

ETHICAL ASPECTS IN DENTAL RESEARCH

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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.

Key Words Authorship, Plagiarism, research, Ethics, Dental profession.

INTRODUCTION

The Webster dictionary defines 'ethics' as discipline dealing with what is good and bad and with moral duty and obligation. It can also be defined as norms for conduct that distinguish between acceptable and unacceptable behaviour or alternatively as a method, procedure, or perspective for deciding how to act and for analyzing complex problems and issues¹. This latter portion of the definition gets to the applied aspect of knowledge of ethics especially in dealing with complex public health problems and making a systems change. There are diverse branches of ethics such as bioethics (implications of technology affecting human life), medical ethics (which primarily deals with patient-provider relationships and conduct of medical research involving human subjects), research ethics, and business ethics.²

The Nuremberg War Trials exposed the terrible abuses of human rights by Nazi clinicians and scientists in the concentration camps. Two American doctors, Andrew Ivy and Leo Alexander together with unnamed trial prosecutors put together the Nuremberg Code that entrenched informed consent in human research [Nuremberg Tribunal, 1948]³ These events were followed in 1964 by the Declaration of Helsinki that enlarged on the Nuremberg Code, the current version being the 2008⁴.

The National Institutes of Health in the USA began in-house scrutiny of planned research in the late 1950s and extended this to all research supported by the Institutes in the 1960s⁵. However, the real 'father' of modern research ethics committees is Henry K Beecher, emeritus professor of anaesthesiology at Harvard University, who drew attention to unethical research in the 1960s⁶. Nowadays Research Ethics Committee are found in almost all countries.⁷

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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 India⁸ (Sivapathasundharam, 2007). There has been a sudden uncontrolled mushrooming of colleges in the last decade⁹ (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.

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 character¹⁰ (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. During the past decade, there has been a gradual erosion of the ethical principles that guide scientific research, as well as, writing and publication¹¹ (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.

Fewer than 40 ethics committees in India are properly constituted and functioning which means that the safety of the subjects of clinical trials is on the back burner, and that it is also worrying that there is no legal requirement for investigators or members of the Ethics Committees to declare a conflict of interest. Thus it is one of the serious problem given the increasing number of hospitals now owned by drug companies

CRITICAL ISSUES IN DENTAL RESEARCH

In today's environment, it would be a significant oversight to omit a section on ethical issues when considering the overall topic of critical issues in Dental Clinical Research. Certainly, in recent years, the relationship between industry and academic investigators has been strengthened and has become increasingly complex. In general, this has proved to be beneficial for industry & academia, and insofar as these relationships have enhanced the transfer of technologies from the laboratory to the clinic, has benefited the general public as we.^{11,12}

The objective is to focus on challenging and, perhaps, underappreciated problems that may confound attempts to conduct oral health research that is consistent with the expectations that apply to

all ethical research. The addressed linked topics are

a) Conflict of interest; b) Investigator integrity. c) Protection of human subjects; d) Conduct and management of research, e) Authorship: An Ethical Dilemma, f) Duplicate publications and Salami Slicing, g) Plagiarism.

a) Conflict of Interest may be defined as “a set of conditions in which professional judgement concerning a primary interest (e.g., validity of research) tends to be unduly influenced by a secondary interest (e.g., financial gain).” In a comprehensive review of the relation between dental investigators and the corporate sector, Barnett identified several situations in which conflicts of interest may compromise research or bias the way in which investigators approach their research.¹³

b) Investigator Integrity Closely interwoven with conflicts of interest that lead to personal gain is the issue of compromised investigator integrity. Research investigators have an ethical obligation to conduct their research honestly through the judicious use of grant and contract funds for the purposes intended; accuracy in fully disclosing all research strategies, methods, results and analyses; and generous and accurate citation of other investigators' preceding or competing work.¹⁴

c) Protection of Human Study participants Most countries that have signed international agreements on human rights, such as the World Medical Association's Helsinki accords, have established compatible guidelines governing the protection of human research participants.

Research proposals must be detailed, yet written in accessible language that helps the board fully comprehend the objectives and how the health, safety and dignity of human participants will be protected in full compliance with the substance and spirit of international standards. Approved proposals must be updated and reviewed annually¹⁵.

Ethical review is the responsibility of every institute that participates in a project. The increase in multicentred diagnostic and therapeutic trials in medicine and dentistry over the past 2 decades has put unanticipated pressure on the Research Ethics Board System.

d) Conduct of Research have recommended that designated authors should have contributed significantly in conceptualization design, execution, and/or interpretation of the study and should be willing to take responsibility for the study. Those who do not meet these criteria but have still helped in some way to the study like providing technical help, writing assistance, or Department/Institutional head

for providing access to the institutional infrastructure for the conduct of the research study, etc. should be relegated to the acknowledgement section.¹⁶

e) Authorship: An Ethical Dilemma It 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. 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. 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 section¹⁷ (World Association of Medical Editors, 1995; Jain, 2010).

f) 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 unethical¹⁸ (Benos et al, 2005). 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 slicing¹⁹ (Spielmans, 2010). Such publications are unethical as it wastes the time of reviewers, occupies the valuable space of published scientific data.

g) 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 kidnapping²⁰ (Mundava & Chaudhuri, 2010). 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 acknowledgment²¹ (Chaudhuri, 2008).

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 status²² (Welie, 2004).

CONCLUSION

Today's university students are tomorrow's professors. They have been brought up with the Internet, in a culture in which downloading free information or music is seemingly acceptable. A troublesome expose of the high prevalence and increasing trend toward cheating among university students has been reported across the world. This phenomenon is only going to increase, and hence, there is an urgent need to take a closer look at this issue. In this current scenario, there is real danger of compromising the scientific quality of research papers. There is increased temptation to deviate from ethical norms for research & publication. So, it is felt that awareness needs to be generated among scientific community: teachers, post graduate & graduate students & professionals engaged in sponsored or self sponsored research about what constitutes "research misconduct" & "deviations", so that one can guard against these & follow the ethical norms while pursuing research/publication.

The present review introduces to the readers, various pivotal issues in the implementation of sound and ethical research. It is prudent to take into consideration, various issues in the design of research studies, especially ones involving human experimentation such that the results are more valid, ethical & meaningful.

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