Bioethics: A brief review

Jharna Mandal, Dinoop Korol Ponnambath, Subhash Chandra Parija

Department of Microbiology, Jawaharlal Institute of Postgraduate Medical Education and Research, Puducherry, India
Department of Microbiology, PSG Institute of Medical Sciences and Research, Coimbatore, Tamil Nadu, India

Abstract

Medical and life sciences research is a key driver in development, which leads to better quality of life. These pursuits can lead to discrimination, human rights violation, and injustice. The field of bioethics explores the ethical issues arising due to these advances in research and encompasses social, judicial, and environmental aspects affecting human beings. This brief review discusses the origin of bioethics, its principles, various international organizations, and their network involved in the development and propagation of guidelines on conducting biomedical research.

Keywords: Bioethics, medicine, research, science

Address for correspondence: Dr. Jharna Mandal, Department of Microbiology, Jawaharlal Institute of Post Graduate Medical Education and Research, Dhanwantri Nagar, Gorimedu, Puducherry - 605 006, India. E-mail: drjharna@gmail.com

Scientific research leads to the development of newer technologies, contributing to a better future. Due to unrestricted research in science and technology, ethical issues of human rights violation, discrimination between individuals, races, and socioeconomic status of countries have arisen leading to injustice. Bioethics is a philosophical discipline encompassing social, legal, cultural, epidemiological, and ethical issues arising due to advance in healthcare and life science research. Few examples include end-of-life decisions, organ trafficking, human cloning, human dignity and rights in research trials, uniform access to health care support, genetic engineering, the recent UK-Human Fertilisation and Embryology Authority-approved in vitro fertilization technology of mitochondrial replacement therapy. The word “Bioethics” was coined by Fritz Jahr in 1926, while the concept of bioethics as “global ethics” was formulated by the American biochemist, Van Rensselaer Potter in his book, “Bioethics, A bridge to the future” in 1971. This field has been expanding since its inception in the past century, particularly in the last five decades.

The origin of bioethics dates back to the drafting of the Nuremberg code, which was based on the Nazi trials conducted by the Nazi doctors in Nuremberg, Germany (hence, the name “Nuremberg trials”). These nefarious trials were conducted during the World War II on prisoners in the military concentration camps. The American judiciaries to prosecute the involved doctors (Doctor’s trial) generated the Nuremberg code, which constituted ten principles to guide scientific/medical research. The Nuremberg code faces multiple pitfalls in concern with the modern medical research and practice due to the lack of updation and accusation of plagiarism since it has been adopted from the 1931 German “Guidelines on Human Experimentation.” Subsequently, the World Medical Association (WMA) which was established during the World War II developed the Declaration of Helsinki (DoH) in 1964. The declaration has been amended seven times and the current version of the declaration was published in 2013. The declaration is a statement of ethical principles for human
scientific research including identifiable human data and materials, which is available in eight languages. While the Nuremberg code focuses on research participants’ rights, the DoH focuses on physician’s obligations to research participants. Similar to the Nazi’s medical experiments in Europe, unethical Tuskegee syphilis research in the United States came to light in 1972. This research involving African-American people in Tuskegee, Alabama, was undertaken to study the natural course of syphilis for a duration of 40 years (1932–1972), where the research participants were not informed of their diagnosis of syphilis, deprived from the treatment even when penicillin was available, and prevented them getting recruited in military during the World War II to prevent loss from the study. In 1974, the National Research Act was signed and a commission was created to identify the ethical principles in the conduct of biomedical and behavioral research involving humans. Subsequently, in 1976, the commission summoned a 4-day meeting in Belmont Convention Center, Smithsonian Institute, to create a report on basic research ethics guidelines, called the “Belmont Report.” The report outlines three basic principles: respect for persons, beneficence, and justice. In 1979, Beauchamp and Childress published their book, “Principles of Biomedical Ethics” which elaborates four essential ethical principles of biomedical research: Autonomy, beneficence, nonmaleficence, and justice. Since the moral decision-making and action are based on these four ethical principles, instead of a theoretical model, these have described as ethical principlism, which are currently one of the most popular tools of analyzing biomedical research.

In the last five decades, numerous international, national, and regional organizations have developed and promulgated guidelines for biomedical research, for example, World Health Organization (WHO) and its collaborating centers (CC), United Nations Educational, Scientific, Cultural Organization (UNESCO), Council for International Organizations of Medical Sciences (CIOMS), Council of Europe, Nuffield Council on Bioethics. The regulations published by these agencies guide research ethics committees in approval of biomedical research involving human participants. The WHO guidelines on research ethics had undergone several amendments and the latest version was published in 2011 titled, “Standards and Operational Guidance for Ethics Review of Health-related Research involving human participants.” The Research Ethics Review Committee (ERC) of the WHO, a 27-membered committee appointed and headed by the Director-General reviews biomedical research projects supported technical or financially by the WHO. The ERC maintains high ethical standards and its work is guided by the constituted WHO manual, WMA’s DoH (1964, last updated 2013), International Ethical Guidelines for Biomedical Research Involving Human Subjects (CIOMS, 2002), and the International Guidelines for Ethical Review of Epidemiological Studies (CIOMS, 2009). In 2010, the “Ethics and Health Unit” of WHO headquarters, Geneva, had founded the global network of WHO CC for Bioethics. Currently, eight institutions have been recognized to implement, validate, and strengthen the WHO’s work in bioethics, particularly in low/middle-income countries. The CCs are located across various continents (2 - Unites States, 1 - Switzerland, 1 - Canada, 1 - Argentina, 1 - South Africa, 1 - Australia, and 1 - Singapore) to facilitate resource mobilization and capacity building across the globe. The CIOMS is an international nongovernmental organization, an associate partner of UNESCO in official relation to the WHO, founded in 1949. The objectives of CIOMS are to facilitate and promote international activities in biomedical sciences and represent/collaborate these centers with the specialized parent agencies, UNESCO and WHO. As of 2016, CIOMS membership includes 44 international, national, and associate member organizations including the Indian Council of Medical Research.

United Nations’ intellectual agency, UNESCO, started its bioethics program in 1993. This program is part of the UNESCO’s ethics of science and technology program under social and human sciences sector. The universal declarations introduced since its inception related to bioethics are Universal Declaration on the Human Genome and Human Rights (1997), International Declaration on Human Genetic Data (2003), and Universal Declaration on Bioethics and Human Rights (2005). Currently, four consultative bodies have been established by the UNESCO which acts as forums for executing the multidisciplinary/cultural and pluralistic ideas of bioethics. These include the International Bioethics Committee (IBC) in 1993, the Intergovernmental Bioethics Committee (IGBC) in 1998, the World Commission on the Ethics of Scientific Knowledge and Technology in 1998, and the United Nations Inter-Agency Committee on Bioethics in 2003. The IBC is a permanent committee composed of 36 experts elected by their Director-General. The IBC generates the universal declarations and recommendations in context with the field of bioethics. The IGBC comprises 36 member states elected by the UNESCO’s General Conference and the members meet once in 2 years to advice and submit their feedback regarding the advice and recommendations made by the IBC. These consultative bodies of UNESCO function in capacity building in the field
of bioethics at (1) institutional level, by providing support to the member states for establishing National Bioethics Committees and training the committee members, and (2) professional level, by providing ethics teacher-training courses, by introducing core curriculum on bioethics across the globe to maintain quality of bioethics education, and by establishing UNESCO chairs across the globe to facilitate cooperation in capacity building. To enhance worldwide dissemination of bioethics, the UNESCO introduced its free, online network Global Ethics Observatory (GEObs), which was officially launched in the 12th session of the IBC conducted at Tokyo, Japan, in 2005. This network constitutes six databases in six official languages to support ethics activities in the member states by establishing a register of experts in the field of bioethics, collect data regarding already established national ethics committees, ethics teaching programs, and legislative activities in certain member states to support the initiation and implementation in others. Similar to the “GEObs,” the global health ethics unit at WHO had launched a free online database opinions submitted by the National Ethics Committees, following the 8th summit of the National Bioethics Advisory Bodies conducted at Singapore in 2010.[2,8]

Currently, bioethics has been opined by experts to encounter quality control issues due to the multidisciplinary approach, i.e., viewing the topic in a broader aspect, which provokes intrusion by professionals belonging to various fields, thereby compromising the quality. In addition to this infiltration, numerous novice professionals and unapproved bioethics programs are being introduced every year compromising the quality of practice.[9] The principles and practice of bioethics lack consensus views or guidelines, which create confusion regarding the choice. Institutions/universities need to be aware of and consider standard internationally approved guidelines in constitution of Clinical Ethics Committees and in implementation of the principles of bioethics.

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REFERENCES
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