [9]. Bentley and Kavanagh [1]

believe that neighbourhood effects on health are likely to have been underrepresented in many studies due to errors in the conceptual models underpinning many analyses. The conceptualization of how neighbourhood affects health not only provides a paradigm for thinking about neighbourhoods but also is important for the development of theory, providing a clearer picture of the pathways through which aspects of the neighbourhood may affect health outcomes [10].

Applying a population health approach

Context and setting is important for population health research, as a population health approach examines multiple levels of influence and their interactions [10, 11]. Population health is concerned with the health outcomes of a group of individuals, including the distribution of such outcomes within the group [12]. Applying principles of a population health approach to neighbourhood research would look to identify the interrelated factors and conditions that increase the risk to the population over the life course and identify possible systematic variations [12]. A population health approach can provide the basis from which health issues can be researched and for which appropriate interventions and policies can be developed. This paper aims to assist with clarification of the concept of

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neighbourhood by applying principles of a population health approach to some of the common conceptual issues surrounding the neighbourhood and health literature.

Community engagement

Typically, research investigating neighbourhood effects on health has used administrative areas as neighbourhoods [7, 13] because of data availability [14]. Use of administrative areas to define neighbourhoods poses a number of issues [7, 15]. Firstly, they represent imposed, irregular boundaries that have no meaning to the social and physical factors of neighbourhoods that are hypothesized to affect health [7, 15]. This can also lead to inconsistent boundaries since neighbourhood spatial definitions affect the areas to be observed [16] and conflicting evidence about the extent and magnitude of area effects on health [17]. A second problem is that their use does not allow identification of the specific neighbourhood features that are relevant, or of the processes by which neighbourhoods affect health. Identifying these features and these processes is key to developing interventions targeted at neighbourhood conditions [7, 15]. As well, the size and definition of the relevant geographic area may vary according to the processes and outcomes being studied [18]. The majority of earlier research using administrative data consisted of cross-sectional or longitudinal studies based on the residential addresses reported by study participants. Improving the research design of these studies by linking administrative data with other local data sources could enhance the body of evidence being generated on neighbourhood and health. For example, Li, Adab, and Cheng combined local administrative data with a range of questionnaires to examine family and neighborhood environmental correlates of overweight and related health behavior among Chinese primary school-aged children in urban areas [19].

Community engagement, which refers to involving community members in the development of interventions and research to increase relevance, effectiveness, and sustainability, is reflective of a population health approach [20, 11]. Administrative areas may not accurately reflect what individuals consider to be their neighbourhood [7]. However, engaging the community in the decision-making and planning of neighbourhood health research and being sensitive to the health care needs defined by community members themselves, can not only increase the relevance and appropriateness of the

defined neighbourhood under study, but can increase the communities' skills and control over relevant resources and information creating community empowerment, acting to promote health and equity [21].

Reciprocal determinism

Whereas the compositional explanation of neighbourhood and health attributes the geographical clustering of health outcomes to the shared characteristics of residents [22], the contextual explanation attributes neighbourhood effects on health in part to characteristics of the environment [23]. This explanation states that there exist ecological attributes of spatially defined areas that affect whole groups [22] and holds the idea of place as a unique system of health-relevant resources and social relationships embedded within geographical borders [24]. Cummins, Curtis, Diez Roux, and Macintyre [25] argue that neighbourhood research has been limited because it has tended to rely too much on rather conventional representations of space and place, instead of the outcome of dynamic social relations and power struggles between groups in society [26, 27]. In order to operationalize these 'relational' conceptions of place, it is important to move away from research designed to distinguish between contextual and compositional effects and instead concentrate on the processes and interactions occurring between people and places that may be important for health [25].

For example, despite the evidence that stress and coping intersect with the neighbourhood environment to create health inequities, these factors are rarely integrated into investigations of neighborhood factors, and often individuals are implicitly treated as either passive recipients of the environment or as free-will agents who opt into particular environments [28]. The contextual environment shapes whether experiences are perceived as stressors and thereby prompts coping responses, some of which negatively impact health [28]. A population health approach acknowledges the dynamic interplay between situational and personal factors and that interactions between levels and intrapersonal dynamics in the same environment might affect people differently, depending on a variety of personal attributes and histories [11]. This idea of reciprocal determinism posits the reciprocal relationship between humans and their environment [10] and highlights the importance of utilizing mixed method approaches in order to specify the dynamic interactions between area and individual

characteristics. For example, Somrongsong et al. used a combination of data from observations of the physical adequacy of housing, semi-structured interviews with key informants, and health record information in order to appropriately describe the effects of housing on health and health risks in an aging population in rural Thailand [29].

Health over the life course

The contextual environment is changing and dynamic. One criticism related to the concept of neighbourhoods has been the lack of consideration given to the role of population mobility and migration between places [30]. Neighbourhoods and individuals change over time and the majority of people will live in different neighbourhoods during the course of their lives. Most of the existing studies so far are cross-sectional so they do not include data at different time points or changes over time in either individuals or neighbourhoods. A cross-sectional study design makes the assumption that the current health status of individuals depends on the present neighbourhood conditions, which may lead to biased estimates of neighbourhood health effects because it ignores the fact that health and disease develop over the life course [31].

These issues of varying individual-level exposure to multiple contexts over time and space mean that current conceptualizations of neighbourhood may be underestimating the effect [25]. However, moving beyond places as “independent” units and incorporating the potential health effects of features of other nearby places remains a major challenge in research on neighbourhood and place effects [25]. All of these issues suggest that health policies that focus on contextual mechanisms would need to consider carefully what the appropriate contextual level for action might be and that contextual analyses should ideally seek to examine processes and effects operating at spatial scales other than the local neighbourhood [25].

Population health research must take advantage of process theories like life course theory [10, 20]. Applying a population health approach would look to identify the interrelated factors and conditions that increase the risk to the population over the life course. Measuring individual exposure to multiple contexts over time would help to advance the concept of neighbourhood [25]. For example, Rodriguez, Brown, and Troped [32] used GPS to demonstrate that less than half of the physical

exercise taken by monitored participants took place within their local residential neighbourhoods. Understanding the life course of individuals by charting movement over time would help to improve neighbourhood studies by more accurately characterizing exposures to different neighbourhood environment factors potentially important for health [25].

Health inequalities

Despite the evidence linking the neighbourhood environment to health outcomes, the majority of interventions aiming to improve health have focused on individual-level behavior change, such as communication and mass media campaigns. This focus on changing health behaviours may be missing out on key opportunities to affect population-level physical activity [3], and when used alone may even be increasing inequities in health [33]. Population health research takes a focus on health inequities and the upstream determinants of health status and aims to change the underlying socio-cultural and environmental conditions of risk [34].

According to Voigtländer et al. [35], a framework explaining neighbourhood health effects must fulfill two requirements. It must integrate “neighbourhood” into the discourse about social inequalities in health and it must conceptualize neighbourhood as a social system comprising different kinds of health-related resources. It is this dimension of access, and the channels through which resources can be acquired and used, that this conceptualization of neighbourhood contributes to health inequalities [22]. Unfortunately, many health researchers have lost sight of the fact that an individual’s socioeconomic position is the outcome of socially designed policies and programs and is not simply an independent variable [34].

CONCLUSION

The concept of neighbourhood for health research is challenging and complex. Many approaches to investigating neighbourhood and health currently exist in the literature. Incorporating principles of a population health approach into neighbourhood and health research can improve the relevance and clarity of the research and more meaningfully translate into intervention and policy design.

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