

Editorial

Research Ethics: It's What We Need the Most in Today's Scientific World

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The progress in the world of science has been enormous in the last few decades. Research and development are the two big supporting pillars in the giant structure of today's modern world. Scientists all over the world, with their breakthrough inventions, are leading the world to a new era where everything seems to be possible which was beyond imagination a couple of years back.

Having said this, one just ponders if there is a bigger hidden cost lying beneath the pyramid of success. Are we, as scientists and researchers, following all the norms, which we should be actually adhering to, while performing our respective tasks? Is it not the right question to ask ourselves, Is our approach in our work, in all the respects, ethical?

The term ethics refers to the philosophical study of the concepts of moral right and wrong. Ethics, in other sense, are a set of personal code of conduct based on how a person respects self, respects others, or the surroundings. Ethics in the field of research also have a similar meaning. Research ethics, in simple words, refers to the ethics of conducting the research based on the basic principles of ethics. It involves the application of basic fundamental ethical principles in research program. These principles are in fact the moral principles which form the basis of research activities undertaken by the scientists and researchers and guide them throughout.

Research ethics has several integral components, which when incorporated in the research program help to adopt an overall holistic approach. One of the foremost components in this list is honesty. Whether it is in the data collection, data analysis, or in reporting, one must strive for honesty in all the scientific communications. Misleading the sponsors, colleagues, subjects, or public by deceitfulness is perhaps the most heinous crime in the field of research and development.

Sincerity and integrity form the next components, which further strengthen one's work and are evidence of determination to the goals. Also, the objectivity, wherein one strives best to avoid any kind of bias, whether be in study design, data

analysis, data interpretation, or disclosure of personal or financial interests that may affect research, is an essential component of research ethics. Alertness and carefulness fall next in the list. Careless errors must always be avoided and critical and careful examination of everything is highly essential.

There is a big responsibility on the shoulders of the researcher in terms of responsible mentoring and giving due respect to colleagues involved in the projects. A good mentor always encourages and motivates the colleagues and keeps reminding them about their aims and objectives, while expressing openness to all new ideas coming up during the course, which may be beneficial to the project at large. The mentor always must exhibit a nondiscriminating attitude toward coworkers and subjects and follow the principle of social responsibility by promoting social good, through research and public education.

Openness and transparency are the supporting principles of research ethics which guide the researcher to share the data and disclose the methodology and other details, whenever required for evaluation, without concealing the facts. Further, one must possess accountability and take responsibility of his/her part in the research and always be prepared for any explanation or justification when asked for at any stage.

Confidentiality is certainly an inseparable part of research ethics where one is bound to protect confidential documents such as papers or grants submitted for publication, personnel records, patient records, etc. A thorough knowledge of the legal aspects is a crucial component in today's era for one must know and obey relevant laws and institutional and governmental policies, whenever involved.

Honoring the intellectual property goes hand in glove with research ethics. Utilizing data of others without permission defers the basic principles of research. One must always give due acknowledgment to all the contributors

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involved and must never plagiarize. The responsibility of publishing the data, for the betterment of area of research as well as for society at large also is an inseparable constituent of research ethics.

Last but certainly not the least, a concrete integral component of research ethics is the protection of animals and human subjects involved in the research program. Conducting of poorly designed or unnecessary animal experiments is highly unethical. When conducting research on human subjects, the

focus has to be on minimizing the harms and risks and maximizing the benefits; respecting human dignity, privacy, and autonomy; taking special precautions with vulnerable populations; and striving to distribute the benefits and burdens of research fairly.

While we all as researchers are committed toward development of science, there comes a quote from Dr. Hal Simeroth which we must remember "Science brings society to the next level; ethics keeps us there."