

## Editorial

### Medical Research and Writing: Continuing Journey towards Excellence

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We are at a critical point in the history of science and medicine. There exists enormous opportunities for advancing our understanding of basic biological, chemical, and physical processes. The specific goals are to realize these opportunities as a means of improving human health through greater understanding of the mechanisms of diseases. There is no denying that one of the biggest challenges faced by the current medical professionals is to keep in touch with the latest in literature. It seems to happen almost every day - we hear about the results of a new medical study although sometimes the results of one study seem to disagree with the results of the other (Schäfer et al., 1999).

Medical researches involve a wide range of fields, such as biology, biochemistry, pharmacology and toxicology with the goal of developing new medicines, medical procedures and at the same time improving the application of the existing ones (Bortz and Döring 2002). It can be viewed as encompassing preclinical research like in cellular systems and animal models and clinical research like clinical trials. Completion of human genome project, in vitro fertilization, stem cell research and sequencing of microbial genomes marked the advances made in the last decade and this decade is expected to show us the identification of molecules against which drugs will be targeted (Novack 2004). The correlation of genomics, proteomics and metabolomics to conventional pathology and microbiology holds promise to understand interactions of gene and environment in human disease. Microarrays will add to the ongoing practiced techniques in the field of diagnosis.

How would someone determine what is important to read in a given period of time? To our mind the key factor is relevance. If what we read is unlikely to add to our practice of microbiology, patient care and research interests, it may not be worth spending time on. Journals with good impact factors generally bring good science (Blettner et al., 2001). However, lesser-known journals may have interesting and relevant literature. It is important to get a national perspective by reading national journals. The other factors that may help decide whether a study is good enough to spend time on is the study design. Case series must be read with caution as they present one group's findings. While the comparative studies are superior to case series, the best studies are randomized (Altman 1991). A good randomized study with adequate sample size is likely to provide dependable results. The actual purpose of the study design is for the reader to be able to replicate the study; therefore, the methodology should have adequate details for it (Eng 2003). Moreover, extrapolation of the results often depends on the study design employed. Reader value of an article is high in prospective studies. In a retrospective study the authors notice something, look back and write about it. In contrast, in prospective studies, a question is asked first, normally with a hypothesis and then it is tested whether it is true. The value of a prospective study with appropriate outcome measure and adequate sample size is several folds higher (Juni 2001).

Being skeptical about the conclusions in published literature is one of the ground rules since a large number of published literatures may have faults, whether national or international, whether of high or low impact factor. Readers should be wary of online journals that have proliferated in the recent past. It is also a good idea to be careful in accepting the conclusions of sponsored studies. Many funding agencies may influence study designs that will favor them (Bossuyt et al., 2003).

Stringent regulations by peer-reviewed journals have made the abstracts informative in good journals. Although abstracts show the overall content of the article, they may be far from reality. Therefore, readers may do well to at least read the last part of discussion to get a clearer picture (vonElm et al., 2007). The web

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technology has reduced the errors in back references to a remarkable extent in peer-reviewed journals and the access to various related links adds to the growing knowledge in medical research apart from preventing the authors from quoting articles that they have not read and are not available (Moher et al., 2001).

It can be inferred that Medical Research, involving people directly or indirectly, is vital in reducing uncertainty of patients care and improving the health of the population as a whole. In addition, those days are not far when medical studies would minimize global distance through ensuring standardized knowledge and skill of Medicine. [*Journal of Science Foundation, 2015;13(1):1-2*]

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