Scientific Publications in Nepal

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ABSTRACT

Scientific publications have become a mainstay of communication among readers, academicians, researchers and scientists worldwide. Although, its existence dates back to 17th century in the West, Nepal is still struggling to take few steps towards improving its local science for last 50 years. Since the start of the first medical journal in 1963, the challenges remains as it were decades back regarding role of authors, peer reviewers, editors and even publishers in Nepal. Although, there has been some development in terms of the number of articles being published and appearances of the journals, yet there is a long way to go. This article analyzes the past and present scenario, and future perspective for scientific publications in Nepal.

Keywords: ethics; journal; Nepal; publication; research; science.

INTRODUCTION

Publication has always fascinated mankind from time immemorial, starting from cave painting to stone writing to development of printing press and evolution of mass publications. This has helped improve our understanding of science and its development over the centuries. In view of paperless, electronic media, with exponential growth in accumulation of knowledge, the scenario has gone even wild at present day. All of these progresses have certain motives, to make the work permanent and make the findings publicly accessible, to make a contribution to science and improve health services, or to convince the funding body to sink even more money for research, or the person is obligated by one's supervisor.

Day et al, in his book said that - a scientific experiment, no matter how spectacular the results, is not completed until the results are published. In fact, the cornerstone of the philosophy of science is based on the fundamental assumption that original research must be published; only thus can new scientific knowledge be authenticated and then added to the existing data base that we call science. 1 Scientific writing, like most non-fiction writing,

is designed to be persuasive. However, the history of persuasive writing, or rhetoric, is not the history of science.2

The completion of scientific research is the publication. The scientist, starting as graduate students, are measured primarily not by their dexterity in laboratory manipulation, not by their innate knowledge of either board or narrow scientific subjects, and certainly not by their wit or charm; they are measured, and are known (or remain unknown) by their publications. That is why "Publish or Perish" is most common among researchers.

Although scientific publication started almost 300 years ago in the world, it did not gain momentum until 1990s in Nepal. After establishment of multi-party democracy, liberalization in education helped set up number of new universities thereby founding hundreds of academic institutions throughout the country. It began not only in health sciences discipline including medical, nursing, public health and allied health sciences but also many others including engineering, management, humanities and social science. With their increase in numbers,

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the demand for qualified human resources in academic institutions accelerated dramatically.

As a universal practice Nepalese universities have made obligatory to have articles published in scientific journal as a criteria for the academic positions. This has become one of the single most important factors to propagate scientific publication in Nepal, at present. Had there been no such a prerequisite, Nepal would not have witnessed exponential growth of journal publications. However, the quality of those still remain obscured, for instance, if one gathers all the journals being published in the country on a table and evaluated by experts, it will reveal the true scenario.

There are many aspects for improvement in the part of editor, author, reviewer and journal publisher and also at policy level. In the current scenario, based on this author's personal and other editor's experiences, it implies that the author motivations to conduct a research is driven either to get grants or entry into an academic position or win promotion into an expected position. It will take decades to have research and publication without compulsion in the mainstream.

HISTORY OF SCIENTIFIC PUBLICATIONS

The earliest known academic journal is Journal des sçavans⁴ which was published on Jan 5, 1665, from France, and the first scientific journal is Philosophical Transactions of the Royal Society,⁵ published on Mar 6, 1665, from England.

The Journal des sçavans was published by Denis de Sallo. He was a counselor of the Parliament of Paris and part of the coterie of the powerful Jena-Batiste Colbert. Sallo proposed to Colbert a scheme whereby Sallo would publish weekly periodical containing information on matters of interest to the learned public including numerous reviews of new books. Sallo was granted privilege for the printing of the journal in 1664 which was then passed on to the Parisian printer Jean Cusson. The first issue comprises obituaries of famous men, church history, and legal reports. The journal ceased publication in 1792, during the French Revolution, and, although it very briefly reappeared in 1797 under the updated title Journal des savants, it did not re-commence regular publication until 1816. From then on, the Journal des savants became more of a literary journal, and ceased to carry significant scientific material.4

Shortly after Journal des sçavans, the first issue of the Philosophical Transactions of the Royal Society appeared. Initially it was edited and published by the Royal Society's first secretary, Henry Oldenburg and later published by the Royal Society of London. 4, 5 It is the world's longestrunning scientific journal till date. Oldenburg was a German theologian known as a diplomat and a natural philosopher and one of the foremost intelligencers of Europe of the seventeenth century.6

Although, slightly earlier Journal des scavans claimed to be the world's first science journal, the Philosophical Transactions is considered to be the first scientific journal in the world,7 exclusively devoted to science as former had a wide variety of non-scientific material as

It took more than 100 years for some notable journals to appear, such as, New England Journal of Medicine (NEJM) on Jan 1812,8 The Lancet on Oct 5, 1823,9 British Medical Journal (BMJ) on Oct 3, 1840,10 Nature on Nov 4, 1869,11 Journal of American Medical Association (JAMA)12 on Jul 14, 1883,13 and thousands others to start their journey. Scientific publication took its drive during this era as also evident by the notion: "Work. Finish. Publish" by Michael Faraday. 14

Exactly 298 years after the first publication of Philosophical Transactions of the Royal Society,⁵ Nepal got its first scientific journal, the Journal of Nepal Medical Association (JNMA) in 1963.15 The new era of scientific publication started ever since. As we go through the history of development of journal publication, it has always been started by academicians, influential people and organization, so with the JNMA which was started by Dr. Mrigendra Raj Pandey as the first chief editor and published by Nepal Medical Association (NMA). Subsequently, Journal of Institute of Medicine (JIOM) and Journal of Nepal Paediatrics Society (JNEPAS) were published by Institute of Medicine (IOM) and Nepal Paediatrics Society (NEPAS), respectively.

| Table 1. Journals available through NepJOL | | |
|--|-------------|--|
| Journal | n (%) | |
| Medicine and Dentistry | 19 (23.75) | |
| Physical Sciences | 14 (17.50) | |
| Biological Sciences | 12 (15.00) | |
| Social Studies | 9 (11.25) | |
| Technologies | 5 (36.25) | |
| Agriculture | 4 (5.00) | |
| Engineering | 4 (5.00) | |
| Business and Administrative Studies | 3 (3.75) | |
| Multidisciplinary | 3 (3.75) | |
| Subjects allied to Medicine | 3 (3.75) | |
| Mathematics and Computer Sciences | 2 (2.50) | |
| Education | 2 (2.50) | |
| Historical and Philosophical Studies | 1 (1.25) | |
| Mass Communications and | 1 (1.25) | |
| Documentation | | |
| Total | 80 (100.00) | |

These pioneering medical journals have paved the way for scientific publications in Nepal. There are over 100 journals being published in the country, out of which 25 are medical. Eighty journals have been listed in Nepal Journal OnLine (NepJOL) which is a database of journals published in Nepal (Table 1).16

On the other hand, five medical journals have been indexed in the PubMed till 2012 (Table 2). Some journals are in the process of being indexed, such as, Journal of Nepal Paediatric Society (JNEPAS), Nepal Journal of Obstetrics and Gynaecology (NJOG), Journal of Institute of Medicine (JIOM), Journal of Society of Surgeons of Nepal (JSSN), Journal of Pathology of Nepal (JPN) and many others.

| Table 2. Nepalese Journals Indexed in PubMed | | | |
|--|------------------|-------------|--|
| Journal | Publisher | Туре | |
| Journal of | Nepal Medical | Association | |
| Nepal Medical | Association | | |
| Association | | | |
| Journal of Nepal | Nepal Health | Council | |
| Health Research | Research Council | | |
| Council | | | |
| Nepal Medical | Nepal Medical | Academic | |
| College Journal | College | Institution | |
| Kathmandu | Kathmandu | University | |
| University | University | | |
| Medical Journal | | | |
| Nepalese Journal | Nepal Ophthalmic | Society | |
| of Ophthalmology | Society | | |

CURRENT TRENDS

Nepal witnessed liberalization in education, health and many other sectors after establishment of multiparty democracy in early 1990s. There was only one medical college before democracy but after that many other medical schools and health care institutions were founded in the subsequent years. At present, there are total 19 medical colleges in the country. Along with new institutions, the number of articles being submitted to existing medical journal has increased by many folds. These events also occur simultaneously in other branches of Sciences like engineering, management, humanities and social science and other as well.

By 1980s, the government of Nepal had realized the value of research for improving health in the country. Accordingly, Nepal Health Research Committee was established under Ministry of Health chaired by the Secretary of Health in 1982, later renamed as Nepal Health Research Council (NHRC) in 1991.¹⁷ It is a statutory and autonomous body as promulgated by NHRC Act no. 29 by the parliament. This movement also indicates that research activities had received its importance even before 1990s political change.

In early 2000s, Journal of Nepal Health Research Council (JNHRC), Kathmandu University Medical Journal (KUMJ), and many other medical journals started appearing in the medical fraternity. It was on account of these increasing number of medical colleges which required more faculty members. Nepal Medical Council made it compulsory to have Professor, Associate Professor, and Assistant Professor in the department of a medical college, for which they need to have certain years of experience along with published article as first and co-author to get those designations. Beside this, increasing number of fresh graduates is going abroad for further education where scientific publications help them to shape their career. This trend is encouraging new generation to incline towards scientific activities in the society.

When health sciences institutions especially medical schools realized that their Faculty members require journal articles to hold academic position, many institutions have come up with an idea to have their own journal. Some of them have tried and some are trying even today. But it has not been understood that having a journal with quality is a daunting task.

PRESENT SCENARIOS

There are limited imminent researchers and academicians in the country, beside this critical mass dedicated to improve local science is getting bigger. However, majority of the senior faculties are not accustomed to conduct research and publication during their entire career and also find it very difficult to start at their later stage. Ironically, some of them want their work to get published only to obtain academic designation and leave forever. Neither such faculty would teach nor encourage their pupils to engage in research to generate new knowledge and publish them. This scenario is generating same pool of people without adequate knowledge of research and publication; therefore, a vicious cycle is going on. Since authors of weak journals achieve recognition on account of their inadequate products, they often fail to develop incentive to perform better, follow international standards, or properly value the kind of effort and result.18

Whereas, some authors have different views as the publication of their work is mostly prevented by editors and peer reviewers, which is not the exact scenario in Nepal. Most of the professional editors are author friendly; they would suggest authors as how their manuscript could be improved further. In this chaos, publication misconduct is on rise, even aggravated by introduction of computer and information technology. Furthermore, many authors have lack of knowledge and adequate competency in writing scientific article as evident by poor texts and insufficient formatting in the submitted articles. Length of time for acceptance and then publication, fear of rejection and not knowing how to start "the writer's block" is also triggering frustration to novice authors.

PUBLICATION MOTIVES

Academic achievements without publications have become one of the single most motivating factors for majority of authors to publish scientific articles. Moreover, qualifications such as, PhD or MCh/DM cannot be obtained without publication as guided by University curriculum. However, some people tend to have an ego to have work as their epitaph. Likewise, some want to have their name printed on paper, while others would like to enhance their CV. There may be many objectives and different purposes, but we do acknowledge that somehow "Publish or Perish" has taken a giant step. This author prefer to call it "compulsion per se," had there been no such criteria we would not come to this stage so early. Nonetheless, we must appreciate this move in spite of having interlinked problems at different stages initially but it will take its shape in the due course.

Although Institute of Medicine (IOM) is the foremost and oldest medical school in the country, the rules for requirement for academic achievement is not as robust as in other institutes, for example, BP Koirala Institute of Health Sciences (BPKIHS) and Kathmandu University (KU). Meanwhile, National Academy of Medical Sciences (NAMS), Patan Academy of Health Sciences (PAHS), Pokhara University (PU), Purbanchal University (PU), and others have developed their own guidelines being based on concern councils' core guidelines since different discipline are controlled by different councils. BPKIHS has stood in the forefront, owing to the influence by All India Institute of Medical Sciences (AIIMS). Authorization councils like Nepal Medical Council (NMC), Nepal Health Professional Council (NHPC), Nepal Nursing Council (NNC) and Nepal Pharmacy Council (NPC) have key role to further standardize these guidelines.

PUBLISHERS

Most of the journals are either published by professional Associations, Societies, Councils, Universities, or Academic institutions in Nepal. There has not been any commercial publishing house or publisher in the academic journal publication business as it is not profitable as in the Western world. Most of the published articles are freely available knowingly or unknowingly in line of Open Access. Nevertheless, some private organizations have also started publishing journals not for business, but for educational purpose due to involvement of academic people.

Sallo, in an introductory note to the reader (under a nom de pulme of Sieur de Hedouville), outlined his five-fold purpose for Journal des sçavans⁴ (Table 3).

Table 3. Purpose of First Academic Journal - Journal des sçavans4

- 1. provide a catalogue and brief description of the principal books printed in Europe
- 2. print obituaries on famous men
- 3. publish findings from experiments in physics and chemistry, new discoveries in the arts and sciences such as machines and useful or curious inventions of mathematicians, celestial and meteorological observations, and new anatomical findings made on animals
- 4. document the findings of secular and ecclesiastical tribunal as well as universities in France and the rest of the Europe
- 5. report bits of news that might be of interest to men of letters

Over the centuries, millions of articles from thousands of journals have been appeared, whereas some got disappeared, but the aforementioned five points still hold true in Nepal. Small journals from developing countries are more or less dealing with same issues again and again.

JOURNALS

There are annual, biannual, or quarterly journals in the country. Every journal has their own format, scope, priorities and themes. Due to inadequate number of researches, on any given specialty, most of the journals have general scope to accommodate many articles. Although, few subspecialty journals have appeared lately, it is a truly arduous task for them to find enough articles for each issue.

The major categories of literature published in the journals are original article (a research article), case report, short communication (research article which doesn't fit in the original article), medical education, viewpoint/perspective, and letter to the editor. Each and every category has its own format and requirements. Consequently, most authors are lost with the medical journal jargons, as they cannot revise their manuscript according to journal's feedbacks. It is also ironic that some journal editors do not follow their own journal style persistently. If a journal cannot maintain its own format consistently, how can we be sure that the article published in that journal is of good quality in terms of scientific value?

Many journals do not publish on time as a result of ineffective editorial board, sluggish review processes, and in house publication issues.

JOURNAL EDITORS

The health sciences journal publishers are mostly associations and societies in Nepal. The tenure of executive body has limited period of 2-3 years, which directly affects editorial board. Every new executive body prefers to select a new Chief Editor and form a new editorial board under his/her leadership. Because of this policy, frequent changes in the editorial board in every 2-3 years are discouraging development of journals. Undeniably, journalology has become a separate entity. Managing and editing a journal requires vast experience with expert knowledge and skills above all the dedication and commitment. As the duration is of short period, by the time an editor gain confidence in the journal's works and begins to build up expertise, s/he is replaced by novice editors.

Very few editors have experience for working in journals for decades. As in the most of the associations and societies' journal: editorial job is limited to voluntary work, have no formal training, insufficient knowledge at various level of journal management and increasing dissatisfaction with publishers, deteriorating overall scenario, is making things even worse.

Most of the editors have prior involvement in research and publication. Majority are working alone, even when there are many editorial board members, as most of them are unsure about their task, and the rest, they just want their name printed. Therefore, one or two editorial board members actually contribute to the journal publication. Most of the journals have their office in the Chief Editor's computer. They hardly have separate office or staff.

PEER REVIEWERS

Peer reviewers are crucial for improving journals' quality in many ways. 19, 20 Reviewing is not just simply reading an article and giving decision but to help editor to select best article among many, therefore the flaws²¹ are inevitable in various ways, particularly in a set up like ours. We have few experienced peer reviewers, they return articles with few words- publish it, reject it, or ask the author to re-write without giving proper feedback. This makes the job of an editor even tougher it could be due to voluntary nature of their work. Even incentive provided by JNHRC hasn't shown improved quality in the reviews. Therefore, we need pool of knowledgeable, dynamic peer reviewers in the country.

RESEARCH METHODS

In any scientific article, methodology is one of the important sections. The information such as type of study design, place and duration of study, sample size, sampling technique, ethical approval, statistical tools and analysis make an article more valuable. But these

are not given properly in detail or even few of them have been left out in the research article which makes their submission of low quality. Instead, inadequate information, weak study design, unplanned research, ethically poor, incorrect sample size at times based on pleasant number and sampling error, inappropriate use of statistical tools (misuse of p value) provides ample space for making an editor suspicious about its reliability and validity. Most of the researchers opt for hi-fi research methodology, which leads to even more errors in spite of the fact that even many of them have difficulty carrying out basic researches.

RESEARCH DATA

The evidence of data falsification and fabrication in the result section is on rise globally.²² Publishing an unfinished research, data manipulation and more breach in ethics have been seen for quick academic achievement. Majority of people working in medical college are aware that their promotion is on due in just a few months in advance. During that short period, they need to get their article published in a journal that too some time in an index journal. Such an edgy situation leads to falsifying and fabricating data and evidence which has also been observed even in developed countries.²³ They have to publish more than one article, as a result salami publication,24 duplicate publication25 and multiple submissions are on rise.26

AUTHORSHIP

Authorship dispute is not a new thing in the publication, but the scenario is quite different in Nepal. In general, younger generation is more familiar with computer than senior faculty. Except some dedicated researchers, majority of the research work such as conceptualization, carrying out research, data management, data interpretation and also write up are done by juniors. Though not always, younger people are on constant move from one institute to another, and at times they have to please their superiors. This entire situation has led to increasing number of ghost author, gifted author²⁷ and pressure author in the articles.

CONFOUNDING FACTORS

The scenario in health sector is affected by many factors including lack of foundation research and publications. However we need to have health policy and guidelines for research and publication to find out pros and cons of our existing health service in the country. Few sporadic researches have been conducted, but to get grants or tangible support from possible donors. These researches are rarely found in scientific journals and remained as grey literatures. This could be also related to diminished stimulus for writing article, or the culture of publishing such research has not yet been developed amongst that community.

The number of health institutions have increased and so with the individual journals too, but most of them have not met an international standard. Most of the institutes do not value journal except articles during promotion of the faculty members. All universities require published article for their Faculties, therefore, some university have started publishing journal but they fail to support journal office sufficiently thereby editors fail to publish quality article.

There is a growing debate among academicians to have just one or two journals of high standard rather than having many articles with poor quality, in the country. While other contends that it is not the number of journal but the quality, as number of institutions is increasing so with its faculty members writing more. Therefore, rather than restriction, the culture of scientific research and publication should be promoted. Nevertheless, mere debates do not change the culture. Nepal is in a state of transition where nothing works at its best, at present. Rise and fall of the scientific journal is imminent, as Darwin had said- survival of the fittest.

READERS

Previously, readers of most of the journals used to be its own author, co-author(s) or their colleagues only. Now, there is a changing trend, young researchers, master's or post graduate level students have started going through articles for carrying out research in Nepali context or for their thesis. Otherwise, very few readers are interested for Nepalese scientific journals in detail.

Although limited, academicians with vast experience of research and publication have an impression of inadequate quality in the articles and also in the part of journals but very few of them have come forward for its rescue. There is a vicious cycle where readers blame poor journals, and journals, in turn, blame poor authors and reviewers. The ground reality is, neither editors, nor authors or peer reviewers are best in their job. Since readers do not respond much, very few comments are seen in the journal for published article.

IMPROVING LOCAL SCIENCES

More funds have to be allocated for research and publication by concerned stakeholders, academic institutions, universities and government as well. Periodic trainings on research and publication have to be conducted throughout the year. Publishers need to be extremely careful while selecting editorial board members. Similarly, periodice valuation of the journal office has to be done by the publisher.

When publishers do not take their journals honestly, editors with inadequate knowledge in turn will accept poor articles from poor authors, which could be sent to less experienced peer reviewers, consequently leading to publication of poor articles, and further deteriorating local science. Unless, we do not break this chain, the vicious cycle will keep continuing.

Journal can be improved by employing knowledgeable and experienced editor in the board with a well set up journal office. It should have timely publication, periodic evaluation, and regular training for its reviewers, authors and local researchers. Publisher are liable to change their editorial board too frequently at the time when the existing editors are about to understand the proper mechanism of journal publication, and are replaced by new editorial board. This tendency is deteriorating many journals, its quality, and undermining the potential for improving local sciences. Hence, a relatively stable editorial board with required infrastructures is a must.

Education about research and publication need to be improved. In all discipline including medical schools, the young generation should be familiarized with basic research methodologies and publication right from the beginning. High quality papers with accurate, valid, reliable, credible and authoritative findings will only be possible when we have research and publication culture. Researchers need to have enough idea about what they are doing and how to communicate it effectively after completing their work, where regular scientific writing training will help them to a great deal.

Journal editing and publication has become a separate entity, which by any means affects everyone's life. Science is evolving each day, which entirely depends upon what kind of information we receive from? Now, it is high time for policy makers, concerned stakeholders and academia to be serious about our own local science. Unless we improve ourselves, we cannot expect someone to come and rescue us.

As an individual, one should get involved in the training; an expert writer should share his/her experience with peers and colleagues, while faculty members encourage juniors for scientific publication. As we have a shortage of skilled manpower in journalology, new and perspective editors have to be trained for maintaining journal's quality. As an organization, they should conduct and support training programs on scientific writing, encourage staffs to write for scientific journals, add scientific publication for reward and achievements. Similar efforts for empowering local science have been initiated by Nepal Association of Medical Editors (NAME) through its educational program for researchers, authors and peer reviewers, and current and perspective editors, many of them have already been benefitted from this opportunity.28

FUTURE PERSPECTIVES

The culture of scientific publication is gaining momentum over the years. Younger generation is becoming interested in scientific research and evidence based medicine. External donor partners have also started favoring journal-based publication over typical report base findings of their work. High quality researches, such as, clinical trials are being conducted at many places. NHRC is particularly focusing on research and development; Ethical Review Board (ERB) is strengthening its capacity. NAME is fostering medical journalology through its educational programs for editors, author, peer reviewers and researchers. Increasing number of publishers are gradually recognizing the importance of efficient editorial board, and are looking for competent editors. Peer reviewing process is becoming more rigorous and journals have started ranking in house peer reviewers.

Increasing numbers of people are becoming aware about research ethics and publication and misconducts. More editors are trying to improve the standard of their journals and working hard to make their journal index in MEDLINE. Similarly, authors are gradually opting peer reviewed and indexed journals for their work. This entire scenario indicates improvement in local science though not much; however, it would most probably take another decade to have a policy impact by this sort of effort; and visible change in the society.

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