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Letter to Editor

Do We Need a New Medical Paradigm?

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To the Editor,

The editorial of Albarwani and Tanira entitled: "A call for a quite debate on the future of genetics research"[1] is thought provoking and quite attractive for further discussion and debate. The balanced view of the authors, combined with deep insight is encouraging further dialogue on the subject not only of genetic research but that of biomedical research in general. Although the authors have declared that they "have no intention to undermine the research effort on genetics or the knowledge it has accumulated", I do believe it is imperative to think outside the box and question even the seemingly unquestionable assumptions of modern biomedical practice. My aim here is to build further on the last sentence in the above article where the authors have called for extending the debate to all biomedical research fields. Probably we could elaborate more on the subject from two distinctive, yet related, aspects: the governing paradigm of biomedical research and the drivers of the research enterprise.

Genetics is just one trend of reductionism that pervades modern biomedical research and practice, preceded earlier by germ theory and is currently followed by the nanotechnology. What all these trends share in common is their positivist background with a tireless search for the materialized occult. Modern medicine, after all, has not discarded the magic fervor for hocus-pocus that will turn all ills into health.[2] While many traditional cultures believe in extra-somatic powers as causes of illnesses, modern biomedical knowledge is built on the assumption of searching for materialized intra-somatic powers that constitute the magic hex causing the illness from within.[3] These were initially germs and, then, genes. Genetic research, therefore, is just one of many trends in the paradigm of biomedical practice and research under the umbrella of positivism and empiricism.

Biomedical knowledge is being constructed through empirical research based on a positivist approach. However, it is well recognized that this approach addresses only a fractioned part of the health and illness phenomena, has many flaws and false findings, and has a wide gap between research results and clinical practice.[4-6] Despite that, the problem is thought to be merely about accumulating more knowledge, developing high-tech interventions and the application of harder measures for mitigation against such flaws and failures without realizing the vicious cycle that we get entangled within. Experimental design as the gold standard for research in the biomedical model is built to enhance the existing assumptions and beliefs of this paradigm.[7] Therefore, it is unable to see, let apart identify possible alternatives.

In addition, the currently knowledge-accumulating, intervention-focused research model may not necessarily result in improved health care systems or practices. Woolf and Johnson have studied the comparative efficacy of huge investments in technological innovations versus improving health system delivery.[8] They have concluded that technological innovations may cost more lives than it saves as they consume resources that could be used to deliver, more efficaciously, older agents to all patients. This is consistent with a view of medicine as a socio-technical system rather than being merely a technical discipline as mostly presented and practiced, implicitly or explicitly, in biomedical research.

On the other hand, the commonly portrayed view of philanthropic intentions of research practice may not reflect actual drivers of the enterprise. Kramer had identified 5 levels of goals for doing medical research: to improve CV, to derive satisfaction, to increase knowledge, to change behavior and to improve health.[9] Egoistic motives seem to far outweigh altruistic ones in most biomedical research with 'publish or perish' becoming a dogma in itself. Moreover, the above research drivers represent individual motives that are usually subordinate to the more powerful forces of institutional motives driving global research enterprise. the market, represented mostly by funding bodies and being one of the most influential drivers in this context.

The effect of such individual and institutional drivers of biomedical research are more remarkable in the so-called "developing world". As research is thought to embody "scientific wealth of nations",[10] developing countries copy research agendas and practices hoping to have a share of this wealth and help improve the health status of their populations. It imports not only methods and practices of biomedical research but also interventions that may well be deemed to failure.[11] The 10/90 gap further complicates the issue as 90% of health research expenditure in the world is spent on problems that affect 10% of the people with no apparent closure in sight.[12] Could it be that asking the questions and probing the problems differently within a new paradigm may aid closing the gap and improving health worldwide?

Probably, the first step outside this vicious cycle is to recognize and acknowledge that biomedical research and practice, as they exist, are neither optimal nor the best way to improve health of populations. Moreover, future of modern science lies in liberating scientists from the tyranny of empiricism toward a more balanced

view.[13] This requires exploring and exploiting different concepts of scientific knowledge, health and health systems. The aim here is not to halt research but re-direct it hoping that it will move forward in a socially, morally and scientifically sound way.[14] On the other hand, the misalignment of priorities could be overcome by re-considering the final goals of scientific research and practice. What is needed is a paradigm that adopts a view of medical knowledge and practice as a socio-technical discipline, and espouses an outcome-based research endeavor that is focused primarily to yield better population health, not longer CVs or higher market profits.

Nasser Hammad Al-Azri ✉
Petroleum Development Oman
Ministry of Health, Sultanate of Oman
E-mail: dralazri@gmail.com

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