“Science is the knowledge based on understanding of some aspects of physical or social world.”[1] This knowledge is derived through a continuum of scientific research conducted over centuries, that today we know of. And what is research? Research is the creative and systematic work carried out to increase the knowledge of humans, environment, culture and society, and the use of this knowledge to devise new applications.” It is used to establish or confirm facts, reaffirm the results of previous works, solve problems, support theories, or develop new theories.[2] It simply means that research is a sacred activity.

There is a lot of scope for research in India, because of its large population of approximately 130 crores with topographical and sociocultural variation. Majority population living in different areas is fraught with a wide spectrum of health-related problems/disease burden of rural, urban, or tribal life justifying the need of health research.

It is a fact that strategic planning to improve health research is necessary for the enhancement of population’s health. Public health research has an enormous scope of its doing and utilizing it for the control of diseases and improving the health of populations. Ultimately, the object of research is to extend human knowledge beyond what is already known. An individual’s knowledge enters the domain of science only after being presented to others to judge its validity independently.[1] For that purpose, it is necessary to publish the work in scientific journals or bulletins or books.

Publication is a system necessary for academic scholars to review the work and make it available for wider audience. It varies from field to field and is ever changing. Most academic work is published as a journal article or in book or thesis and dissertation.

Research paper “An organized description of hypotheses, data and conclusions, intended to inform the readers”. If a research does not generate papers, it may be construed that it has not been done (if it is not published, it has not been done).

**ABSTRACT**

Research is undertaken to increase scientific knowledge. Knowledge enters the domain of science after it is presented to others. Publishing research, contributes to medical community’s knowledge. Research publications earn mileage to the researcher in career. Presently, a lot of pressure has built up on medical fraternity to publish in terms of quantity, thereby compromising the quality of papers as official bodies governing the medical professionals have linked the quantity of publications with career growth. These rules are to promote research but they create stress among medical teachers, lowering the quality of research and publications. Hence, It is the responsibility of authors to strictly follow guidelines while doing and publishing research. To promote academic research and deter plagiarism, educational institutions are to establish Academic Misconduct Panel to investigate the allegations, and report to Plagiarism Disciplinary authority which can impose penalties as conduct and publishing of research is a serious issue.

**Keywords:** Ethics, medical research, plagiarism, publication

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**How to cite this article:** Bahl R, Bahl S. Publication pressure versus ethics, in research and publication. Indian J Community Med 2021;46:584-6.

**Received:** 04-05-20, **Accepted:** 06-04-21, **Published:** 08-12-21
Publishing research contributes to the medical community’s knowledge and gives credit to the researcher and encourages one to further it. Every researcher must publish his work, to share his experience and gained knowledge with co-professionals for use in the health care of the people.

Research publications get well-deserved mileage to the researcher in his profession, carrier, awards, fellowships, etc. However, times are changing. The official bodies governing the medical professionals have pressurized them by linking the number of publications with the selection and promotion of medical college faculties. According to the current rules in most of states of country, research publications in indexed journals are mandatory for promotions in medical colleges. It is compromising the quality of papers and hence the research. Basically, these rules have been framed to promote research in medical colleges, but at the same time, they have potential to create stress among medical teachers, growth of predatory journals and manuscript writing services, lowering the quality of research publications, and a mad race for publications. They are left with only one option – publish or perish.

Hence, intentions to publish are getting polluted with personal and vested interests. In many instances, it is observed that authors resort to deviations from the set norms and commit intellectual malpractices, willingly or unwillingly, which tarnishes the credibility of research and the researcher.

It becomes prudent for the seniors to set examples for the next generations by following “Principles of publishing” as “Author’s Responsibility:

1. General rules: Authors must:
   a. Ensure the novelty and originality of research
   b. Agree with content and its submission
   c. Know and agree that the manuscript can be examined by neutral reviewers
   d. Provide copies of related work submitted/published elsewhere, if asked to do so
   e. Obtain copyright permission if figures/tables need to be reproduced
   f. Include proper affiliations.

2. Avoid:
   a. Submitting papers that are just extensions of previous reports and do not enhance the understanding or knowledge in the area
   b. Submitting incremental/fragmentary reports of research results
   c. Submitting verbose, poorly organized papers containing unnecessary, or poor-quality illustrations.

3. Do not:
   a. Violate ethical guidelines
   b. Resort to plagiarism of any type or degree and Questionable Research Practices.

4. Authorship:
   a. List of authors establishes accountability and credit to them
   b. Policies of most scientific journals state that a person should be listed as the author of a paper only if he has made a direct and significant intellectual contribution to design of research, interpretation of data, or drafting of the article
   c. Give credit to one/ones who helped to conduct the research
   d. Don’t give credit to the one/ones who did not
   e. The acknowledgments section can be used to thank indirect contributors
   f. Including honorary, guest, or gift authors inflate their credentials and dilutes the credit, “due” to the contributors.[1]

An author must keep in mind that he should not include names of spouse or sibling or child or colleague or boss among authors. In many studies, names of seniors or HODs are found quoted as first authors in papers published by a department, just because of seniority, a practice that has to be avoided.

5. Authors must remain vigilant to avoid Research Misconduct:
   a. Wrong doings in proposing, performing, or reviewing or in reporting results
   b. Behavior of a researcher, intentional, or unintentional that does not meet or fulfill the scientific or ethical standards.[3]

Types:
   i. Fabrication-making up (cooking) data or results and recording/reporting them
   ii. Falsification-manipulating research materials, equipment, or processes, or changing or omitting data or results such that the research is not accurately represented in the research record
   iii. Plagiarism and self-plagiarism
      a. Plagiarism: Using the ideas or words of another person without giving appropriate credit[4]
      b. Self-Plagiarism: The verbatim copying or reuse of one’s research

Both types of plagiarism are unacceptable practices in scientific literature. The most unethical practices involve substantial reproduction of another study (bringing no novelty) without proper acknowledgment. If such duplicates have different authors, then they are guilty of plagiarism, whereas papers with overlapping authors are examples of self-plagiarism. Simultaneous submission of duplicate articles by the same authors to different journals also violates ethical norms and journal policies.

Research misconduct does not include honest error or differences of opinion.
   c. It is author’s responsibility to obtain proper permission and appropriately cite or quote, the material not original to the author. In this context, “quote” is defined as reusing other’s works with
Proper acknowledgment. Appropriate citation applies, whether the material was written by another author or the author himself.

d. More damaging are irresponsible research practices:
   i. Publishing research findings more than once, in fragments
   ii. Not declaring the conflicts of interest
   iii. Selective reporting.

The World Conferences on Research integrity attended by more than 50 countries defined research conduct as: “Researchers should report to the appropriate authorities any suspected research misconduct including fabrication, falsification or plagiarism, and other irresponsible research practices that undermine the trustworthiness of research, such as carelessness, improper listing of authors, failure to report conflicting data, or use of misleading analytic methods.

Penalties

The University Grants Commission (UGC) has directed all educational institutions to establish an academic misconduct panel to promote academic research and deter plagiarism. The panel investigates allegations and submits the report to Plagiarism Disciplinary Authority which can impose penalties:[5]

i. For degree of plagiarism is up to 10%: No penalties are imposed

ii. Plagiarism 10%–40%: A student gets no award and is directed to submit a revised manuscript within a period of 6 months. However, for a faculty member, the penal actions are strict including withdrawal of the manuscript and denial of permission to publish their work for 1 year (minimum)

iii. Plagiarism 40%–60%: A student faces suspension from the course for 1 year, whereas a faculty member faces extreme penalties including withdrawal of the manuscript, denial of permission to publish any of their work for 3 years (minimum), denial of one increment to salary, and denial of permission to supervise students for 2 years

iv. Plagiarism >60%: Student can be removed from course whereas a faculty member faces denial of two increments to salary and denial of permission to supervise students for 3 years

Moreover, if the offence is repeated by a faculty member, in any case, he/she can face dismissal from service.

Hence, it is concluded that while conducting and publishing any research, the ethics of following the principles laid down by the various bodies be kept in mind and followed sincerely as research and publication are very sacred to the scientific community; and it is the quality (and not the quantity) of research and the research paper that gives credibility to the researcher disseminating knowledge to others.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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