Hypothesis: The Research Page

Integrating population health into social ecology
Role of family medicine researchers

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With the debates on health care in Canada and the creation of the Canadian Institutes of Health Research (CIHR), a new field called "population health" has emerged. Multidimensional integration is required to reconceptualize health around "determinants of health"[1] and to reconfigure research conducted by the CIHR in terms of the biomedical, clinical, systems and services, sociocultural, and environmental dimensions of health. Social ecology makes this integration possible.

Family physicians can help increase awareness, communication, cooperation, and change to integrate population health into a social ecology paradigm. Consequently, family medicine researchers are uniquely positioned to investigate and report on population health. This article describes the major components of population health.

Population health

Population health is the study of variations in health between societies and population subgroups. The classic work on population health is *Why are some people healthy and others not?* It was published in 1994.[1] Population health studies indicators of health as they relate to social, economic, environmental, and health care accessibility determinants.[2] It describes inequities and *gradients* of health.[3] For example, it tries to identify the health differential between various population subgroups, after taking into account all of the existing knowledge on genetic predispositions, exposure to pathogens, lifestyle, health care, the gross national product, social class, and access to services. For some, what remain are psychological and social determinants, such as relative privation, social cohesion, financial support, social capital, resilience, and social environment.[3]

Population health has a broad concept of health. It is, of course, concerned with physical health and public health, but it is also concerned with mental health and social health. Notwithstanding the priority given to eliminating disorders and psychological distress, the objective is to provide optimal functioning, good quality of life, well-being, healthy adaptation, and full development of the human and social capital of society.[4]

Population health is also innovative in its approach to unit analysis, working from individual members to the community as a whole, or to the population as a whole. It goes without saying that individuals constitute the primary unit of health, functionality, quality of life, and experience of well-being. Yet another, more collective level of health includes the health of subgroups (minorities, ethnic groups, sexes), communities (neighbourhoods, cities, regions), and functions (occupational groups, special groups, etc). Markers include strength of identity, productivity, and solidarity. Population health seeks not only to measure individual health, but also to define indicators of organizational health and community health.

Population health is also a mode of intervention that seeks to affect policies and programs rather than delivery of health care to patients in a clinical setting. Population health involves many different stakeholders working together and targeting many different participants and modalities simultaneously. It also involves a reallocation of resources to measures with greater potential for generalization.

The transformation of the Medical Research Council into the Canadian Institutes of Health Research reflects this desire to acknowledge that health has many different dimensions and draws on many different disciplines, bodies of knowledge, and approaches to knowledge, all of which need to be integrated into a coherent model. The social ecology paradigm provides just such an approach.

Social ecology

The notion of social ecology grew out of the tradition of biologic ecology. Social ecology describes how populations fit

into a physical, economical, cultural, and social environment that interacts with biologic substrata.[5]

From the early work of Lewin,[6] Barker and Schoggen,[7] and Bronfenbrenner,[8] social ecology has retained first the organization of the "environment" into systems and second the integration of interactions as a dynamic that is essential to our understanding of phenomena. At the most basic level, the *ontosystem* is made up of a person and his or her physiologic and psychological organization. People evolve in a *microsystem*, made up of family and friends. This microsystem fits into a functional world called the *mesosystem:* work, neighbourhood, and organizations. Last, all these systems fit into a social order made up of policies, public services, and a legal framework that define the *macrosystem*. These various systems influence one another. One can fully understand phenomena only when one fully understands how these various levels overlap and interact. Social ecology emphasizes the dynamics and synergy between the various factors.

Social environment refers to structural, rather than dynamic, aspects. It deals with the full spectrum of living conditions, social relationships, and contexts, from family and neighbourhood to community and institutions.[9] The social environment is a generic term that includes structure and certain social functions, such as social support and life events. The social environment relates to an individual's external framework. Interest in *social capital*, as a determinant of health and even as a generator of health, is growing. Social capital refers to the interconnectivity, diversity, and density of the social fabric.[4] It is generated through *social participation* as an exercise in solidarity and collective advocacy. Consequently, it is measured in terms of a community's sense of itself, its volunteer and charitable works, and its humanitarianism. Considered a feature of the mesosystemic social environment, social capital is seen as a moderator between adversity and health. Social capital is to population health what social support is to individual health. Population health interventions would do well, therefore, to increase their focus on the social environment and development of social capital.

For most authors, the "active principle" of the social environment is acting on the sense of coherence, control, empowerment, personal efficacy, self-esteem, secure relationships, and resilience.[1,3] This action leads to healthier behaviour, better moods and better mental health, a balanced metabolism, and fewer physical symptoms. Many authors have identified these *pathways*, which, however, have yet to be fully and convincingly demonstrated. Think of the social gains when empirical demonstrations of these pathways will influence development of programs and policies. How does one develop a research plan for social ecology on the subject of population health?

Researchers and the social ecology paradigm

Family medicine researchers are particularly well trained and sensitized to the role that the microsystem (ie, the immediate family) plays in their patients' health. They understand the importance of the psychosocial dimension of illness; they understand its effect and often its origins. Perhaps better than anyone else, they are able to understand how health problems and their treatment fit into the reality of daily life. For them, working within the social ecology paradigm would simply be a matter of applying the same dynamic to the other ecologic levels and to the five determinants of health (biology, physical environment, lifestyle, access to services, and social environment).

Family physicians are important stakeholders in the community, providing an interface with the mesosystem and promoting development of social capital on a local level. By conducting research on the interactions between the various elements and their integration into a comprehensive model for health, family medicine researchers become agents for communication, translation, and networking between researchers in the biologic sciences and researchers in the social sciences. As such, they can be powerful agents for change. They already grasp the complexity of the issues and can be vital sources of information. For this reason, their involvement in biopsychosocial research and multidisciplinary initiatives is critical and they must be encouraged at all levels.

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References

1. Evans RG, Barer ML, Marmor TR. *Why are people healthy and others not? The determinants of health of populations.* New York, NY: Aldine de Gruyter; 1994.
2. Young KT. *Population health: concepts and methods*. New York, NY: Oxford University Press; 1998.
3. Marmot M, Wilkinson RG. *Social determinants of health*. Oxford, UK: Oxford University Press; 1999.
4. Helliwell JF, editor. *La contribution du capital humain et social à une croissance économique durable et au bien-être: rapport du symposium international.* Ottawa, Ont: Human Resource Development Canada; 2001.
5. Stokols D. Establishing and maintaining health environments: toward a social ecology of health promotion. *Am Psychologist* 1992;47:6-22.
6. Lewin K. *Field theory in social science.* New York, NY: Harper; 1951.
7. Barker RG, Schoggen P. *Qualities of community life.* San Francisco, Calif: Jossey Bass; 1973.
8. Bronfenbrenner U. *The ecology of human development*. Cambridge, Mass: Harvard University Press; 1979.
9. Kaplan GA. What is the role of the social environment in understanding inequalities in health? *Ann N Y Acad Sci* 1999;896:116-9.