

4-20-2011

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Recommended Citation

Singh, A., & Purohit, B. (2011). Ethical Issues in Scientific Research in Developing Countries. *Journal of Health Ethics*, 7(1). <http://dx.doi.org/10.18785/ojhe.0701.03>

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Ethical Issues in Scientific Research in Developing Countries

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Abstract

Ethics is a cornerstone of dental research, and, for that matter, any research. Authorship in scientific research is an important issue which requires considerable discussion and debate. The pressure to publish is well-established in the university community. Faculty member's performance and promotion are judged by the number of published articles in academic or scholarly journals. Most of the dental schools or universities in India do not have an ethics committee. Ethical issues like informed consent and ethics committee clearance are being taken for granted. That is, these words are mentioned in the manuscript or research paper, without the actual consent or clearance being given. The authors submit that these infringements may be made knowingly and/or unknowingly. The misconduct in research and publication not only affects other authors, but reviewers and editors, as well. However, the worst sufferer is the patient.

Keywords: Authorship, Plagiarism, Scientific research, Ethics, Dental profession, Developing countries

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Ethical Issues in Scientific Research in Developing countries

Ethics is the cornerstone of dental research, and, for that matter, any research.

Authorship in scientific research is an important issue which requires considerable discussion and debate. The pressure to publish is well-established in the university community. Faculty member's performance and promotion are judged by the number of published articles in academic scholarly journals. If survival means publish or perish, any and every effort to see one's name in print becomes important. In such a situation, one should not be surprised to see the operation of the cliché, "You scratch my back, I'll scratch yours" (Lazar, 1995).

Indian Scenario

India has approximately 310 dental colleges, approximately about one third of the dental school present world-wide. Around 25,000 dentists graduate annually in India (Sivapathasundharam, 2007). There has been a sudden uncontrolled mushrooming of colleges in the last decade (Ausaf, 2008). And as it goes without saying, any growth seemingly uncontrolled, called malignancy in science, should be observed with suspicion. The examination system and enrollment in these schools have been traumatizing in India. Medical and dental seats are being allotted in private institutes on basis of capitation, with assurance of degree conferment. This uncontrolled mushrooming has led to a number of health care professionals of doubtful integrity and questionable quality, but who hold degrees (Ausaf, 2008).

Most of the dental schools or universities in India do not have an ethics committee. Ethical issues like informed consent and ethics committee clearance are being taken for granted; they are mentioned in the manuscript or research paper, but without the actual consent or clearance being given. The dental profession in India is currently being challenged to maintain its ethical character (*Borpujari, 2000*).

A certain number of publications are required for promotion as agreed on by the medical and dental councils, respectively. Though the councils' intentions were good, this has led to a race for publications. A noted practice among some schools includes listing the entire department's individual names in a research project. Moreover, in a few places, it is mandatory for postgraduate students to include the names of all other postgraduate students and faculty in a scientific research publication. Furthermore, though not in their curriculum and without any research training, undergraduate students are being forced to carry out scientific research at their own expenses. No guidelines or protocols are followed in such studies; there is falsification of data; or, in some cases, data is made arbitrarily. These undergraduates projects are sent for publication by the faculty; taking the entire credit. (Singh, 2011)

The problem at hand is the research work being conducted by these health care professionals. To enhance their performance and for promotion, research work is being manipulated or being done on paper only. Similar to the mushrooming of the schools, there also has been a rapid escalation in the healthcare journals in the country. These journals have a sole aim of taking advantage of the medical and/or dental council requirement of publications for promotion. These journals are paid ones, being run to publish research for those desperately in need of a publication or those seeking promotion. Even though advertised as peer reviewed, many of these journals publish research articles without a review process.

The compulsions to indulge in such unethical practices include a desire to see voluminous *curriculum vitae* and to increase the number of publications for promotions and academic advancement in order to prove professional supremacy. In addition, publications are also serving as the guide for students in postgraduate courses.

During the past decade, there has been a gradual erosion of the ethical principles that guide scientific research, as well as, writing and publication (Jain, 2010). Thus, a growing commercialization of research and its effects on the ethical conduct of researchers and the advancement of scientific knowledge are of concern today and need serious thought. The misconduct in research and publication affects authors, reviewers and editors: - but, the worst sufferer is the patient. Misconducts, whether done intentionally or through ignorance, have the same consequences. There is no difference in the seriousness of misconduct if it is done through ignorance (CBE Style Manual Committee, 1983).

Authorship: An Ethical Dilemma

It is surprising when one reads a two-page article in a dental or medical journal with seven, eight, nine, or more authors. Who qualifies as an author of scientific research? Length alone is no indication of quality. However, is it correct to list people because they need the publication or they are friends? Another observation is that many people have their names listed as authors without having contributed to, read, or seen the paper which carries their name, but for which they will take credit at least on their *curriculum vitas* (Lazar, 1995). Gift authorship is another form of questionable practice. Gift authorship is when an author is included just because of seniority or because he/she is a colleague or wife/husband or son/daughter etc. to increase his/her publications. This kind of practice carries an unfavorable impact on scientific research and publications.

This problem can be prevented if the authorship is decided in the beginning of the study. The journals safeguard themselves by asking the authors to submit a checklist including the criteria for authorship. To qualify as an author, one must have participated sufficiently in the conception, design, analysis, and interpretation of the data, drafting, and/or revision of the article. In other words, one must contribute to the intellectual content of the article. Those persons who provide routine assistance or supervise a research group or thesis

should not be listed as authors, but should be acknowledged in the appropriate section (World Association of Medical Editors, 1995; Jain, 2010).

Duplicate publications and Salami Slicing

The submission or publications of an article by two journals that are identical or overlap substantially with or without acknowledgment to another is termed duplicate publications. The authors are asked to submit a statement confirming that the manuscript is not submitted elsewhere and not under consideration for publication elsewhere. Publication of articles that have similar hypothesis, sample characteristics, methodology, results, and conclusion of a published article is unethical (Benos et al, 2005). Such articles may have the same authors or may be different authors without the knowledge of the initial authors (Abraham, 2000). When an article is republished as a part or parts of an already published article, it is labeled as a redundant publication. The publication of a single data set into multiple articles is called salami slicing (Spielman, 2010). Such publications are unethical as it wastes the time of reviewers, occupies the valuable space of published scientific data; and, such unnecessary over-emphasized publication inflates scientific literature with flawed meta-analysis for no benefit other than to the author.

Plagiarism

Plagiarism, an ethical breach, is the representation of another's work in any form as one's own without appropriate acknowledgment. Plagiarism comes from the Latin word *plagiarius*, which means abducting or kidnapping (Mundava & Chaudhuri, 2010). While academic dishonesty is not a new phenomenon, there is no agreement about why plagiarism is so prevalent in the academic world. Plagiarism is unethical and can hurt any academic institution's reputation. There is a difference between plagiarism and copyright infringement. Plagiarism is limitation of ideas or writings without any acknowledgement as opposed to copyright infringement which is extensive use of somebody's work without permission, with

or without acknowledgment (Chaudhuri, 2008). Factors that are likely to be associated with plagiarism can be summarized into three main types: (1) informal and formal pressures on researchers to publish; (2) limited knowledge about what level of idea-borrowing is acceptable and (3) systemic difficulties that hinder action against the perpetrators of plagiarism that create formidable obstacles for the victims of plagiarism to hold the perpetrators accountable for what they have done (Kock & Davison, 2003).

The dental profession holds a special position of trust within society, which in turn grants certain privileges to dental professionals not available to the public at large (*Principles of Ethics and Code of Professional Conduct, 2003*). In return, the profession makes a commitment to uphold ethical values and principles; including those of justice, integrity and fairness. Upholding those values remains a daunting challenge and dentists worldwide expect their peers to uphold an altruistic ideal. This is a professional obligation and a "social contract"; the basis for granting professional status (*Welie, 2004*).

Ethics education is recognized by dentists as a solution for many of dentistry's professional challenges (*Bertolami, 2004*). Dental ethics education is an integral aspect in training dentists to uphold the standards of their profession. It is important for every dental school curriculum to inculcate professional ethics into its curriculum. This education needs to start early, be reinforced continually throughout students' graduate training, and continue after they embark upon their professional careers.

The problem of authorship and plagiarism is not something of which the dentistry and other research professionals are unaware. Several editors of dental journals already recognize this problem and have set and implemented their own standards (Lazar, 1995). Dental schools must have an established ethical committee for research on human subjects. Most scientific journals ask authors to make declarations at submission about the integrity of their research. There are many academic institutions all over the world which are using plagiarism detection

tools to detect Internet plagiarism. More than detection or catching students, a plagiarism detection tool can be used as a beneficial educational tool and a preventive measure for both faculty and students (International Association of Dental Research, *Code of Ethics*, 2009).

Conclusion

Ethics education cannot guarantee that students will practice in an ethical manner, though it can give students the tools to uphold professional values. To overcome this problem of fraudulent research the medical and dental health councils need to change their rules, regarding publications for promotion. Instead of having a fixed number of publications in any indexed journal, the councils may choose specific journals to have an impact factor above a certain fixed number. Therefore, the authors suggest collective and concrete efforts by the medical and dental councils, schools and universities, heads of departments, professionals involved in scientific research, and journal editors to set acceptable standards in scientific research.

Please note that the opinions expressed by authors represent those of the authors and do not reflect the opinions of the editorial staff of The Online Journal of Health Ethics, Editors, and Reviewers.

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