

HEALTH GEOGRAPHY AND ITS IMPLICATIONS

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ABSTRACT

Geography and health are linked to each other. The place where we are born, live, study, play and work, have a direct impact on our health and health experiences. The air we breathe, the food we eat, the viruses we are exposed to, and the health-services available, all give us health experiences. Health geography views health with a holistic approach which encompasses society and space. It conceptualizes the role of place, location and geography in health, well-being and disease. The social, built and natural environment affects our health and well-being in ways that are directly relevant to public health. Locating health care facilities, targeting public health strategies or monitoring disease outbreaks, all have a geographic context. Health geography seeks to explore, the social, cultural and political contexts for health within a framework of spatial organization. Health geography is the application of geographical information, perspectives, and methods to the study of health, disease and health care. The specific concern of health geography is to search a social model of health. It advocates towards redefining health that emphasizes positive health and well-being over disease and death. Health geographers are concerned with the prevalence of different diseases along a range of spatial scales, from a local to the global view. They inspect the natural world, in all its complexity, for correlations between diseases and locations. Health geographers try to probe the dynamic links between power, space, place and time at different spatial scales. By means of modern spatial analysis tools, they try to map the dispersion of health, including various diseases, as individuals spread among themselves, and across wider spaces, as they migrate. Health geography, thus focuses on geographical variations in health and healthcare, and emphasizes to promote public health and well being, in general.

Key Words: Spatial, Well-being, Disease, Global, Dispersion, Migrate

Health geography, a sub-discipline of human geography, studies the relationship between our environments and the impact of factors that operate within those environments, on human health. It explores the patterns, causes and spread of disease environmental hazards,

environmental mediators of health behaviours and the planning and provisions of health services. Although health geography is closely aligned with epidemiology, its district primary emphasis is on spatial relations and patterns. Whereas epidemiology is predicted on the biomedical model and focuses on the biology of diseases, health geography seeks to explore the social, cultural and political contexts for health within a framework of spatial organization. In thinking spatially, geographers distinguish between space and place. Space is concerned with locating where things are, while place refers to the cultural meaning of a particular setting. Spatial location, that is, the geographic context of places and the connectedness between places, plays a major role in shaping environmental risks as well as many other health effects. (Tunstall, et al, 2004). There is a growing need to understand disease, risk factors and how risks such as genetics, lifestyle, environment and occupation interact with the social, built and natural environments (Dahlgren & Whitehead, 1991). Thus, understanding geography, including the arrangement of health services and the location and nature of environmental exposures, is crucial in assessing the interrelations inherent in many health-related risk exposures. Health inequalities and polarization, scale, globalization and urbanization are directly related to public health (Asthana, Curtis & Duncan, et al, 2002). Global issues, such as, environmental change, demographic transition and the internalization of health service organization, all have geographic contexts that directly influence health policy. Global patterns in infectious diseases are linked to migration, population movement, and disease diffusion, and these processes are affected by regional and local contexts. Moreover, the growth of cities and the changing nature of the built environment has a profound effect on health and well-being. The worldwide obesity epidemic is connected to factors that influence global warming and to factors that influence the structure of local built environments, and socio-cultural shifts affecting physical activity, food availability and consumption. Concerns about social and spatial polarization, especially with socio-economic inequalities and inequities, have prompted researches in these areas. Such researches explore the determinants and consequences of health variations, including poverty, health care access and public health. Identifying persistent inequalities in health between rich and poor people as well as communities, provides evidence to support policies to address the underlying causes of health problems (Shaw, Dorling & Gordon, et.al., 2001; Marmot, 2005). Different approaches exist in conceptualizing space, place, and health, in health geography. Three broad approaches are- ecological, social and spatial.

Ecological approach focuses on humans as biological entities, recognizing that people are part of interdependent ecological systems. *Social approach* considers the ways in which human health and well-being are influenced by social, rather than biological factors. *Spatial approach* emphasizes the spatial analytical techniques that explicitly investigate the importance of spatial attributes, as location and connectivity.

Traditionally, research in health geography spans two distinct avenues, the pattern causes and spread of disease, and the planning and provision of health services. Research in these interlinked areas supports policy development. Methodologically health geographers adopt a coherent set of procedures and rules to investigate a phenomenon. Methods ranging from statistical studies using quantitative indicators of health and health determinants to qualitative techniques, including unstructured interviews or ethnographic observations, are used. The role of place and space in health is a common theme for both methodologies. Quantitative data collection methods have been used to examine geographies of disease (both infections and chronic), the food-obesity built environment (Cummins, et al, 2017) walkability (Dean, et al, 2020), green spaces (Richardson, et al, 2013), and access to health care services by way of multilevel modelling and spatial analysis (Kanaroglou & Delmelle, 2016) Geographical Information Systems (GIS) mapping, personal activity, devices/ trackers with an emphasis on marginalized populations in particular geographical locations, are in practice. A geographic information system is a computerized system for collecting, storing, representing and manipulating spatial data, and such systems are increasingly being used to interrogate and analyze health related information to investigate health outcomes and health care provision (Pearce, 2007). Geographic information systems support public health in diverse ways, including mapping, monitoring, and modelling infectious and chronic diseases, disease surveillance and outbreak detection, emergency preparedness, and targeting interventions and health promotion initiatives. Qualitative methods have been used by health geographers to explore the relationship between the environment and health (Fenton & Baxter, 2016), including therapeutic landscapes, environmental health, disability studies, health outcomes in indigenous populations (Richmond & Big-Canoe, 2018), newcomers, children and aging population. Mixed methods, combining qualitative and quantitative research, have been utilized by geographers to explore the relationship between the environment, human health, and health and social services. Although health geographers after use traditional-epidemiological approaches, in both study design and statistical analysis, the discipline also makes use of distinct analytical tools, including geographic information system methods for integrating, mapping and analyzing data and spatial analysis statistical techniques, including clustering and spatial interpolation methods. Geographical research concerns processes operating in time, as well as space, linking health over the life course with processes of human migration, environmental change, and duration of exposures to different environmental risk factors. Geography considers 'health' broadly defined as physical or mental health, well-being, and health related practices, and addresses a range of different substantive issues. These include spatial epidemiological questions of how and why human health varies from one area to another at the ecological (aggregated population) level. Geography also examines how individual health outcomes and health-related practices relate

to one's varying experience of (and exposure to) physical and social environments. Also, it investigates why space and place are important for health variation in the population.

Health geography recognizes the importance of context, setting and spatial scale-from global to local - in determining health outcomes. Health geographers have made important contributions to public health by emphasizing the reciprocal relationship between place and human health. They have acknowledged that contextual, compositional and collective aspects of place, together influence population health in a much more relational than unilateral way (Andrews, et. al., 2012; Macintyre et. al., 2002) An approach towards public health aims at improving the health of the population and reducing inequalities in health among population groups. A wider range of factors and conditions responsible for the health status, needs consideration. Factors, such as, behaviour, biology, and access to and quality of healthcare only determine about half of an individual's health outcomes. The other half of these outcomes are determined by the conditions in which people are born, grow, work, live and age. These conditions are known as the social determinants of health and include factors, such as, income, education, working, conditions, race, gender and culture. World wide, there exists historical, persistent and emerging health inequities. The term inequity (or health disparity) is used to: "*describe those health inequities, though avoidable, are not avoided and hence are unfair.*" (Marmot & Allen, 2014). Individual and social determinants both, directly impact such inequities. There exists a difference between inequity and inequality as described by Global Health, Europe (2009). "*Inequity refers to unfair, avoidable differences arising from poor governance, corruption or cultural exclusion while inequality simply refers to the uneven distribution of health or health resources as a result of genetic or other factors or the lack of resources.*" Research on the role of discrimination in shaping health and health inequities has focused attention on ethnicity, homelessness, disability, nomad populations, sexual orientation, and gender, by way of social, cultural, physical, and economic environments (Pearce, 2012). Health geographers are curious about understanding the spaces, and places that influence our health. Furthermore, health geography's focus on examining the processes and relationships across time and space is valuable to public health, which always considers historical trends, emerging threats, and working at multiple scales. The political ecology of health and disease has guided health geographers to expand their understanding of health and disease by focusing on interactions between social institutions, political interests, and human-environment interactions (Mayer,1996). Political ecologies of health and ill-health have applied mixed research methods and multi-scalar analysis across time and space (king, 2010) Thus, human health and culture shapes interactions with the environment that impacts cultural practices and health processes.

Health geography has significantly contributed to the field of public health. The field of public health focuses on the promotion and protection of health and includes the

prevention of both chronic and infectious diseases. An organized effort to plan, develop, implement, and evaluate programs, services and policies to promote healthy environments to support and enable health, is in interest of public health. Health is determined by social, structural and commercial factors among populations. The *social determinants* of health refer to specific factors outside the healthcare system that influence the health of individuals and populations and reflect one's location in society by way of income and social status, race, gender, education and literacy, employment status, and working conditions. Social determinants vary between individuals and populations, where having higher levels of income leads to better health outcomes and lower levels of income are associated with poorer health outcomes. This social gradient influences food, housing, education, health services etc to produce better or worse health outcomes. *Structural determinants* of health are social and political structures, as, racism classism, and gender oppression, that result in discriminatory policies and practices which limits the socio-economic and physical mobility and well-being of marginalized populations. Structure has also been examined as a fundamental cause of health inequity in the field of public health, as a complex layer of interrelated and interacting caused embodied by the individual. (Crammond & Carey, 2017). The *commercial determinants* of health are defined as "*strategies and approaches used by the private sector to promote products and choices that are detrimental to health*" (Kickbusch, et. al, 2016). Marketing, lobbying, corporate social responsibility strategies, and extensive supply chains are channels that are driven by the internationalization of trade and capital, the demand for growth, and the expanding outreach of corporations. These channels impact corporate reach and boost the health impacts related to corporate enterprise, specifically in the area of alcohol, sugar-sweetened beverages, and tobacco sales. There are some notable challenges associated with measuring the impact of social, structural and behavioral determinants of health on populations, including that they are complex, multifaceted pathways with factors that are not linear, and may be impacted by variables, such as, epigenetics and genetic factors, that health-effects manifest over long periods and are hard to track, and that, it is difficult to access information across sectors, as education, health services, planning, housing etc (Braveman & Gottlieb, 2014).

Health geographers have made much important contributions to public health scholarship on the reciprocal relationship between place and human health. Health geography recognized the need to explore health in the context of local environment in which social process, health and disease occur. The perspective of population health emerged by the end of 20th century. Health geographers took interest in studying the ways in which the environment and its conditions operate to impact public health. A shift towards focused efforts on public health initiative in health geography, has identified health and place as critically important for engagement between health geography and public health (Dummer, 2008). Health and place have been expressed through the link between its quality and

relationship to health behaviours to inform the development of new public health interventions, urban planning initiatives, and community development. Specifically, health geographers have used population health surveillance by collecting and analyzing health data, health promotion by empowering individuals and communities, and injury and illness prevention through risk reduction efforts, in turn, developing health promotion and protection interventions (Andrews, et al., 2012). The work of health geographers, thus, continues to inform the development of recommendations for public health practice and policy development. Researches on the relationship between individual behaviours and features of the built, social, and policy environment at the local level, examine immigrant well-being, child and older adult mobility, urban agriculture, overall walkability, school nutrition policy, therapeutic landscapes, overweight and obesity and the like. Implications of many of these studies include multi-component public health interventions to implement within these environments, in order to support health behaviours or advocate for broader structural changes. Health geographers are well positioned to undertake public health intervention researches by means of innovative methods and theories with the goal of being able to connect the complexity of relationships between health, interventions, and place (Harrington, et. al., 2016). The knowledge integration across scales and disciplines necessary to address the impending public health challenges are handled by health geographers, with full potential. An increasing recognition of systems complexities in public health crises and syndemics, makes the role of health geographers more important in promoting understanding and action plan on the policy and practice dimension of individual, community, and institutional resilience. Talking about current developments in health geography, there seems to be a stronger focus on health inequalities, the impact of spatial and social marginalization on health, and more explicit exploration of the nature of health change. Spatial relations are seen as dynamic, and health variation is supposed to be a consequence of individual mobility, population movement, and migration. Geographic information systems are being more closely aligned with global positioning systems to monitor the movement of people in real time, to contextualize the interrelations between the physical and built environments, people's daily routines and their health. However, there are both technical and ethical challenges in improving these systems.

Conclusion

How the human health and health system are diffused, distributed, determined and delivered is the area of focus, of health geography. Health geographers use a spatial lens to examine these factors across a range of scales. The importance of context, setting and spatial scale-from global to local - in determining health outcomes is recognized by them. The study of health inequalities, has been a cornerstone of health geography for many decades. Places

are dynamic and interdependent entities whose health outcomes are produced through the interaction of constantly evolving processes operating at both micro and macro scales. Although a relational perspective of place, broadens the interface of health research, there is the need for health geographers to critically reflect on the appropriate and most feasible scale of research on health and health inequalities. Health geographers must also be wary of what the most appropriate level of policy action should be, to ensure about the relevance of the research context in health geography. A multi-disciplinary approach is crucial to ensure that, research provides relevant, high-quality evidence to inform health policy.

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