

Research implementation in Education and clinical practice

Every research that is conducted has certain target audiences, who directly or indirectly benefit from the research outcome. The end users of any health service research range from individual patient to family, overall population, stakeholders, industry and eventually government and policy makers.

It has been found that there is still a gap between translation of findings from a clinical research or other health service research into practice or forming an effective health policy. Consequently, patients fail to benefit optimally and health-care systems are exposed to unnecessary expenditure, resulting in significant opportunity costs.^[1] Thus, the translation of research outcome into clinical practice, policy making and further research is essential.

This concept of research translation has gained lot of interests, and it has been defined using terms such as knowledge translation, adoption, knowledge utilisation, knowledge transfer and exchange, implementation research, research utilisation, evidence-informed policy and evidence-informed health systems.^[2] All of these signify that the research outcome must be utilised to improve the clinical science and subject knowledge and also to enhance our clinical practice, thereby improving health of our people. It is pertinent that all the stakeholders and policy makers must be informed of the research evidence and its implementation for better health care of the country.

The prevalence of Homoeopathy by general population is increasing consistently worldwide, with results of systematic review showing that a significant percentage of general populations visit homoeopaths and use homoeopathic medicines.^[3] In India as well, increasing number of patients visiting homoeopathic wellness centres^[4] and private practitioners every year signifies its popularity. India is also known to have the most conducive environment for the development of Homoeopathy. With growing popularity, the human resource and infrastructure is also growing. It is encouraging to note that a number of registered homoeopathic practitioners have doubled over the last two decades.^[5] Currently, there are around 284,000 registered homoeopathic practitioners adding to health-care workforce in India. There are more than 200 undergraduate and 50 postgraduate homoeopathic medical colleges in India indicating its successful institutionalisation.

RESEARCH AND TEACHING: THE CONNECTION

Teaching and research are very closely related; students will be the researchers of tomorrow, they must learn by doing. The research aptitude in students helps them to gain knowledge beyond textbooks. We must empower students with latest advancements of research outcomes for overall learning: starting from how to read homoeopathic journals which

include different types of research papers, enabling them to appraise the information given therein and finally making the young minds to apply some of the outcomes available in the form of standard guidelines and even conducting some experiments at their college laboratories.^[6] The knowledge gained by research-led approach where students keep asking questions and seek answers through systematic investigations of practice also in a way adds to knowledge production. The critical thinking aptitude once incorporated in students can help them become good researchers of tomorrow.

The homoeopathic colleges or institutions must be supportive of the research-oriented teaching, thereby providing adequate resources to the academics pursuing research and students inclined to understand scientific aspects of Homoeopathy through experimentation. The researchers and academicians along with students must form partnerships and work together to address common goals. 'Involving students in inquiry-in research-is a way of improving their learning, motivating them more. Bringing research and teaching together is a way of enhancing the motivation of both academics and students'.^[7]

As is mandatory, the undergraduate students or PG scholars are required to undertake research projects for overall completion of the curriculum. This is the time when learning experiences are most intense, as students face the practical difficulties of conducting a research project:^[8] starting from selecting a topic, method or design of trial, critical evaluation and interpretation of evidence, countering the available evidence and finally presenting their findings or outcome. At each step, the teaching staff or faculty must be able to provide adequate guidance to the fellows. It is understandable that faculty sometimes are already laden with teaching responsibilities, especially in India where there is shortage of teaching staff in many remote colleges. Here, the role of academics become dual fold, and the incorporation of both aspects of teaching in curriculum may prove to be beneficial in long term. Teachers must also conduct some research involving students to make their learning research based.

Considering the large number of homoeopathic students, both graduate and PG and number of registered practitioners, a lot of evidence can be generated within India. However, many a times, the evidence from homoeopathic trials/studies is considered and reported as of low quality. The reason could be many including lack of adequate training or exposure to research practices. Thus, it is imperative that adequate training in research methodologies, conducting and reporting is provided along with hands-on training. Students are most often enrolled in homoeopathic drug-proving programmes, providing them exposure about various aspects of trials. Homoeopathic pathogenetic trials (HPTs) that can be easily conducted at

homoeopathic college setup with standard resources. Further, students or faculty who participate in drug proving can also feel the essence of homoeopathic materia medica.

In this issue, we are including the article on HPT of *Magnolia grandiflora*.^[9] The trial is conducted based on the standard protocol of drug proving published by the Central Council for Research in Homoeopathy which was developed harmonising internationally developed guidelines.^[10] This generic protocol can be used by colleges to conduct good-quality trials with minimum bias.

Further, in order to build the high-quality evidence, the randomised trials are necessitated. The quality of any trial depends on the robust protocol. In this issue, we are publishing a protocol developed based on the SPIRIT guidelines,^[11] which generates data that can be reported as per the CONSORT guidelines^[12] and RedHot supplement for reporting randomised trials of Homoeopathy.^[13] The rigorous reporting of the clinical trial on the basis of standard guidelines must be promoted to address the underreporting.

To assess the effectiveness of homoeopathic treatment in disappearance and resolution of warts, the council is undertaking a double-blind randomised placebo controlled trial.^[14] The research protocol of this study can be used as a model template for researchers to develop their own and conduct trials of good quality.

On the other end of clinical trials, the quality standards of raw drug material can be evaluated by conducting experiments at college laboratories as well. Publishing in this issue, evaluation of qualitative phytochemical analysis of water extract of *Achyranthes aspera* and the homoeopathic dilution *Achyranthes aspera* 30^[15] conducted in a homoeopathic college laboratory setting can further widen research horizon.

The readers of the journal can also refer back to previous editorials which cover several aspects of conducting research with identifying key areas,^[16] understanding best practices^[17] and enriching the science of Homoeopathy.^[18]

RESEARCH AND CLINICAL PRACTICE: THE CONNECTION

Most of the clinical trials are conducted with an aim to observe the usefulness of treatment (homoeopathic) in certain diseases. Implementing the results of these trials can potentially benefit and improve the overall quality of life of the patients. Implementation of the research results in clinical practice is although recommended but it is usually unrealistic to incorporate. This gap in translation is due to several reasons such as heavy patient footfall in clinics leading to time constraints. The cognitive process involved in learning must be considered, as research on human cognition has demonstrated that overcoming well-practiced rules to incorporate new information is one of the great challenges in learning.^[19]

The prior knowledge is too much imbedded in the clinician's mind. The likelihood of recognising new knowledge is

adequate, but incorporating it into a well-rehearsed practice is less likely. Implementation of research evidence in practice can be done by several methods: first, by creating awareness among clinicians about the significant research outcomes through seminars, workshops, continued medical educations, journals, etc. The awareness is subsequently followed by acceptance of the methods or findings eventually leading to adoption of the results and new practices.^[20]

Further, making results accessible for clinical practice without providing adequate training cannot ensure successful uptake by the clinicians who tend to use the same treatment methods which they have always been using in their busy practice. The research results if presented in the form of more actionable and utilisable form, standard guidelines and flowcharts can slowly produce the desired result of adoption of research outcomes over time.^[21]

With deliberate attempts to learn and incorporate new tools in practice, the desired results can be achieved. The evidence-based practice is critical for development of the system and benefit of patients. This can also aid in generating clinical evidence and when well reported it can further be used by researchers to conduct more researches. Incorporating the tools such as Naranjo Criteria or HOM CASE guidelines^[22] for reporting unique and significant cases by the clinicians and conducting good-quality trials in clinic settings can always lead to successful practice.

In this issue, two case reports of resolution of lacrimal gland tumour^[23] and treatment of infantile haemangioma^[24] are being published for the appraisal by the readers. A brief compendium of research updates is included for reckoner of latest published research evidence for the readers.^[25]

Researchers must also focus on disseminating the outcomes not only in journals but also translating their findings to various other platforms such as discussion forums, scientific blogs, social media, etc. for awareness of population and counter the false propaganda going against Homoeopathy.

Considering that homoeopathic research outcomes must be incorporated in education and practice, the theme for the upcoming scientific convention on World Homoeopathy Day is 'Linking Education and Clinical Practice with Research: Advancing Scientific Collaborations'.^[26] The convention will be a unique platform where academicians, clinicians and researchers of homoeopathic field will have comprehensive deliberations.

Remembering the Founder Director of the Central Council for Research in Homoeopathy and the Homoeopathic Pharmacopeia Laboratory, Dr. PN Varma, who left us in November 2018 for heavenly abode, we publish his obituary.

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