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ETHICAL CONSIDERATIONS IN THE PRACTICE OF THE MODERN PHYSICIAN-RESEARCHER

Abstract. Medical ethics is an endeavor to define appropriate conduct for doctors in complex clinical and research scenarios. It is not merely theoretical, as physicians and healthcare professionals encounter situations where they must make decisions concerning patient care during research and routine practice. While many situations dictate clear courses of action, some instances present ambiguity, requiring a comprehensive understanding of ethical analysis. The relevance of medical ethics persists today, as violations of fundamental ethical principles continue to occur. The publication is presented as a literature review using integrated search in PubMed, Scopus, Web of Science and Google Scholar databases. Search queries related to bioethics, public health and medicine were mainly used. The search depth was 10 years. Despite the issuance of the Declaration of Helsinki 59 years ago, with updates every decade to address new challenges, violations of basic medical ethics principles persist, particularly among young scientists and physician-researchers in countries where the field of science is still developing.

Key words: ethics, ethical issues, ethical research, research ethics committees, Institutional Review Board, Clinical Ethics Committee, physicians, medical error.

Introduction

Ethics refers to the moral values guiding human behavior and the principles that govern it. The situation becomes complex for a physician when they assume the role of a researcher. The physician-researcher must navigate both roles, and at times, the researcher's zeal can overshadow the physician's internal morality.

Numerous unethical human experiments have compelled society to recognize the need to curb unscrupulous research conduct, leading to the emergence of the first guidance for researchers, the «Nuremberg Code». Subsequently, the «Guidelines for Conducting Clinical Research» became the guiding doctrine for clinical researches. In addition to the four foundational principles—autonomy, beneficence, justice, and non-maleficence—two additional ethical principles, confidentiality, and integrity, have been added in recent years. The ethics committee plays the role of safeguarding these principles. The Interdisciplinary Ethics Committee ensures unbiased consideration of ethical aspects in presented project proposals [1].

Ethics committees are a valuable resource for clinicians, patients, and institutions, helping them cope with an increasingly complex healthcare environment and technologies, and providing the best care for patients. Like other areas of medicine, clinical ethics is specialized and interdisciplinary, and ethics consultants must undergo thorough and ongoing training to acquire and maintain competence. Healthcare organizations must allocate the necessary resources over time so that ethics consultants and authorizers can perform their work independently and at a high level. These investments will result in a win-win situation for patients, physician-researchers, and healthcare organizations [2].

However, this approach is too simplistic and incompatible with virtue-based healthcare, and it is also uncomfortable in requiring the respect of autonomy when principles conflict, potentially compromising patient interests and clinicians' commitment to global justice. It fails to serve as a universal method for resolving ethical dilemmas arising from conflicts between principles or their derivatives, as well as for resolving disagreements regarding the scope of principles' application—a gap acknowledged long ago but possibly unfulfilled by all other approaches to medical ethics in practice [3].

Review Objective is to assess the adherence to ethical norms by physician-researchers during research and daily practice.

Methods and Materials

The primary methodology for this study is a literature review using an integrated search of PubMed, Scopus, Web of Science, and Google Scholar databases, primarily employing search queries related to

bioethics, public health, and medicine. English-language articles from the past 10 years discussing bioethics in public health research, medicine, and existing ethical principles were selected to provide relevant examples from practice.

Review

Society is undergoing a period of intense self-analysis and debates concerning these ethical and legal issues, with physicians, scientist-researchers, and patients at the center of these discussions. As medical research becomes increasingly complex in recent years, anticipating rapid progress and devising a coordinated approach are necessary [4]. The problem lies in the fact that the more progress is achieved, the more its ethics are called into question, with ethics understood as a set of moral principles governing specific senses of guilt and certain forms of behavior [5]. Nevertheless, clinicians are active participants in research and must attend to all aspects of research projects, including study design, approval process, implementation, and publication. An essential part of this involves the role and rights of human subjects of research. Special attention is also given to vital issues like confidentiality, plagiarism, and transparency in research and clinical trials while adhering to ethical norms, which serve as moral compasses for researchers.

Ethical concerns have become more evident in scientific literature due to uncertainties in defining and measuring ethics and a lack of clarity in ethical standards. Moreover, conflicts between ethical principles worldwide exacerbate the existing situation, necessitating the development of a comprehensive and unified academic code of conduct. In this regard, examples of the lack of institutional guiding principles and the absence or accessibility of updated fraud prevention and detection software are cited. Analyzing the factors contributing to unethical behavior in research, educational policies or programs for budding researchers are crucial to reducing the risk of such conduct [6].

One such assumption is plagiarism, which involves the appropriation of ideas or texts, and is a serious and frequently mentioned scientific misconduct, notable for being conspicuously absent from formal educational programs. Novice scientists and physician-researchers are prone to engage in this negligence, intentionally or unintentionally, for a variety of reasons.

A survey of 2112 submitted articles, 36 of which were selected for review, revealed that the main reason for such negligence was the desire to publish within limited timelines and lack of preparation of scientific manuscripts. Observed forms of plagiarism included intentional and unintentional plagiarism of ideas, verbatim copying, graphics plagiarism, self-plagiarism, and translation plagiarism. Various software tools such as iThenticate, Turnitin Feedback Studio, and Grammarly are available for detecting plagiarism. In addition to thorough author reviews, reviewers and editors help to detect this threat and preserve scientific originality. Consequences can be serious, ranging from defamation and financial penalties to legal actions against the authors. Encouraging creative thinking at the grassroots level and conducting interactive seminars on scientific writing are key to preventing scientific abuses related to plagiarism among novice scientists and physician-researchers. This can have serious consequences and negatively impact the reputation of scientists and researchers in their future careers [7].

Finally, it is important to acknowledge that both researchers and ethical committees do not consistently apply ethical frameworks, ethical research processes, and ethical legal standards worldwide. What is considered ethical research in one context may not be considered ethical research in another. Researchers should consider whether methods other than patient modeling address the research question and obtain approval or endorsement from external reviewers when developing patient modeling studies for safe and adequate drug supply. They should seek recommendations. If an institutional review board is not available, researchers should consider alternative ways of expert assessment or, if necessary, national guiding principles and recommendations to ensure that research is conducted in accordance with ethical norms in line with the Helsinki Declaration [8]. To do this, it is proposed to assess the quality of individual studies using the Cochrane Risk of Bias 2 tool for interventional studies and other relevant measures for observational studies, and to conduct appropriate assessments of systematic publication bias. The credibility of the results should be assessed by a profiling specialist. Ultimately, the systematic review should conclude with recommendations for future research based on its findings. Inexperienced authors wishing to conduct systematic reviews on their own are strongly encouraged to undergo specialized training for this purpose, as provided in courses offered by The Cochrane Collaboration and other organizations [9].

Using broad search terms, the results of journal articles on medical negligence and medical care were analyzed. A literature search in MEDLINE, PubMed, and the Cochrane Library was performed using search terms «defensive medicine» and «medical negligence,» «medical negligence.» In this de-

scriptive review, many articles were analyzed, but 34 were chosen out of all that, in the author's opinion, were important to explain his point of view.

Medical errors had several causes. The main ones were ignoring safety guidelines and protocols, inability to disseminate information about drugs, inadequate access to patient information, lack of equipment, workload, and busy schedules, as well as physician fatigue [10].

All these errors, referred to as medical negligence, began and continue at the grassroots level, between the walls of medical schools. Unfortunately, current medical education is academically oriented, and students are forced to develop communication and support skills on their own. Structured training in medical humanitarian sciences is still lacking in the core medical program [11].

A safe website was used throughout one academic year to determine the volume and extent of medical ethics education in a bachelor's degree program and compare it to the topics taught by the Institute of Medical Ethics (IME) (2010) and the General Medical Council (GMC) (2009) in the "Doctors of Tomorrow" program (2009). This online audit involved discussing participants' educational experiences and their impact on their future practice. The results demonstrated an opportunistic nature of ethics education, especially in the clinical course, and highlighted the reality of a hidden curriculum for physician-researchers. Overall, ethics education was a satisfactory and positive experience for participants and met GMC and TIME program requirements [12].

PubMed, EMBASE, and PsycINFO were also used to search for controlled studies on medical ethics education with quantitative results. Search terms such as "ethics," "bioethics," "medical ethics," "physician-researchers," "residents," "education," "outcomes," and "controlled studies" were used. In total, nine studies (five randomized controlled trials and four non-randomized controlled trials) met inclusion criteria. The study subjects were physician-researchers (five studies), surgical residents (two studies), internal medicine department staff (one study), and family medicine faculty and their interns (one study). Educational methods, course content, and outcome measures varied significantly between studies. Common methodological issues included lack of blinding, lack of concealment of allocation, and generally small sample sizes of physician-researchers. A randomized controlled trial with a standardized patient population and trained resident surgeons was found to be methodologically rigorous [13].

Clinical ethics and its principles: Clinical ethics is similar to clinical medicine, as general principles and concepts must be applied sensibly and thoughtfully to unique clinical situations. Therefore, clinicians need a basic understanding of ethical theories and principles and develop a method for their application in complex clinical cases. Ideally, clinical ethics should be taught through cases encountered in practice. Ethical issues arise frequently, but too often they are not recognized or avoided rather than addressed and used for educational purposes. Most ethical issues, once recognized, are easily resolved based on consensus from previous cases. However, some ethical issues, typically called ethical dilemmas, do not allow for such easy resolution as there is no wide agreement on the appropriate course of action. In such cases, there may not be a consensus on the right solution, and more than one possible solution may be justified. Indeed, in such cases, potential solutions may carry both benefits and burdens, so the best solution may be the one that is least bad and has the fewest serious objections. Such situations require careful ethical analysis as well as attention to the process of ethical analysis and clinical resolution [14].

To resolve a conflict, it must first be identified, and there are many steps to take, such as impact assessment and determining an appropriate response. Conflicts are often minor or trivial and easily resolved. Participants in the discussion may simply take into account the special interests and views of the parties involved, or if they are committee members, they may abstain from voting.

More decisive actions may be required in other situations where the outcome of the conflict may be more important for both the individual and the organization. In some cases, individuals may need to completely relinquish their roles. For example, a physician taking care of a patient may need to relinquish one of these two roles when interacting with certain people. Alternatively, researchers studying their own results in clinical trials may need to outsource data analysis tasks. More serious cases may require more stringent measures. It is possible that the identified conflict is so fundamental that the individual's role is considered unacceptable and may even require resignation [15].

One of the reasons for non-compliance with ethical norms is burnout. Oncologists, for example, may experience burnout, which is associated with poor physical and mental health, increased medical errors, patient dissatisfaction, and reduced workforce [16].

Another reason for burnout is the Covid-19 pandemic, which presented a catastrophic global health crisis that continues to have seismic impacts on modern surgical services. During this pandemic, doctors had to make many difficult ethical decisions, but medical ethics helped make the best choices for patients during the Covid-19 pandemic [17].

It should be noted that the Covid-19 pandemic revealed many issues in assessing and publishing research. Some of these problems stem from strict research management and unwillingness to adhere to accepted ethical standards. However, any healthcare system that recognizes errors resulting from adherence to ethical norms, such as drug prescriptions, should create systems that minimize errors. Reducing errors should decrease harm to patients and improve the healthcare system overall. Many moral and ethical issues arising in medical practice are considered in this regard, despite alleged transgressions [18].

Doctors, who are bound by the spirit of the Hippocratic Oath and pledge above all to do no harm, must constantly seek ways to detect and prevent errors and improve outcomes. Today, one may criticize yesterday's practices but be confident in today's practices. [18].

Nevertheless, patient care and safety are our primary concern, so methods to increase productivity and patient safety prevail over competing issues. Therefore, it is fair to use methods for profit in healthcare when the goal is to enhance standards of medical care and patient safety [20].

To avoid errors and transfer the experience of the best specialists, healthcare is constantly evolving, also in relation to progressive economic, political, and social changes. As a result, the ethical values guiding medical practice have also changed [21].

Another problem has arisen. This concerns the implementation of artificial intelligence in healthcare, which is associated with many ethical issues. Artificial intelligence in medicine cannot gain the trust of patients and medical professionals if it does not properly address ethical questions. Transparency is one of the most important ethical issues related to AI in healthcare. A list of specific questions that need to be asked to make research evaluating the performance of AI algorithms more transparent from an ethical standpoint [22].

Artificial intelligence has great potential to improve the efficiency and accuracy of radiology, but it also has its own traps and biases. The spread of AI-based intelligent and autonomous systems in radiology can increase the risk of systemic errors with serious consequences and raise complex ethical and social issues. Currently, there is limited experience in using artificial intelligence in patient care in various clinical conditions. Extensive research is needed to understand how best to implement AI in clinical practice.

New ethical issues are emerging rapidly and regularly, and their assessment changes over time. Therefore, although it is important to consider the ethics of AI in radiology now, as our understanding of its consequences and potential expands, we will repeatedly return to this topic and re-examine the AI tools used in radiology to assess whether they comply with updated rules and standards [23].

Results and Discussion

Ethical reasoning serves as the basis for decision-making and professional judgment, guided by codes of ethics and conduct, and requires guidance in the normative legal base [24]. Of course, there are many ways to follow proper medical ethics. Proper medical ethics is evident at conferences, in lecture halls, and journals. However, there are still gaps and omissions, and attention to them can enrich this field, help make it more diverse and inclusive, and expand its influence [25].

The results showed that researchers of different levels, including doctors, constantly made various types of violations of ethical norms, so ethical codes were developed to reduce the number of errors. However, they did not cover every detail and were periodically improved to help scientists conduct tests and publish correctly. Although it seems that the basic principles are accessible to everyone, there are still many cases where people's rights are violated during clinical trials and treatment. All of this leads us to reconsider the rules and monitor their compliance daily.

Conclusion

Research shows that to avoid daily mistakes in medical institutions, all cases should be considered individually and ethical decisions should be worked out for each situation, as there is no universal answer to all questions. And so, ethical codes have undergone many changes, finding new ways to overcome them.

Novice researchers under the influence of pressure were forced or deliberately took risks, such as illegal borrowing, theft of other people's work, etc. All of this could have been foreseen and prevented if there was proper guidance at the beginning. Despite the fact that such guidelines exist and have been around for many years, this moment is not carefully controlled.

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