EDITORIAL

Shaping the future of knowledge generation: From disciplinary to transdisciplinary research in health

Mirgissa Kaba

Half a century ago, Karl Popper, the philosopher of science, argued that the progress of science depends on falsification or disproval of previous theories in line with new empirical evidence that, in turn, will help to create new theories to better explain phenomena (1). This argument depicts science as engaged in falsifying and replacing theories to better understand problems and suggest solutions. This is equally true in sciences with deductive perspectives, where there is not one and only one way to ask the right question and generate appropriate answers for the questions. Asking right question and generating right evidence to questions evolves and science provides with an 'appropriate' methodological key that, in principle helps those in the search process to get closer to the truth.

Popper further argued that: 'We are not students of some subject matter, but students of diverse problems or students of a problem with diverse faces. Problems normally do not fall in one frame but cut across boundaries of any subject matter or discipline' (2). Today, many of the phenomena and problems in health that we are trying to understand 'cut across' traditional boundaries of academic disciplines. This is about crossing disciplinary boundaries or bringing specialized knowledge, which is often contradictory or claims specific space, to better understand a problem in order to produce better solutions.

Contemporary endeavors to generate new knowledge or modify existing knowledge necessitates willingness to wear and/or benefit from a very different set of lenses. Historically, there have been different philosophical stances and foundations of knowledge generation. The early positivist ideology of objectivism has at best realized the postmodern dictum that 'truth can be constructed and reconstructed'.

In this brief note, I intend to advocate and call for a move from disciplinary to high order participatory research (interdisciplinary) to meet the health demands of the contemporary world we live in. Here, I will focus on such arguments that claim of what is known is much less than what should be known, given concerted efforts by researchers.

Research is about searching, which presupposes the fact that any one finding is yet incomplete. Problems are multifaceted, with multiple causes and subsequently with multiple outcomes. Understanding such multiple factors requires multiple comprehension approaches and tools. This undoubtedly requires different epistemological stances. Academics and research institutions, faculties and disciplines often have their disciplinary domains and established tools, which provide them with comfort. Such domains, approaches and tools have helped in generating evidence that is recognized to be specific, deep and specialized. Yet, this is just a thread in the web of problems that may have diverse faces, causes and domains. Given that disciplines invariably do not speak to each other nor benefit from each other's perspective, the problem then remains unanswered in total. Even under circumstances where different disciplines target the same issue without recognizing the potential role of other, the problem prevails and remains a challenge. For example, an epidemiologist, an oncologist, an immunologist, a sociologist and a psychologist may all individually study cervical cancer without recognizing the potential contribution each other could have, and therefore not understand the problem in its totality (multidisciplinary research). Inasmuch as each looks at cervical cancer from their respective epistemic positions, they may unveil useful evidence from their own perspective but won't provide a comprehensive understanding of the problem, compromising the effort to contain the problem, and not improving the quality of life of those in advanced stages of the disease.

In a bid for comprehensive understanding of a problem and to generate concrete evidence to address problems, research philosophy evolved from the disciplinary perspective to more comprehensive and participatory perspectives (disciplinary → multidisciplinary → interdisciplinary → transdisciplinary research). Academic and research institutions vary in the extent to which these perspectives are adopted or considered. To date, disciplinary research appears to prevail in several research undertakings, while multidisciplinary, interdisciplinary and transdisciplinary research is slowly taking shape. Health researchers are now considering collaboration with other disciplines to generate evidence that could help solve problems in their totality.

Gaining a better understanding of empirical problems, causes, effects and so on could benefit from interdisciplinary and transdisciplinary research philosophies. Both offer an opportunity for researchers from different disciplines to generate evidence through collective action to define the problem, mode of enquiry, tools, and how to bring values for collective understanding (3).Critical here is the interest and openness to: a) bridge disciplinary divides that pull one out of one's comfort zone to address a problem from different disciplinary perspectives (interdisciplinary); or b) extend the 'right to do research' to communities, groups or entities that are the focus of the study, since they are key stakeholders (transdisciplinary). The commitment to bridge boundaries and recognize the value in others depends on the extent to which researchers internalize the purpose of interdisciplinary

School of Public Health, Addis Ababa University, Addis Ababa, Ethiopia. Email: mirgissk@yahoo.com

and transdisciplinary research and outcomes. Interdisciplinary research calls to wholeheartedly accept the value of other disciplines to one's research undertaking and vice versa, so as to get much closer to the truth. Transdisciplinary research, on the other hand, goes beyond functional linkage and collaboration of disciplines to involve community, group or entities of interest in defining the research agenda and playing roles in the research process. In both cases, researchers are expected to move out of their comfort zone and away from what have hitherto been considered popular research principles.

Review of research philosophies in general and in the health sector in particular and in Ethiopia where disciplines recognize their own limitation and find complementarity from other discipline. Yet, anecdotes from reading research outcomes reveals that the use of interdisciplinary and transdisciplinary concepts in research proposals and reports is nothing more than leveraging for funding bids and to convince readers of the fact that the proposed research is in line with the scientific language of the 21st century. Critical here is the limited impact of disciplinary research on policy or industry, as well as on programs (4). In addition, the complacency of 'I can do it, I know it…' within disciplinary frame affects the research outcome which may not offer useful recommendation that could guide effort to solve problems. This may have to do with a lack of interest in getting out of one's comfort zone claiming specialty, while that may not necessarily be the case.

In the 21stcentury, with health problems getting more complex and multifaceted, funding institutions and publishers are calling for interdisciplinary and transdisciplinary approaches to generate evidence that helps to address complex health problems. Remaining within the established disciplinary tradition, procedures, tools and comfort zone needs to be challenged. More effort is needed to advocate, train and coach/mentor on interdisciplinary and transdisciplinary health research. More particularly, academic and research institutions have central responsibility to enhance the pace at which researchers adapt interdisciplinary and transdisciplinary research philosophy. The Ethiopian Journal of Health Development encourages academic/research community in public health to pay as much attention to consider inter and intra disciplinary research perspectives in research undertakings.

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