

## Health Research and Clinical Practice: The present scenario

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There is mounting global crisis in health care which is multidimensional. It relates to galloping increase in the prevalence of chronic disease and astronomic escalation of health care costs. The psychological and social impact illness are downgraded or ignored. The crisis is also fueled by the dominance of halfway technologies managed by super specialists trained to treat advance stages of a disease while ignoring far less costly and far more effective preventive measures.<sup>1</sup> The primary objective of any health care professional is promotion of health, prevention of disease and prolonging lives for all populations. But in the long run we forget the goal for which we are working. A large amount of money and resources are spent on clinical research, training of clinical epidemiologists and maintenance of clinical epidemiological units worldwide. But relatively less attention is paid on ensuring translation of health care research in routine clinical practice. It is striking how little is known about the effectiveness and cost effectiveness of interventions that aim to change the practice or delivery of health care.<sup>2</sup>

Today, we talk about statistically significant outputs without questioning whether they were clinically relevant or not. We are living in an era of transition where the emerging and re-emerging diseases are crowding our thoughts. We were moving in direction of tackling non-communicable diseases while infectious diseases hit us how Research world is overwhelmed with pharmaceutical research with the vision of producing breakthrough discoveries in the field of vaccines, anti retroviral therapy, cancer medication etc. We are always focused on producing yet another stronger antibiotic while non-prescription antimicrobial use is increasing at an alarming rate worldwide. Antimicrobial resistance is shrinking the range of our drugs and has become a global public health problem. We end up blaming the political system, pharmacists and mindset of people but we do not introspect on our clinical practice. A systematic review has shown that of the non-prescription antimicrobial, 19% were purchased at a pharmacy and 81% were from friends, family, or home. Non-prescription antibiotic use

is common in many Lower and Middle Income Countries (LMICs), which accounts for 19–100% of antibiotic use outside northern Europe and North America.<sup>3</sup> Ensuring that people who truly need antibiotics have access while discouraging unnecessary use is a challenging task. We are so conserved in clinical research on human health that we tend to forget the interface between human medicine, veterinary medicine, agriculture, aquaculture, and horticulture. Although precise estimates are scarce, of the crudely estimated 100 000–200 000 tonnes of antibiotics manufactured every year, most goes to the agricultural, horticultural, and veterinary sectors which has direct effects on human health and disease. Although the transfer of antibiotic resistance plasmids from treated animals to human beings has been long suspected, findings from recent studies using whole-genome sequencing have confirmed animal-to-human transfers of resistance genes.<sup>4</sup> Thus, it is only sensible to challenge and question our preconceived notions about health and disease.

Our unsustainable behaviors and lifestyles lead to significant and well understood health threats which range from obesity, global inequalities and irreversible climate change. Ignorance is no excuse: health professionals know how to take a visible stand against global challenges to health. They can take a collective and vocal stand against health threats from cholera to tobacco to nuclear war. Many doctors rightly claim that they do not have time to address the health of the environment as they are too busy dealing with the health of their patients. Perfectly true, but it does sound a little like the person who needs to spend all their time rescuing people from the river so that they do not have time to go upstream and stop them from falling in.

Health research with evidence based clinical practice seems to be the solution for all problems.

When the movement of evidence based medicine (EBM) started we had hoped for improvement in patient oriented outcomes and clinical processes. But do we think about willingness or ability to apply evidence in practice,

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especially when it runs counter to usual practice or our expectations. We all are reluctant to be the first person to adopt new things, but we would definitely not want to be last as well. With reference to HIV/AIDS, Abraham Verghese very rightly said "The virus seemed to have saturated the population of urban gay men even as they became aware of its very existence. Safe sex maxims and warnings about no sharing needles had come too late for many. Still, the mystery of causation had been solved. Surely, the cure was just around the corner."<sup>5</sup>

In health research - new knowledge originates from having asked answerable questions. To find new and useful answers to problems that have not already been resolved, one needs to know a lot about the problem and precisely where the boundary between current knowledge and ignorance lies. Without knowing the problem, it is difficult to imagine that plausible diagnostic tests and interventions will be developed.<sup>6</sup> However, the research pond is polluted with fabrication, falsification and plagiarized reports. With increasing competing interests of researchers, pharmaceutical companies and donor agencies can we really produce scientifically correct and ethically sound inferences?

The problem is further intensified by journals which do not provide open access on the various research findings which is required for optimum decision making. Because of expensive subscription fees and complicated licensed agreements, many medical schools and higher educational institutions in Nepal are unable to subscribe many international health and medical journals.<sup>7</sup> A global information divide exists among developed and developing nations is exemplified by unequal distribution of health care research and information.<sup>8</sup> Limited information which is available to us from evidence based textbooks and systematic reviews is not put in clear perspective. How often do we pause and think about its validity in our settings? Generation of evidence based interventions and identification of gaps in local settings can only give us relevant information on what works for us. We need to "Think Globally, Work Contextually."

With special reference to Nepal, mushrooming of medical colleges is evident with more than 20 medical colleges functioning presently and many more in the pipeline. Thus, our responsibility to train and produce technically competent clinicians who can provide patient centered health care has increased by many folds. The research culture needs to be imbibed in our undergraduate and postgraduate training. Research has showed that undergraduate and postgraduate curricula in Nepal has included research component which enables our clinicians to conduct effective research and disseminate their findings to a larger audience.<sup>9</sup>

## THE WAY FORWARD

- Promotion of intellectual thought which emphasizes on interdisciplinary nature of health and disease by interlinking human health with animal and plant health.
- International collaboration and cooperation for research with individualized cultural focus on Nepalese population-patients, health care professionals and policy makers.
- Creation of systematic and common approach for conducting and disseminating research findings to produce uniform clinical practice among cadre of health care workers.
- Development of strategies which will help to actively install health research recommendations into clinical practice.
- Encourage critical appraisal and implementation of the current evidence for success of the EBM movement.
- Addressing the issue of conflicting interests by active participation of ethical boards.
- Regular update and dissemination of standard treatment and practice guidelines.

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